



UNIVERSITY OF MINNESOTA
TWIN CITIES

Office of Research and Technology
Transfer Administration
1919 University Avenue, 5th Floor
St. Paul, Minnesota 55104-3481
FACSIMILE (612) 624-4843

September 9, 1988

Linda DeRamus, Contracting Officer
USDI - Bureau of Land Management
18th & C Streets NW
Washington, DC 20240

RE: Contract AA852-CT5-29
Fertility Control in Wild Horses

Dear Ms. DeRamus:

A proposal for a modification to the above referenced program in the amount of \$134,811.00 is hereby submitted on behalf of Donald Siniff and John Tester, Department of Ecology and Behavioral Biology. This modification is to increase the funds available for the subcontract to Marshfield Medical Foundation.

This application has been administratively approved on behalf of the Board of Regents. Questions concerning programmatic aspects of the project should be directed to the Principal Investigators. Those having to do with contract and budgetary matters should be directed to Rick Dunn, Senior Grant and Contract Administrator, at 612/626-2265.

Sincerely,

Merlin Garlid
Assistant Director
Office of Research and Technology
Transfer Administration

RD/dh

Enc.

cc: Professor Donald Siniff, Ecology & Behavioral Biology
Professor John Tester, Ecology & Behavioral Biology
Tom Eagle, Ecology & Behavioral Biology



September 7, 1988

Ms. Linda DeRamus
Contracting Office
U.S. Department of Interior
Bureau of Land Management
Washington, D.C. 20240

RE: AA852-RP5-27

Dear Ms. DeRamus:

Enclosed please find a request for a modification to Contract AA852-RP5-27. This modification is a result of suggestions made by the National Academy of Sciences Committee on Wild Horses and Burros at a meeting in August 17, 1988 in Reno, Nevada. In order to answer two major questions raised by the Committee, the horses currently maintained in captivity at the Nevada Nile Ranch in Lovelock, NV have to be kept available for study until 1991. The attached contract modification covers the cost of collecting and analyzing the samples. We presume that, as with the current contract, the Bureau of Land Management will be responsible for maintaining and handling the horses. Since Don Siniff is out of the country until October, John Tester has reviewed this modification and cleared it with the University of Minnesota. If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Edward D. Plotka".

Edward D. Plotka, Ph.D.
Senior Research Physiologist

EDP:dal

Enclosure

cc: Fred Wagner, Ph.D.
John Boyles
Les Sweeney

510 North St. Joseph Avenue
Marshfield, WI 54449-1830
715-387-9192

Robert C. Intress, Ph.D.
Associate Director



September 7, 1988

Ms. Linda DeRamus
Contracting Office
U.S. Department of Interior
Bureau of Land Management
Washington, DC 20240

Dear Ms. De Ramus:

RE: Contract AA852-RP5-27

I, as an authorized official of the Marshfield Medical Research Foundation, have reviewed the modification to contract AA852-RP5-27 entitled, "Fertility Control in Wild Horses," and find the contract and budget to be consistent with Foundation policy. We look forward to continuing this study with the Bureau of Land Management.

If you have any questions on the financial aspects of this contract, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert C. Intress Ph.D." with a stylized flourish at the end.

Robert C. Intress, Ph.D.
Associate Director

dma

MODIFICATION TO CONTRACT AA852-RP5-27 ENTITLED
"FERTILITY CONTROL IN WILD HORSES"

PURPOSE: The purpose of this contract extension request is to specifically answer questions raised by the National Academy of Sciences Committee on Wild Horses and Burros in its August 17, 1988 meeting in Reno, Nevada. In that meeting committee members requested information on 1) the length of time the contraceptive implants are effective in horses and 2) the mechanism by which the implants block pregnancy. In order to answer these two questions, it is necessary to continue studying the horses currently being maintained at the Nevada Nile Ranch in Lovelock, Nevada. Therefore, the specific aim of this contract extension is to request that the horses currently under study at the Nevada Nile Ranch be maintained for study by the University of Minnesota and Marshfield Medical Research Foundation. The studies and costs outlined in this contract modification are necessary for answering the following two questions. 1) How long can the contraceptive implants prevent pregnancy in feral mares? 2) Do the contraceptive implants prevent pregnancy by blocking ovulation or by blocking conception? Calculations based on in vitro release rates of estradiol and progesterone indicate that an effective life of 5 years can be expected. Therefore, this contract modification is requested to extend the pen studies through the end of 1991.

BACKGROUND:

On September 30, 1985 we entered into a contract with the Bureau of Land Management to develop an implantable contraceptive that would block pregnancy for a period of at least two years. It was determined that the studies on captive mares would be conducted at the Nevada Nile Ranch in Lovelock, Nevada where the BLM had a contract to maintain horses.

The sequence of events for studies on captive animals since October 1, 1985 has been as follows:

- | | |
|---------------------------|---|
| November 11-16, 1985 | Implanted 6 groups of 30 mares each with various combinations of estradiol and progesterone. All implants were placed under the skin (subcutaneous) in the neck. Five horses from each group were handled and a blood sample collected every 2 weeks. |
| March 11, 1986 | It was determined that a significant number of horses had lost implants and that many of those mares retaining implants had hormone levels too low to effect contraception. |
| April 4-7 and 24-26, 1986 | Implanted 6 additional groups of 10 mares each with various combinations of estradiol, ethinylestradiol, progesterone and conjugated estradiol and ethinyl-estradiol. Implants were placed in the muscle of the rump (intramuscular), under the skin of the flank (subcutaneous), or in the peritoneal cavity (intraperitoneal). All horses in all groups |

were tested for estrous activity. Mares exhibiting estrus had a blood sample taken 10 days later for hormone analysis. All mares in the additional groups had a blood sample collected every two weeks for hormone analysis.

August 1, 1986

Estrus testing was stopped and a stallion was placed in the pens with the mares treated in November, 1985, with the original hormone implants. Mares that received implants in April, 1985 were determined to be anovulatory and not exhibiting any signs of estrus.

August 20-27, 1986

Mares in the Stone Cabin Management Unit were implanted with 1 of 2 hormone treatments: Ethinyl-estradiol only (EE2) and ethinyl-estradiol plus progesterone (PP+EE2). These groups appeared promising based on the results from the studies on captive mares at the Nevada Nile Ranch.

Aug. 28 & Sept. 6, 1986

Mares that were implanted in November, 1985 were palpated to determine if they were pregnant. A significant number of mares were pregnant and it was determined that those treatments did not effect contraception.

January 20, 1987

Two groups of 10 mares each were implanted with the same treatments (EE2; PP+EE2) that were placed in the mares in the Stone Cabin management units. Three additional groups of 10 mares each received implants containing lower levels of ethinylestradiol.

Aug. 24 - Sept. 3, 1987

Mares in the Clan Alpine Management Unit were implanted with EE2 or PP+EE2 containing hormones or implants containing no hormone (CI).

May 1, 1988

A stallion was placed in each of the two pens containing study mares that were implanted during April, 1986 at the Nevada Nile Ranch.

August 17, 1988

We reported to the National Academy of Science Committee on Wild Horses and Burros that current data indicats that at least two hormone treatments have blocked pregnancy without blocking ovulation and two more hormone treatments have blocked ovulation as well as pregnancy (Table 1).

METHODS:

The same procedures will be used to examine both questions, i.e. to determine the effective life of the implants and to determine if the implants block ovulation or block conception. Mares from all effective treatments will be maintained with a fertile stallion at all times. During the months of June and July of all years, blood will be collected from all mares at two week intervals to determine if ovulation has occurred. June and July were selected because this is the peak of the breeding season and if ovulation is going to occur at all, it should occur during these two months. Blood samples will also be collected at two week intervals during the month of November, after the breeding season is over to determine if any animals are pregnant. All blood samples will be assayed for complete blood counts, serum chemistry and serum progesterone. A progesterone level greater than 2.0 ng/ml will be evidence of ovulation and sustained elevation of progesterone for more than 2 consecutive bleedings will indicate the animal is pregnant. The treatment will be considered successful for those groups having a pregnancy rate less than 50 percent. Complete blood counts and serum chemistry analyses will be used to evaluate any long term detrimental effects of the hormone treatments.

TABLE 1

EFFICACY OF CONTRACEPTIVE IMPLANTS IN CAPTIVE FERAL MARES AS OF 8/31/88

TREATMENT GROUP	NO. IMPLANTED	NO. REMAINING*	YEAR 2			YEAR 3*		
			NO. OVULATING (%)	NO. PREGNANT (%)	PERCENT EFFICACY OF CONTRACEPTION	NO. OVULATING (%)	NO. PREGNANT (%)	PERCENT EFFICACY OF CONTRACEPTION
1.5-EE2	10	8	7(88)	1(12)	88	--	--	--
3-EE2	10	8	6(75)	1(12)	88	--	--	--
8-EE2	20	18	5(28)	0(0)	100	--	--	--
PP+EE2	10	8	3(38)	NT [†]	62 [†]	6(75)	2(25) ^{††}	75
	10	9	0(0)	0(0)	100	--	--	--
PP+E	15	9	10(100)	NT	0	9(100)	6(67)	33
PP+EB	10	8	5(62)	NT	38	8(100)	4(50)	50
PP+HE	9	4	4(67)	NT	33	4(100)	3(75)	25
PP+HE-G	10	7	2(29)	NT	71	6(86)	2(29) ^{††}	71
PP+EEME	10	7	5(71)	NT	71	7(100)	4(57) ^{††}	43
CI	30	17	19(100)	3/3(100) [°]	0	17(100)	14(82)	--

*As of August 1, 1988.

[†]Not tested (% efficacy is based on ovulation only)

^{††}These animals received subcutaneous or intramuscular implants. We need to verify that the implants are still present in the horses that got pregnant.

[°]3 control (CI) mares were bred.

YEAR 5 SUPPLEMENT (10/1/89 - 9/30/90)

	Salary	Fringe Benefit	Total
Personnel*			
(Technician - 4.8 mo.)	12,177	4,694	16,871
Supplies			
Blood collection syringes, needles, tubes, etc.			1,029
Chemicals, glassware and reagents for complete blood counts, hormone and serum chemistry assays			1,575
Dry ice for transporting samples			147
Travel			
8 trips for bleeding horses @ 735			5,880
Miscellaneous			
Reports, publications, diskettes, paper, etc.			735
			SUBTOTAL
			26,237
Indirect costs at 47.5% (Provisional TDC, less equipment)			12,463
			TOTAL YEAR 5
			\$38,700

YEAR 6 (10/1/90 - 9/30/91)

	Salary	Fringe Benefit	Total
Personnel*			
E. Plotka, Ph.D. (1.2mo.)	7,086	2,397	9,483
(Technician - 4.8 mo.)	13,363	5,151	18,514
Supplies			
Blood collection syringes, needles, tubes, etc.			1,080
Chemicals, glassware and reagents for complete blood counts, hormone and serum chemistry assays			1,654
Dry ice for transporting samples			154
Travel			
8 trips for bleeding horses @ 772			6,176
Miscellaneous			
Reports, publications, diskettes, paper, etc.			772
			SUBTOTAL
			37,833
Indirect costs at 47.5%			17,971
			TOTAL YEAR 6
			\$55,804

BUDGET JUSTIFICATION:

Salary for the technician is the actual salary for the individual currently working on the project. The increases for each successive year are based on step and cost of living increases budgeted for Foundation personnel in his category and conforms with the Foundation salary schedule. The technician will be collecting the blood samples and performing all assays necessary to monitor the health and reproductive status of the mares. Ed Plotka's salary is requested for the last year only because his salary is covered under the current contract through 1990.

The supplies are necessary for collecting and analyzing the 850 blood samples collected each year.

The travel represents the costs for airtravel, auto rental, motel and food for 1 person to travel to Bloomfield, NE to collect the blood samples and bring them back to Marshfield. It is assumed that the horses will be maintained and handled by BLM or BLM representatives at the holding facility near Bloomfield, NE. If that is not the case, travel and personnel will have to be adjusted.

The computer is requested to allow maintaining records on the horses, management of the results of all assays on the horses, analysis of the data for publication and presentation and preparation of the reports and manuscripts. During the course of the study, we have generated data from over 7,500 blood samples. Thus, we are currently processing over 75,000 assay results on captive and free-roaming horses from this study. This modification will add another 24,500 assay results for analysis.

Protocol No. _____

Account No. _____

Date Received by RAR _____

Program is: Research; Teaching; Other _____

Program is: Intramural; Extramural

UNIVERSITY OF MINNESOTA - ANIMAL USAGE FORM BA-22 (TYPEWRITTEN ONLY)

Dr. Donald B. Siniff and

318 Church St. S.E.

1. Principal Investigator Dr. John R. Tester Mailing Address Minneapolis, MN 55455

2. Department Ecol. & Behavioral Biol. College Biol. Sciences Phone # 612-625-2435 and

612-625-8462

3. Secondary Investigator Dr. Edward D. Plotka Phone # 715-387-5241

Marshfield Medical Fdn., Inc.

Marshfield, WI 54449

4. Project Title/s Fertility Control in Wild Horse Populations

5. List all Funding Sources—Multiple agencies must be listed below or be attached:

Name U.S. Department of Interior
Bureau of Land Mgmt. Deadline Date _____ ORTTA Number _____

Name _____ Deadline Date _____ ORTTA Number _____

6. Application is: New Renewal Continuation Supplement Other _____

If application is Renewal, Continuation or Supplement, furnish:

ORTTA # _____ PROTOCOL # _____

7. Application is for: a. Research Grant b. Research Contract c. University Course

d. Training Grant e. Fellowship f. Research Career Development

g. Program or Center Project h. Other—Describe _____

All animals used in the projects described herein will be procured, housed and used in compliance with University Regent's Policy on Animal Care and Use, NIH policy, Federal Animal Welfare Act and other applicable standards. I will submit a revised animal usage form to reflect any significant changes in this program.

8. Signature of Principal Investigator *Dr. John R. Tester* *D. B. Siniff* Date 9-8-88

9. Anticipated dates of study: Begin _____ End _____

Duration of Approval: Begin _____ Review _____

Univ. Animal Care Committee Chairperson _____ Date _____

Veterinarian _____ Date _____

10. Laboratory personnel: _____ Phone _____

If animals are to be housed in a lab. where and for how long: _____

11. Species Strain Where Housed *Classi- Number If surgery done is it
(Common Name) (Bldg Name) fication per yr. Survival or Terminal

Species (Common Name)	Strain	Where Housed (Bldg Name)	*Classi- fication	Number per yr.	If surgery done is it Survival or Terminal
Feral Horse		BLM Corrals Bloomfield, NE	a	110	Survival

* Classifications:

- No discomfort or short term discomfort (injections, ear tagging restraint of less than 12 hours, fasting of well nourished, healthy adults up to 48 hours).
- Unavoidable pain, distress or discomfort which is relieved by tranquilizers, analgesics or anesthetics (surgery, cardiac or retroorbital blood collection, trauma).
- Significant to severe pain, distress, discomfort or deprivation without anesthesia, analgesia, or tranquilization..

12. What alternatives to procedures which are likely to cause pain or distress have been considered? _____

13. How has the number of animals to be used been determined (statistical significance, quantity of tissue needed, etc.)? _____

Statistical significance and variability in data

14. Major categories of animal use. Circle all categories that are applicable and provide a description of material and methods with emphasis on the animal involvement in the section of this form indicated within parenthesis. If additional space is needed use back of page.

- Euthanize and harvest tissues (Item 17).
- Immunization for antibody production (Item 18).
- Physiologic measurements: if surgery is necessary see "n" below (Item 19).
- Dietary manipulation (Item 20).
- Pharmacology/Toxicology (including toxins of bacterial, fungal, etc., origin): (Item 21).
- Behavioral studies (Item 22).
- Environmental stress (e.g., cold exposure, restraint, forced exercise, prolonged fasting) (Item 23).
- Irradiation: describe location of irradiation facilities and type and amount of irradiation (Item 24).
- Hazardous material: describe type and amount of carcinogens or radioactive materials; also describe methods to protect personnel or other animals from the hazards (Item 24).
- Infectious agents: describe type (bacterial, fungal, etc.) and if human or animal pathogens are used, also describe methods to protect personnel or other animals from the hazards (Item 24).
- Trauma (Item 25)
- Other (specify; Item 32) _____
- Mechanical restraint devices (Item 26).
- Surgery (Item 27).

15. Abstract of planned use of living vertebrate animals including the rationale for choice of animal species.

The choice of species was dictated by the request for proposal received from BLM. These studies are a continuation of the research conducted on captive feral mares in the BLM holding facility at Lovelock, NEV. The proposed studies are to continue collecting data on mares already implanted with hormonal contraceptives to determine the effective life of the implants. BLM will maintain and provide care for study animals, and study mares will likely be moved to a BLM holding facility in Bloomfield, NEB.

16. Please indicate the potential contributions that these studies could make to the life sciences.

Management plans have been written for range lands being administered by BLM. These plans specify the population of wild horses that should be maintained on each area. BLM is required to maintain populations at the specified level, but can only do so by periodically removing horses. Some of the horses removed are adopted to interested citizens. The remaining horses are held in facilities such as those at Lovelock until they die.

The proposed research could eliminate the removal of horses by providing a technique for holding population levels at the level specified by the management plan. In addition to eliminating the confinement of wild animals, the research has the potential of saving somewhere in the range of \$10 million annually in costs of maintaining unadoptable horses.

17. Do all personnel participate in the Occupational Health Program which consists of an update of tetanus immunization, tuberculin test repeated at 6 month interval for employees working with monkeys, and optional rabies immunization for personnel working with carnivores. Other personnel health matters are considered on an individual basis in cooperation with the University Boynton Health Service. For more information call 624-7687.

Yes _____ NO X

18. For immunization and antibody production, indicate:

a. Species

b. antigen(s)

c. adjuvant(s)

d. route anatomic site, frequency, and volume of injection

e. method of obtaining blood

19. For physiologic measurements not described under surgery (item 27), describe methods including any drugs used. (Include dosage and route of administration)

Horses are restrained in a squeeze chute while blood samples are drawn from the jugular vein. The procedure was developed by our technicians working with a BLM veterinarian.

20. Dietary manipulations - describe any dietary manipulation and special feeding requirements, caloric or nutrient restrictions or excesses.

None

21. Pharmacologic/toxicologic studies - describe material to be evaluated, route and duration of administration, testing methods such as tail flick, withdrawal, writhing test, LD₅₀ etc. If hazardous materials are used describe precautions to protect personnel and animals (see also Item 24). Describe the end point of the study and, if death is the end point, provide justification.

None

26. Describe any mechanical devices used to handle, manipulate, or restrain the animals that are not described in Items 14 through 22. If animals are restrained more than 1 hour describe their care.

27. Surgery, Anesthesia and Analgesia. (Guidelines for the use of anesthetics, analgesics, etc are available from Research Animal Resources 624-9100.)

Surgery - describe survival and nonsurvival procedures.

1. Nonsurvival (Animal does not awaken from surgery)

Species _____ Procedure _____

Where is surgery performed (building and room #)? _____

Anesthetics/muscle relaxants dose, route, frequency _____

Person (s) doing surgery _____

2. Survival Procedure (animal is allowed to recover for any length of time).

Species _____ Procedure _____

Where is surgery performed (building and room #)? _____

Anesthetics/muscle relaxants dose, route, frequency _____

How long will animals be maintained after surgery? _____

Person (s) doing surgery _____

3. For Survival surgery describe the post operative care to be provided including fluids, antibiotics analgesics. Indicate dose, route of administration, and anticipated duration of treatment. For major surgery on dogs, cats, or nonhuman primates analgesics must be given during the first 24 hours post-operatively.

22. Behavioral studies - describe methods including use of any noxious stimuli or other methods of positive or negative reinforcement.

Casual observation to detect abnormal behavior that may be attributed to hormonal treatments.

23. Environmental stress - describe any significant departure from the normal laboratory environment in which the animals will be kept, e.g., cold exposure, restraint, forced exercise.

None

24. Hazardous material (irradiation, radionuclides, carcinogens, mutagens, teratogens, toxic materials, infectious organisms) - describe the hazard, method, route and place of administration, personnel involved, precautions to protect persons and animals, duration hazard is a threat, carcass disposal. Describe the end point of the study and, if death is the end point, provide justification.

None

25. Trauma - describe any trauma not described under surgery (item 27). Include any drugs to alleviate pain or distress. (Include drug name, dosage, and route of administration).

28. In studies in which the animals may become chronically ill eg. organ transplantation, tumor bearing animals, infectious disease studies, chronic instrumentation etc, please describe the criteria for euthanasia prior to the scheduled end of the study.

29. Describe method of euthanasia for each species of animal. (Give dosage and route of administration if injectable drugs are used.) If animals are euthanized by decapitation or cervical dislocation and are not anesthetized or sedated a written justification must be provided-see item 30.

30. Give scientific justification for physical methods of euthanasia on awake animals. (Please consult euthanasia table approved by University Animal Care Committee.)

31. Animal Care Costs (Per Diem rates for animal care can be obtained from RAR).

a. Species	b. Average daily census	c. Average no. days housed	d. Day care rate	MULT. BXCXD
_____	_____	X _____	X _____	= _____
_____	_____	X _____	X _____	= _____
_____	_____	X _____	X _____	= _____
_____	_____	X _____	X _____	= _____

Have the costs of animal care been included in the budget of this application?
 yes _____ no _____. If no, identify source of funds.

32. Other information not described elsewhere.

This research is a supplement to a current study and involves only personnel from Marshfield Medical Research Foundation, Inc. (subcontractor). A revised BA Form 22, dated 1-22-88, for the research project is on file.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUATION SHEET

2. Contract No. AA85J-CTS-39

3. Report No.

4. Contract Name

25. Narrative Report (continued)

5. Date

10/17/85

10/18/85

We completed the review of the HNA we observed all of the radio collared moose and the majority of the other species were collared. We found 3 moose houses.

Moose collar number 902. The moose had been cut but was injured and had maggots. We removed the collar and cleaned and located the wounds. There were large scars on the neck. The moose was in good physical condition.

2. Moose collar number 972. The moose has red in size collar that were highly infected. We removed the collar and cleaned and located the wounds. The moose had large scars on the neck under the neck. The moose was in good condition.

3. Sheep collar number 543. The collar had been cut over the ears. There was only one small cut. There was no injury to the ears. We removed the collar. The house was in good physical condition.

Tom Gault stated that about 75 radio collars remain out of the original 100.

Tom and I discussed the possibility of sending more radio collared houses in the Stone Cabin HNA to cut numbers down to AMK. He had several proposals that he planned to explore.

26. Signature

27. Title

28. Office



Les
UTAH STATE UNIVERSITY · LOGAN, UTAH 84322

ECOLOGY CENTER

August 30, 1988

Mr. Les Sweeney, Chief
Biological Resources Branch
Nevada State Office
U.S. Bureau of Land Management
850 Harrard Way
P.O. Box 12000
Reno, Nevada 89520

Dear Les:

I enclose the material you requested on the members of the Committee on Wild Horse and Burro Research.

We appreciated your meeting with us, Les. I know everyone is busy and it especially cut into the schedules of the out-of-town people. Please extend my thanks to them.

Sincerely,

A handwritten signature in cursive script, appearing to read "Fred Wagner".

Frederic H. Wagner, Chair
Committee on Wild Horse
and Burro Research

FHW/sb

Enclosure

NATIONAL RESEARCH COUNCIL

2101 Constitution Avenue Washington, D. C. 20418

BOARD ON AGRICULTURE

Committee on Wild Horse and Burro Research

FREDERIC H. WAGNER, Chair
College of Natural Resources
Utah State University
Logan, UT 84322
(801) 750-2555

JOEL BERGER
Dept of Range Wildlife & Forestry
University of Nevada
1000 Valley Road
Reno, NV 89512
(702) 784-4314, -6763
[8/20 PO Box 126, Wall SD 57790]

DALE R. McCULLOUGH
Department of Forestry
University of California
145 Mulford Hall
Berkeley, CA 94720
(415) 642-8462

JOHN W. MENKE
Dept of Agronomy and Range Science
University of California
Room 249 A Hunt Hall
Davis, CA 95616
(916) 752-0568, -1703

EDWARD S. MURRAY
Spur Veterinary Hospital
Box 277
Spur, TX 79370
(806) 271-3355

BILL W. PICKETT
Equine Sciences Program
Colorado State University
Ft. Collins, CO 80523
(303) 491-8373

ULYSSES S. SEAL
VA Medical Center
54th Street & 48th Avenue, South
Minneapolis, MN 55417
(612) 725-2000 (Office)
(612) 888-7267 (Home)

MAITLAND SHARPE
Izaak Walton League of America
1701 N. Ft. Myer Drive, Suite 1100
Arlington, VA 22209
(202) 528-1818

*Walt Corneille
Dept of Biology
N.M. St. Univ.
Las Alamos, N.Mex.
(505) 646-3611*

Board Member: John Pino

Staff: Richard Wiles, *Project Officer*
Susanne Mason, *Senior Project Assistant*

Board on Agriculture, National Research Council, (202) 334-3071

July 27, 1988

Biographical Information

of the Committee on Wild Horse and Burro Research

FREDERIC H. WAGNER, Ph.D., Chair
(wildlife management, biology)

WAGNER, FREDERIC HAMILTON, b Corpus Christi, Tex, Sept 26, 26; m 49; c 2. BIOLOGY. Educ: Southern Methodist Univ, BS, 49; Univ Wis, MS, 53, PhD(wildlife mgt, zool), 61. Prof Exp: Refuge asst, US Fish & Wildlife Serv, 45; asst zool & bot, Southern Methodist Univ, 46-49; asst wildlife mgt, Univ Wis, 49-51; res fel, Wildlife Mgt Inst, 51; res biologist, Wis Conserv Dept, 52-58; asst prof wildlife resources, Utah State Univ, 58-59; res biologist, Wis Conserv Dept, 59-61; assoc prof, 61-66, assoc dean, Col Natural Resources, 70-77, PROF WILDLIFE RESOURCES, UTAH STATE UNIV, 66-. ASSOC DEAN, COL NATURAL RESOURCES, 77- Concurrent Pos: Dir Desert Biomed, US-Int Biol Prog & mem US Exec Comt, Int Biol Prog, 71-74; mem comt predator control, President's Coun Environ Qual, 71. Honors & Awards: Award, Wildlife Soc, 68. Mem: Ecol Soc Am; Am Soc Mammal; Wildlife Soc; Am Inst Biol Sci; Cooper Ornith Soc; Sigma XI Res; Vertebrate population ecology, especially population dynamics, limiting factors and homeostatic mechanisms; wildlife management; conservation of natural resources; systems ecology. Mailing Add: Dept Wildlife Resources Utah State Univ Logan UT 84321

ULYSSES S. SEAL, Ph.D.
(reproductive biology)

b Mullens, W Va, June 13, 29; PSYCHOLOGY, BIOCHEMISTRY. Educ: Emory Univ, BA(psych), 49, MA(psych), 50, PhD(biochem), 57; Univ of Minnesota, Postdoc(biochem), 57-59. Prof Exp: research chemist, VA Med Ctr, 59-. CAREER RESEARCH SCIENTIST, VA MEDICAL CENTER, MINNEAPOLIS, 80-; prof, biochemistry, Univ of Minnesota, 71-. fisheries & wildlife, 76-, ecology & animal behavior, 86-. Concurrent Pos: originator & dir, Incl Species Inventory System, 72-78; leader, US-USSR Environmental Agreement, Animal Immobilization Project, 78; chair, Captive Breeding Specialist Group, IUCN/SSC, 78-; mem, OTA Genetic Diversity Animal Resources Working Group, 84-86; VACO Research Service, Planning Council, 88-. Mem: AAAS; Endocrine Society; Society for the Study of Reproduction; Wildlife Society. Mailing Add: Veteran's Administration Medical Center, Bldg 49, Room 207, 54th St & 48th Ave S., Minneapolis MN 55417.

Equine Science

BILL W. PICKETT, Ph.D.
(equine reproductive physiology)

PICKETT, BILL WAYNE, b Cyril, Okla, Dec 14, 30; m 55; c 3. REPRODUCTIVE PHYSIOLOGY. Educ: Okla State Univ, BS, 52; Univ Mo, MS, 55, PhD(agr), 58. Prof Exp: From asst prof to assoc prof, Univ Conn, 57-67, res asst, 58-59; PROF PHYSIOL & BIOPHYS, COLO STATE UNIV, 67-. DIR ANIMAL REPROD LAB, COL VET MED & BIOMED SCI, 70- Concurrent Pos: Mem, Rockefeller Found Mex Agr Prog, 63. Honors & Awards: Physiol & Endocrinol Award, Am Soc Animal Sci, 78; Res Award, Nat Asn Animal Breeders, 80; L W Durrall Award, Colo State Univ, 81. Mem: Am Soc Animal Sci; AAAS; Soc Study Reprod; Soc Study Fertil; Am Dairy Sci Assn. Res: Reproductive physiology of the male with special emphasis on preservation of spermatozoa of the equine and bovine species. Mailing Add: Animal Reprod Lab Dept of Physiol Col of Vet Med Colo State Univ Ft Collins CO 80523

JOEL BERGER, Ph.D.
(equine science)

b December 22, 51; BIOLOGY, EQUINE SCIENCE. Educ: California State Univ, BA(biology), 74, MS(biology), 75; University of Colorado, PhD(biology), 78; Smithsonian Institution, Post-Doc Fellowship, 78-79. Prof Exp: adjunct prof, Univ of New Mexico, 84; adjunct prof, Northern Arizona Univ, 85; ASSOC PROF, UNIV OF NEVADA, 85-. Concurrent Pos: res assoc (reappt), Smithsonian Institution, study of social biology and population dynamics of wild horses in the Great Basin Desert, 79-88. Honors & Awards: Guggenheim Foundation Grants, 80-84, "Resource Defense and the Dynamics of Agression in Wild Horses"; National Geographic Society Research Grants, 82 & 83, "Wild Horses: Reproduction, Mortality, and Social Biology." Mailing Add: Dept of Range, Wildlife, & Forestry, Univ of Nevada, 1000 Valley Road, Reno NV 89512.

Veterinary Medicine

ED MURRAY, D.V.M.
(equine lameness)

Educ: Colorado State Univ, DVM, 62. *Prof Exp:* VETERINARIAN, SPUR VETERINARY HOSPITAL. *Concurrent Pos:* State Board of Examiners, State of Texas; vice president, American Association of Equine Practitioners. *Mailing Add:* Spur Veterinary Hospital, Box 277, Spur TX 79370.

Population Ecology

DALE R. McCULLOUGH, Ph.D.
(wildlife management, ecology)

MCCULLOUGH, DALE RICHARD, b Sioux Falls, SDak, Dec 5, 33; m 58; c 3. WILDLIFE MANAGEMENT, ECOLOGY. *Educ:* SDak State Univ, BS, 57; Ore State Univ, MS, 60; Univ Calif, Berkeley, PhD(zool), 66. *Prof Exp:* Instr zool, Univ Calif, Berkeley, 65-66; asst prof wildlife mgt, Univ Mich, Ann Arbor, 66-69, assoc prof wildlife & fisheries, 69-74, chmn resource ecol prog, 71-74, prof natural resources, 74-80; MEM FAC FORESTRY & RES MGT, UNIV CALIF, BERKELEY, 80- *Mem:* Wildlife Soc; Ecol Soc Am. *Res:* Ecology and population dynamics of large herbivores; ecosystem processes. *Mailing Add:* Dept Forestry & Res Mgt Univ Calif Berkeley CA 94720

Range Management

JOHN W. MENKE, Ph.D.
(range science, agronomy)

b San Francisco, Calif, April 16, 45; RANGE SCIENCE, AGRONOMY. *Educ:* Amer River College, AA(math), 66; Univ of California-Davis, BS(range mgmt), 69, MS(agronomy), 70; Colorado State Univ, PhD(range science), 73. *Prof Exp:* asst prof and asst range ecologist, Agric Experiment Station, Dept of Forestry and Resource Mgmt, Univ of California-Berkeley, 73-78; asst prof and asst range ecologist to assoc prof and assoc range ecologist, Agric Experiment Station, Dept of Agronomy and Range Science, Univ of California-Davis, 78-86; PROF AND RANGE ECOLOGIST, AGRIC EXPERIMENT STATION, DEPT OF AGRONOMY AND RANGE SCIENCE, UNIV OF CALIFORNIA-DAVIS, 86-. *Concurrent Pos:* member, Western Regional Coordinating Committee on Rangelands Research, 81-; consultant, OTA assessment of the impacts of technologies on productivity of rangeland resources, 81; member, Range Management Advisory Committee, CA State Board of Forestry, 78-; consultant on rangeland management, US Army Corps of Engineers, 76-. *Mem:* Society for Range Management, Ecological Society of America, AAAS, American Institute of Biological Sciences. *Mailing Add:* Dept of Agronomy and Range Science, Univ of California, Davis CA 95616.

Public Lands Policy

MAITLAND SHARPE
(ecology, political science)

b Washington, DC, July 13, 45; ECOLOGY, POLITICAL SCIENCE. *Educ:* Swarthmore College, BA, 67; Stanford Univ, MA, 68. *Prof Exp:* consultant to National Parks, Future Project, Conservation Foundation, 72; coauthor and editor *A Citizens Guide to Clean Water*, Izaak Walton League of America, 72; environmental affairs director, Izaak Walton League, 73-82; CONSERVATION DIRECTOR AND ASSOCIATE EXECUTIVE DIRECTOR, IZAAK WALTON LEAGUE, 82-. *Mem:* US Man and the Biosphere Committee on Rangelands, Implementation Board for the North American Waterfowl Plan, Alliance of Environmental Education, Coalition for Water Project Review, Council for a Sound Waterways Policy, Natural Resources Council of America, Nat'l Fish and Wildlife Coordinating Committee, River Country Voices. *Mailing Add:* Izaak Walton League of America, 1701 N. Fort Myer Drive, Suite 1100, Arlington VA 22209.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

1. Page 2 of 2

2. Contract No. AA882-95-27 3. Report No.
4. Contract Name

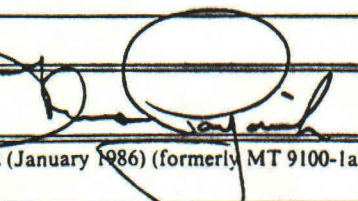
25. Narrative Report (continued)

5. Date 5/24/88

open wounds on her neck had healed. However, there was a large clump of scar tissue below the neck. Tom Eagle replaced the collar after first trimming the mane where the collar would sit. I checked the collar for tightness and I felt the collar was a little tight. On the next setting Eagle expressed concern that the collar was too loose and would slip up over the ears. I would have to agree with his assessment. He decided to replace the collar at the tighter setting. We'll probably have trouble with this mane again, especially when the mane grows out and tightens up the collar even more. Eagle's main concern seems to be with losing collars as he claims has happened in Carson City.

We found a stud horse that had grown into his collar. He had a small cut behind the jaw. We removed the collar and treated the cut with Nitrofurazone. The horse was in good physical condition.

There were no further attempts to locate animals due to the strong winds.

26. Signature 

27. Title Natural Resource Spec.

28. Office Tanqueah RA
CONTRACTING OFFICER

25. Narrative Report (continued)

5. Date

5/24/88

infection. The wound emitted a very bad odor. There was a lot of scar tissue under the neck from previous injury - which had healed over. The scar tissue was 3-4 inches in depth. We cleaned the wound and treated it with nitrofurazone. The collar was removed and the tail bobbed off. She was in good physical condition. She was bleeding a lot from the dart entry point on the rear of the horse (approx 3 inches from the rectum). Eagle did not feel it was serious.

We cancelled the remainder of the days flight due to high winds and rescheduled for May 23, 1988.

26. Signature

27. Title

28. Office

[Signature] Natural Resource Spec. Taropah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

1. Page 2 of 3

2. Contract No. AA852-CTS-229 3. Report No.
4. Contract Name

25. Narrative Report (continued)

5. Date

drop back 10-15 yards we observed the foal catching the band almost immediately after the helicopters moved off. Eagle made a good effort not to chase any of the bands (with or without foal's) for very long.

About noon we located a gray mare requiring treatment. Her number was #902. She had a radio collar. She had a large abscess under the neck. The abscess appears to be from continuous cutting and infection from the collar. There was a small infected cut under the neck at the base of the abscess. There were a lot of flies around the wound and some maggots. The wound had a very foul odor. The mare collapsed under the drug in a rock pit. She received a small cut on her right jaw where she struck a rock when she fell. We removed the collar, treated the wound after cleaning it and bobbed the tail. The wound was treated with nitrofurazone. She was in good physical condition with a thick layer of flesh over her ribs and hip bones.

We treated a second mare whose radio collar had quit working. Eagle says he had not observed her since January. When she collapsed under the drug, she got hung-up in a Pinyon pine tree. She received no injury from the tree. She wore collar number #905. She had a deep cut under the neck. The cut was very infected and had a very bad odor. The cut was infested with a lot of maggots. There was a lot of flies around the cut. When we removed the collar the

26. Signature

27. Title

28. Office

25. Narrative Report (continued)

5. Date

cut began to bleed (most of the other collars removed did not result in bleeding). We cleaned the wound and treated it with nitrophenol. The tail was bobbed. The mare was in very good physical condition despite the infected wound.

The warm temperatures of the past 5 days appears to be resulting in an increase in infection and fly/maggot infestations to the wounds. This may aggravate small cuts under collars.

There are approximately 3 more horses requiring treatment. These will be treated in June. The horses requiring treatment were in bands with foals.

We were able to locate all but 2 or 3 radio collars. We terminated the flights as the pilots were approaching their 8 hour/day limit. We ended the flight at 1730.

26. Signature

27. Title

28. Office

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

I. Page 2 of 2

2. Contract No. A4852-CT5-29

3. Report No.

4. Contract Name

25. Narrative Report (continued)

5. Date

6/13/88

did not have a radio collar and was running
in a band without radio collared horses.

26. Signature

27. Title

28. Office



Natural Resource Spec.

Tonopah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY

2. Contract No. AA852-CTS-29 3. Report No. _____
4. Contract Name _____

5. Contractor University of Minnesota 6. Contractor Representative on Site Tom Eagle

7. Government Officials on Site Thomas Pogacnik 8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date 6/14/88 10. Day of Week Tuesday 11. Time Arrived 0800 12. Time Departed 1530 13. Weather Hot, clear, windy

14. Temperature ° F Min. 90 Max. _____ 15. Ground Condition/ Ref. Location Stone Cabin Valley 16. Contract Time _____ 17. Days Used _____ 18. Completion Date _____

19. Time Used (%) _____ 20. Work Completed (%) _____ 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

6/14/88: Began 0845
The day's agenda included completing the census begun 6/13/88, rebranding of 4 horses and treatment of 3 horses. To that end, we only completed the census. We began the day by attempting to dart a mare that needed treatment. The mare was in the southern portion of the allotment. The darted mare ran directly at the Nevada Test Range boundary fence. Although

26. Signature [Signature] 27. Title Natural Resource Spec. 28. Office Tonopah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

1. Page 2 of 3

2. Contract No. AA82-115-19 Report No.

4. Contract Name

25. Narrative Report (continued)

5. Date

6/22/88

she did not run through the fence, she also did not respond to the drug and would not go down. She remained on the fence line. Because of Test Range airspace restrictions we did not pursue the mare and decided to return later.

We finished most of the census finding most of the horses in the upper reaches of the Hot Creek and Kawich mountains.

We located a mare Tom Eagle wanted to recollar. The mare's old number was 887. We darted her and she went down about 3 miles north east of the Stone Cabin ranch. The mare was in good physical shape. The wounds had healed although there were large clumps of scar tissue under the neck and no hair growing on the old cut. We replaced the collar (#515). Although the collar was not replaced extremely tightly, it sits on the old scar tissue and, because of the scar tissue clumps, has little room to move. Eagle stated that, in his opinion, the collar was not too tight and because the horses were in good flesh the collar wouldn't get any tighter.

At 1135 Tom darted another mare he wanted to recollar. He asked that the helicopter I was in watch the mare. He then realized at 1140 that he had darted a second mare. He stayed with that mare until it went down at 1150. The mare I was watching did not respond to the drug. Eagle attempted to dart the mare a second time but the dart bounced off. A third attempt to dart also resulted in the dart bouncing off. It was now 1215 and we had run the horse about 12 miles. I told Tom that we should discontinue the chase. His only concern was that the mare did not go down.

26. Signature

27. Title

28. Office

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

1. Page 3 of 3

2. Contract No. AA858-CTS-29

3. Report No.

4. Contract Name

25. Narrative Report (continued)

5. Date

6/22/88

after we left. We observed the mare for several more minutes and then left her to refuel the helicopter. After refueling, we went to look for the other mare Eagle had darted and left. However, by the time we got there, she had gotten up and left. We searched for her for about 30 minutes, but could not find her.

We then returned to the southern portion of the allotment to try to dart the first injured horse we had tried to dart earlier in the day. She was still on the fence line about 1 mile west of the main Test Range entrance. We contacted the Test Range to get permission to push the horse off the fence line. After about 1 hour we were told we could only do any flying east of the main gate. We could not fly to the west of the gate. This ended our attempt to dart that mare.

I requested to Eagle that we schedule another flight to attend to the 3 horses identified as needing medical assistance. He did not seem receptive and said he would talk to Sweeney about the need.

Overall, we wasted a lot of flying time due to bad luck and disorganization.

Eagle stated that, after all the chasing to recapture horses, it wasn't really necessary and he probably wouldn't recapture any more horses.

26. Signature

27. Title

28. Office

D. J. [Signature]
Natural Resource Spec. Topopah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. AA852-CT5-29 3. Report No.
4. Contract Name

5. Contractor University of Minnesota 6. Contractor Representative on Site Tom Eagle

7. Government Officials on Site Thomas Pogacnik 8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date 6/26/88 10. Day of Week Sunday 11. Time Arrived 0800 12. Time Departed 1500 13. Weather Hot, clear, calm

14. Temperature °F Min. 90 Max. 15. Ground Condition/Ref. Location Stone Cabin Valley 16. Contract Time 17. Days Used 18. Completion Date

19. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	<input checked="" type="checkbox"/> (check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report
6/26/88: Began 0800
The purpose of this flight was to locate and treat 3 mares known to have collar problems. These are the horses we did not treat on 6/14/88 (the regularly scheduled flight). One of the horses had a radio collar, while the other two did not. We first began looking for the radio collared mare. We began the search just north of the

26. Signature [Signature] 27. Title Natural Resource Spec 28. Office Towopah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

1. Page 2 of 2

2. Contract No. AA852-CTS-29 3. Report No.
4. Contract Name

25. Narrative Report (continued)

5. Date
6/27/88

test site boundary fence. We found the mare (#887) about 2 miles northeast of Reeds Ranch well. The mare had expired. She appeared to have been dead only 2 or 3 days, as only the soft tissues around the face has decomposed. It appeared that there may have been a significant amount of collar injury, as the neck was the only fleshy/hide portion of the animal in an initial stage of decomposition. I carefully observed the carcass for bullet holes but could not find any. There were numerous scars on the horse's flank from what appeared to be barbed wire cuts. The scab from the dart (the mare was darted 6/14/88 but did not respond to the drug) was also evident. Eagle would not state conclusively that the death was caused by the collar or the drug minus the antidote. He felt that it was probably a combination of the collar, drug and confusion induced by the drug. In any case, I expressed that I felt the death was attributable to one research activity or another. Tom agreed. If death was induced by the drug minus the antidote, we may have two more mare horses in a similar condition. We darted two mares on 6/14 which also did not receive an antidote. In that they were without collars, that additional stress may spare them a similar fate as #887.

We spent 4 hours searching for the remaining two collared horses with problems but could not find them. We searched most of the valley and surrounding hills. We called off the search for the day, at 1400.

26. Signature

27. Title

28. Office

Natural Resource Spec

Topopah RA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2. Contract No AA852-CTS-29 3. Report No.
4. Contract Name

CONTRACT DIARY

5. Contractor University of Minnesota 6. Contractor Representative on Site NONE
7. Government Officials on Site Thomas Pogreuk Steve Kramer 8. Government provided services adequate and timely?
 Yes No—Explain in narrative
9. Date 6/28/88 10. Day of Week Tuesday 11. Time Arrived 1800 12. Time Departed 2030 13. Weather Hot, clear, calm
14. Temperature ° F Min. 95° Max. 15. Ground Condition/Ref. Location Nevada Test Range 16. Contract Time 17. Days Used 18. Completion Date
19. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (*X* appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

6/28/88

I received a call today from Major Zimmerman of Advanced Security, Inc. on the Nevada Test Range. He said that a horse wearing a collar was in bad shape with injury around the collar. He stated that an escort would be provided to the horse if we would come out to provide medical attention. We arrived at the front gate at 6:00pm. We were

26. Signature [Signature] 27. Title Natural Resource Specialist 28. Office Topopah RA
CONTRACTING OFFICER

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY CONTINUATION SHEET

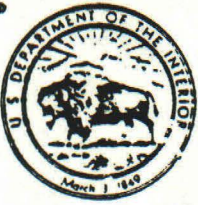
2. Contract No. AA852-CT5-29 3. Report No.
4. Contract Name

25. Narrative Report (continued) 5. Date 6/22/88

then driven to the horse about 5 minutes away. We darted the horse (14 year old [♂] of 8/86 ^{male} collar # 404) with 1.5 cc of Succin. The horse went down in 2 or 3 minutes. We removed the collar, cleaned the wounds and sprayed the neck area with Furazolidone powder spray. We injected the horse with 50 cc of penicillin G. We photographed the horse (Test site guards did the actual photography) and the film will be developed by the Test Range and mailed to us.

The horse got up after we untied its legs and rejoined his band.

26. Signature [Signature] 27. Title Natural Resource Specialist 28. Office Toropah RA
Form 1510-57a (January 1986) (formerly MT 9100-1a) CONTRACTING OFFICER



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
NEVADA STATE OFFICE
850 HARVARD WAY
P.O. BOX 12000
RENO, NEVADA 89520-0006

IN REPLY REFER TO:

4700
(NV-931.3)

- 1. JRS
- 2. JRS
- 3. _____
- 4. _____
- 5. _____
- 6. _____

JUN 2 1988
What is this request?

MEMORANDUM

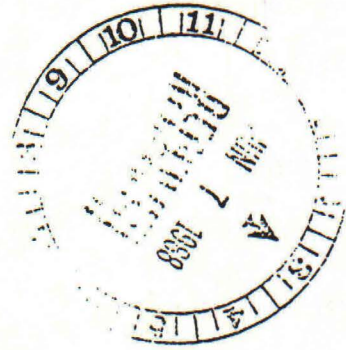
To: Director (250) Room 901, Premier Bldg.
From: State Director, Nevada
Subject: Wild Horse Fertility Control Research

I have recently been asked by various members of the public, whether the events which have taken place with regard to the University of Minnesota Research contract have had an impact on the validity of the research results. Particularly, the concerns expressed by the public relate to whether the loss of 48 research animals in the Clan Alpine Herd and the problems with tightness of identification collars in the other herds, have had any adverse effect upon the research.

In order to respond to such public inquiries and satisfy ourselves that the research effort is still viable, I would like to request that you obtain an answer to this question from the University of Minnesota or whomever is qualified to make such a determination. An answer would go a long way toward tempering the concerns of our wild horse publics.

Fred Wolf

ASSOCIATE



This modification is intended to clarify the roles of BLM and contractor personnel, to discuss BLM's anticipated level of involvement in monitoring the research, and to establish specifications related to fit of the collars.

The modification also provides additional funding for increased flight time, in an amount of \$164,134.00. This amount is obligated to cover costs associated with checking and evaluating horse collar fit as well as additional costs resulting from long distances between study areas and increased search time due to terrain.

MODIFICATION:

1. The following stipulations have been agreed upon by the University and the Bureau, and are hereby incorporated into this contract.
 - a. A fall flight shall be incorporated for each study area between October 15 and November 15 to allow additional monitoring of collar integrity and fit.
 - b. The University of Minnesota shall notify the BLM each year by March 1 (except for 1988, when notification will be by March 15) of the anticipated schedule for monitoring activities on each study area and the Lovelock corral facility. Copies will be provided to the appropriate Project Inspector, the Contracting Officer's Representative, and the Contracting Officer.
 - c. If changes in the schedule become necessary from the University's perspective, the appropriate project inspector shall be notified at least 2 weeks ahead of the change.
 - d. Between 4 and 7 days preceding each monitoring flight or other activity affecting study herds, the University shall contact the appropriate project inspector to coordinate details of the activity.
 - e. BLM shall have the opportunity to inspect all herd monitoring activity from a separate helicopter. Ship-to-ship communication capability is required.
 - f. If for safety reasons (winds, visibility, etc.) the BLM is unable to fly, the monitoring flight shall be rescheduled.
 - g. On all monitoring flights, collar security and fit shall be evaluated from the air for all locatable radio-equipped collars and those non-radio collars in the same bands with radio-equipped collars. If a significant (5%) fraction of the non-radio collars are found to present a fit problem (evidence of chafing, loss of hair, swelling, bleeding, drainage, etc) in the discretion of the PI, monitoring will be extended to all bands with collared animals.

h. Collars should fit as tight as possible while allowing a person to slip his hand under the collar at the side of the animal's neck to the midpoint of his palm, without depressing the animal's neck muscles.

i. Collars determined to be too tight shall be readjusted to conform to item h. above by the University during the course of the day's flight. If readjustment would cause excessive stress at the time of discovery (e.g., mare with foal) in the discretion of the PI, adjustment of the collar will be postponed to a later date.

j. If research activities, either on free-ranging animals or animals confined in the Lovelock corrals, cause undue stress to a particular animal, in the discretion of the PI, the activity shall be temporarily halted so that the PI can provide technical direction on the matter. If the matter cannot be resolved on the site, it shall be forwarded to the COR and Contracting Officer for resolution.

k. Within 2 weeks after each monitoring season the University shall provide the appropriate PI with a copy of a status report of animals sighted and any other notes made on animal location or condition.

2. The clarification is hereby made that necropsy is not authorized in field situations. Necropsies shall be performed at the Lovelock holding facility, or at another facility approved by the COR. The schedule and extent of necropsies shall be included in the University's annual schedule notification to the Bureau, described in paragraph 1.b. above.

3. The total estimated cost of the contract is hereby increased by \$164,134 from \$1,184,838 to \$1,348,972.

4. No other terms and conditions of the contract are changed.

END OF MODIFICATION



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

1510 (250)
4700

JUN 21 1988

Donald B. Siniff, Ph.D.
Department of Ecology
and Behavioral Biology
University of Minnesota
Minneapolis, Minnesota 55455

Dear Dr. Siniff:

We have recently been asked to respond to **two important concerns** in regard to the research on fertility control in wild horses being carried out under Bureau of Land Management (BLM) Contract Number USDI-AA852-CT5-29. We believe that, as the principal investigator for this project, you are the person best qualified to answer these concerns.

The first issue, raised by **Senator Harry Reid**, involves the **problems caused by the use of radio collars to monitor wild horses**. Senator Reid asked for a review of alternative monitoring methods. We would appreciate information on possible alternatives to radio collars, including advantages, disadvantages, and costs,

In Nevada, BLM officials report that they are **receiving inquiries from the public as to whether the problems with the collars and the deaths of 48 horses on the Clan Alpine study area have had any adverse effect on the research**. In essence, the question seems to be: **Is the research effort still viable?**

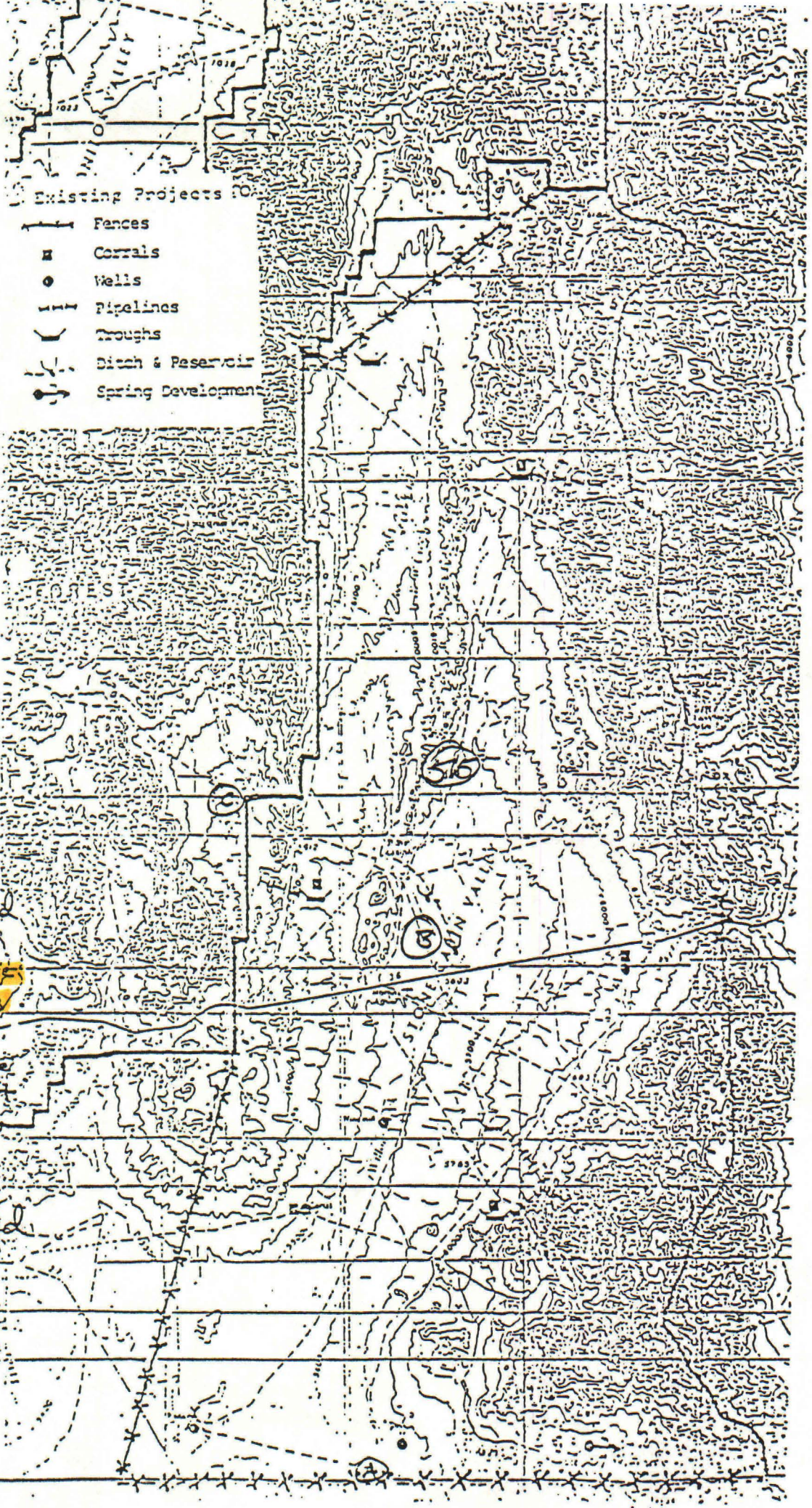
We would appreciate an early reply to these concerns.

Sincerely yours,

Linda I. DeRamus
Contracting Officer

Linda J. DeRamus
Contracting Officer

cc: State Director, Nevada (910) **POUCH-MAIL-1**
LLM (BC 852) MIB - Room 2444 - RF
LLM (BC 852) MIB - Room 2444 - File Copy
LLM (BC 250) PE - Room-909 - JWrona:gld:06/15/88:653-9215:D#1509W

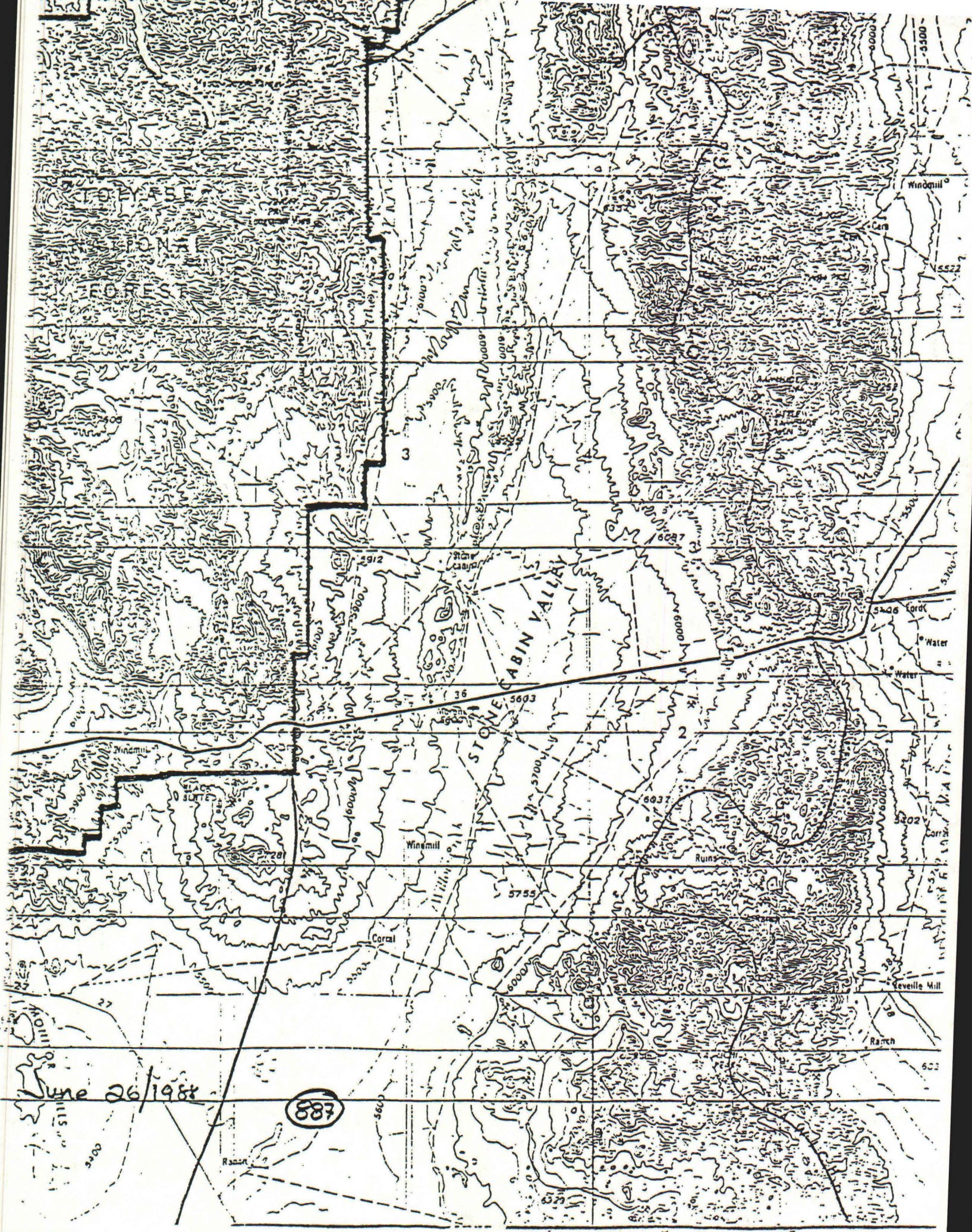


Existing Projects

- Fences
- Corrals
- Wells
- Pipelines
- U Troughs
- - - Ditch & Reservoir
- Spring Development

6/13-14/1988

- Ⓐ location of first mare diked
- Ⓑ location of mare diked 3 times
- Ⓒ location of mare diked that went down and got up again
- 515 mare recollared



June 26/1988

887

AUG 03 1988

Dr. Don Siniff
 University of Minnesota
 Department of Ecology and Behavioral Biology
 109 Biology Building
 318 Church Street S.E.
 Minneapolis, Minnesota 55455

Dear Dr. Siniff:

Les Sweeney and I have reviewed the contract diaries prepared by BLM's project inspectors during the monitoring season completed in June.

Overall, we believe the procedures established in the last contract modification have worked fairly well. We have also appreciated the University's increased sensitivity to the health and safety of the horses and to the public's interest in the wild horse program.

We do have a couple of specific situations which created problems, and which should not occur in the future. They are:

1. Several instances in which the BLM PI and Tom Eagle had a disagreement over the tightness of collars. The final decision on tightness is at the discretion of BLM's project inspector, and we will expect the University to abide by our decision in the event of a disagreement.
2. On one occasion, the BLM monitoring person was left to watch a darted horse while the University employee flew off to dart a second horse. BLM's function is solely to monitor contractor performance and to provide technical guidance as necessary. BLM personnel are not authorized to conduct any research or to be "helpers". I have reminded BLM employees of this. The University should do likewise.

At the outset, some of the coordination calls from the University to BLM did not occur - this problem was resolved after our conference call to you in early May. We also discussed with you at that time the limited availability of drugs, and the expense involved in making flights without adequate supplies.

I understand that Tom Eagle and Tom Pogacnik discussed the costs versus benefits of recollaring animals, and that Tom Eagle has tentatively decided that he will discontinue attempts to recollar. Please let me know if the University has in fact made this decision.

1000 1119
 WENDEY ZIVAS OFFICE
 2014 05 17 10:00 AM
 WENDEY ZIVAS OFFICE

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 2 P

We continue to be concerned about the potential of re-injuring these animals which have already been recollared especially since the next flights will not be until October-November. We will discuss this further with you separately.

If you have any suggestions for the improvement of the monitoring flights, please let me know.

Sincerely,

Linda L. DeRamus
Contracting Officer

Linda J. DeRamus
Contracting Officer

cc: Les Sweeney, NV(931)
Tom Pogacnik
Tim Rauwaast
Nancy Ryan
Tom Eagle
ASRF ASPF 852RF

852:LJDeramus:cb:8/3/88:PMNTS721:mods disk

Table 1. Results of aerial surveys in 1988. % foals lists number of foals per 100 adults sighted. ID indicates number of foals assigned to mares in collared bands, remaining foals were either not assigned to mares or were running with bands containing no collared animals.

Date	Adults	Foals	% foals	Collars	ID
Beaty Butte					
880509	239	29	12.1	24	5
880520	216	29	13.4	22	4
880620	219	42	19.2	22	4
Flanigan					
880421	246	15	6.1	24	2
880505	280	29	10.4	21	2
880519	277	28	10.1	16	3
880616	250	26	10.4	14	1
Wassuks					
880420	129	13	10.1	39	11
880504	109	11	10.1	36	8
880518	146	19	13.0	42	13
880615	79	11	13.9	24	7
Stone Cabin					
880418	471	37	7.8	116	20
880502	566	49	8.6	159	22
880523	605	75	12.4	149	33
880613	530	47	8.9	136	21
Clan Alpines					
880423	873	139	15.9	261	50
880507	784	128	16.3	220	63
880521	724	112	15.4	205	42
880617	702	96	13.6	191	31

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2. Contract No. AD-852-CTS-29 3. Report No. 13
4. Contract Name Wild Horse Fertility Control

CONTRACT DIARY

5. Contractor <u>Univ. of Minnesota</u>				6. Contractor Representative on Site <u>Tom Eagle</u>			
7. Government Officials on Site <u>Tom Penicost</u>				8. Government provided services adequate and timely? <input type="checkbox"/> Yes <input type="checkbox"/> No—Explain in narrative			
9. Date <u>5/4/88</u>	10. Day of Week <u>Wed</u>	11. Time Arrived <u>12:30</u>	12. Time Departed <u>4:15</u>	13. Weather <u>Windy - 1-2 in afternoon</u>			
14. Temperature ° F Min. Max.		15. Ground Condition/Ref. Location <u>11/11</u>		16. Contract Time	17. Days Used	18. Completion Date	
19. Time Used (%)		20. Work Completed (%)		21. Work on Schedule <input type="checkbox"/> Yes <input type="checkbox"/> No		22. Contractor's Work (X appropriate box) <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable—Explain in narrative	

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION
<u>N/A</u>					

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
<u>N/A</u>					

25. Narrative Report

Flew the area in the Helicopters. I observed no evidence of the bands running off without seals. However, after the first sealing, Tom Eagle started radio tracking. As he was tracking, I noticed from the observation helicopter, a seal by itself. There were no other animals in the immediate area when I sighted this seal. I had not observed the separation of this seal from a band, therefore I believe it happened when the Univ. of Minne helicopter was not working that

26. Signature	27. Title	28. Office
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CONTRACT DIARY CONTINUATION SHEET

2. Contract No. PA 30-215-01

3. Report No. 1

4. Contract Name W.H. Feltner

25. Narrative Report (continued)

5. Date 1/11

particular back, but with a few birds
over range, the band to see it
though they weren't being chased. It
possibly that the "not" of a
"happy" - a bird by a bird
with a narrative on it.

The birds were seen to be in
range that the birds were
rad. The birds were seen to be
the "particular" of the birds
to be the birds.

26. Signature [Signature]

27. Title W.H. Feltner, PI

28. Office Carson City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY CONTINUATION SHEET

1. Page 2 of 2

2. Contract No. AA-352-MS-29

3. Report No. 101

4. Contract Name

W.H. Fertility, Montana

25. Narrative Report (continued)

5. Date

5-5-52

Since they were only 1/7 drawn where we had
lost when all three loads in the bank
felt that by taking the man was in
hard labor. In the end we

No other problems occurred
and some of some (7) were
over which will be carried on
slight

26. Signature

[Handwritten Signature]

27. Title

W.H. Fertility PT

28. Office

Harlem, Mont.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No: AA-852-175-29 3. Report No. 15
4. Contract Name: Wild Fire Facility Control

5. Contractor: State of Maine 6. Contractor Representative on Site: Tom Eagle
7. Government Officials on Site: Tom Proulx 8. Government provided services adequate and timely?
 Yes No—Explain in narrative
9. Date: 5-8-85 10. Day of Week: Sunday 11. Time Arrived: 12. Time Departed: 13. Weather: Clear
14. Temperature ° F: Min. Max. 15. Ground Condition/Ref. Location: ////// 16. Contract Time: 17. Days Used: 18. Completion Date:
19. Time Used (%): 20. Work Completed (%): ////// 21. Work on Schedule: Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>			

25. Narrative Report
Flow Plan All piece - yesterday 5-7-85 and today
Encountered no problems with cutting logs. The
University is circling and turning back land to
re-group and logging holes.

26. Signature: [Signature] 27. Title: WFAB Spec. P.T. 28. Office: Carroll City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

Z. Contract No. AA-852-CT5-17 Report No. 18

4. Contract Name Wild Horse Fertility Control

5. Contractor University of Minnesota
6. Contractor Representative on Site Tom Toole

7. Government Officials on Site Tim Rauscher
8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date 5-21-88
10. Day of Week Sat
11. Time Arrived 0715
12. Time Departed 1715
13. Weather Clear

14. Temperature ° F
Min. Max. 1 1
15. Ground Condition/ Ref. Location 1 1
16. Contract Time
17. Days Used
18. Completion Date

19. Time Used (%)
20. Work Completed (%)
21. Work on Schedule
 Yes No
22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION
N/A					

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
N/A		<input checked="" type="checkbox"/>			

25. Narrative Report

Flew over Alpinas - no problems encountered with foals. One stud was immobilized with collar over ears. Collar was removed and minor wounds treated with antiseptic powder.

26. Signature [Signature]
27. Title W/H + B Spec PT
28. Office Carson City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2. Contract No. **HA-852-CT5-29** 3. Report No. **19**
4. Contract Name **Wild Horse Fertility Control**

CONTRACT DIARY

5. Contractor **Univ. of Minn.** 6. Contractor Representative on Site **Tom Eagle**
7. Government Officials on Site **Tim Rawnsap** 8. Government provided services adequate and timely?
 Yes No—Explain in narrative:
9. Date **5/2/88** 10. Day of Week **Sunday** 11. Time Arrived **0715** 12. Time Departed **1530** 13. Weather
14. Temperature °F Min. **N/A** Max. **N/A** 15. Ground Condition/Ref. Location 16. Contract Time 17. Days Used 18. Completion Date
19. Time Used (%) **N/A** 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION
N/A					

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	* (check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
N/A				

25. Narrative Report
Radio tracked those missed yesterday. No problems with tagging foals with the exception of encountering a band with 3 adults and 3 foals—one of the adults was a stud. Eagle located two collars that hadn't moved the last few flights. They were close together one was hanging in a tree with the neck bones still in it and the other bones close by. They were in a very inaccessible area—assume may have been victims of hunting season.

26. Signature **Tom Rawnsap** 27. Title **Wild Horse Spec. PI** 28. Office **Carson City**

1575 Akard Dr.
Reno, NV 89503

16 March 1988

Dick Stark
BLM(250)
18th and C St. NW
Washington, D.C. 20240

Dear Dick:

Following receipt of your memorandum, 1510 (250), in which you summarized our meeting of 24 February 1988, I see that we will have to modify our schedule for the first set of flights beginning 18 April 1988. In order to immobilize and examine the mares from which we removed collars in January 1988 in Stone Cabin Valley (see item 2 of your memorandum), we will need to work two days in that study area.

I telephoned Tom Pogacnik of the Tonopah office and suggested that I conduct my regular search and count on 18 April. During that work I will note the location and structure of bands containing mares from which we removed collars in January. On 19 April we could go back out to the study area and immobilize previously located mares. Thus, it will be necessary to have the veterinarian present only on 19 April. Tom concurred with that suggestion.

That change of plans will necessitate a modification of the remainder of that set of flights. A complete schedule is as follows:

18,19 April	Stone Cabin Valley
20 April	Wassuk Mountains
21,22 April	Clan Alpine Mountains
23 April	Flanigan
24 April	Beaty Butte

Our flights in the Clan Alpines 7-9 March 1988 suggests that 2 days may be insufficient time to thoroughly search that study area. Due to the extra effort in Stone Cabin Valley on the 18 April set of flights, I plan to restrict my search to 2 days in the Clan Alpines; however, future flights may have to be extended. Also scheduling around military air operations may present future problems in that area. These scheduling problems will be handled as they arise.

Item 4b of your memorandum may present a slight conflict for our study. As you are aware, personnel from the Battle Mountain District, Tonopah office, attached radio collars to several horses in Reveille Valley during summer 1986. I assume these

*2 pages
T.J.*

*problem
→ next pg
Robb's.*

horses are still collared. Because some of the collared horses from Stone Cabin Valley have moved over to the Hot Creek area, it is possible that some of the horses BLM collared in Reveille Valley have moved north into Hot Creek. It would be unnecessary, and even undesirable, to have these horses released in Stone Cabin Valley.

Yesterday, I telephoned Tom Pogacnik and Rodger Bryan, Horse Specialist in the Battle Mountain District, to see if I could learn the numbers and frequencies on the collars BLM had attached. Both of them were not in their present positions in summer 1986 and were not familiar with the operation; in fact, Rodger had not been informed the collars had been attached until I asked him for the information. Neither could readily locate the information I had requested.

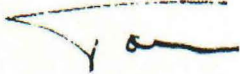
I contacted Advanced Telemetry Systems, Bethel, Minnesota, from whom the collars were purchased. They informed me that the collars were not numbered and gave me a list of frequencies, which are listed below (all are in MHZ):

160.012	160.078
160.022	160.086
160.036	160.096
160.044	160.106
160.066	160.116


Considering recently discovered problems resulting from tight collars in our study, it would be to BLM's interest to determine the location and status of the horses wearing these collars. I would also be interested in the locations of these horses. Indeed, if these horses are not going to be monitored regularly, the collars should be removed.

I have years of experience locating radio signals, particularly from the air, and would be happy to assist BLM in locating these horses should you so desire. My receivers are restricted to 164 and 165 MHZ; thus BLM receivers would be needed to locate these horses. Should you want to remove the collars by darting the horses, Ed Plotka has the necessary DEA documentation to purchase the drugs we use, and we would assist in any way we could.

Sincerely,


Thomas C. Eagle

cc: Linda DeRamus
Les Sweeney
Tom Pogacnik
Tim Reuwsaat
Nancy Ryan
Ed Plotka
Don Siniff

On 3/23/88 I learned from Milt Frei that none of the above collars had ever been mounted on animals. I notified Tom Eagle of this on 3/23/88. 

15 March 1988

1575 Akard Dr.
Reno, NV 89503

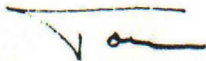
Dick Stark
BLM (250)
18th and C St. NW
Washington, D.C. 20240

Dear Dick:

Attached is a summary of the flights we made 7-10 Mar 88 to examine and adjust mis-fitting collars as identified in the Carson City District Manager's memorandum of 28 January 1988. Because we exhausted our supply of the immobilizing agents before the job was completed, this report covers only the Clan Alpine Mountains and a portion of the Flanigan study area. We have purchased additional immobilizing agents and will complete the effort 28 and 29 March 1988.

As you are aware, we were not authorized to conduct this work until our meeting in Washington on 24 February. Thus, the costs for this operation were not included in the budget statement we prepared for that meeting.

Sincerely,



Thomas C. Eagle

cc: Tim Reuwsaat
Linda DeRamus
Ed Plotka
Don Siniff
John Tester

STATUS OF IMMOBILIZED HORSES

We flew over the Clan Alpine study area on 7-9 March 1988 where we counted horses and examined collars. We counted a total of 864 adults and 17 foals. Among the adults were 179 collared horses (98 with radio collars). This number is of 272 possible sightings (131 radio collars). We identified three horses with collars between the eyes and ears (Category 5 in the Carson City District Manager's report of 28 January 1988). We identified two additional horses with collars that appeared to be causing injury to the necks of the horses to which they were attached (Category 4).

In October 1987 located approximately 5 collared horses in the Augusta Mountain HMA. When we started to search that area for possible problem collars on 9 March 1988, the Project Inspector instructed us to stay out of that area because our monitoring efforts might inhibit the round-up scheduled for the Augusta Mountain HMA in summer 1988.

The following is the status of the horses we immobilized:

644 -- Adult male, category 5 collar. We saw this horse's band high on a ridge, and it contained a foal. I decided the best alternative was to dart the stallion while the band was still on the ridge rather than moving them to lower ground and possibly causing the foal to be abandoned. While under influence of the drug, but before complete immobilization, the horse fell over a steep drop and died. The collar had caused superficial injury to the forehead and at the jawline.

622 -- Adult male, category 5 collar. Adjusted the collar, and applied antiseptic to the slight injury at the jawline. Released in good condition.

975 -- Adult male, category 5 collar. Adjusted collar, no injury present. Released in good condition.

475 -- Adult male, possible category 4 collar. Adjusted collar, no injury present. Released in good condition.

370 -- Adult female, possible category 4 collar (turned upside down). No injury, turned collar back over, did not change

tightness of collar. Released in good condition.

We moved to the Flanigan study area on 10 March 1988 and counted a total of 129 horses, all of which were adults. Because we ran out of drug in this area, the count is incomplete. We saw a total of 42 collars, 29 of which had no numbers or the numbers were unreadable. We immobilized 6 horses with category 5 collars and examined and adjusted or removed the collars.

Following is the status of these 6 horses:

Unident. male (Bay, no numbers) -- Removed collar, no injury. Released in good condition.

10 -- Adult female. Adjusted collar, no injury. Released in good condition.

Unident. female (Gulla, no numbers) -- Removed collar, no injury. Released in good condition.

Unident. male (Graying dun, no numbers) -- Removed collar, treated slight injury with antiseptic. Released in good condition.

Unident. male (Sorrel, no numbers) -- Removed collar, no injury. Released in good condition.

66 -- Adult male. (Collar read _6, later determined to be 66, the 6 was coming off of the collar) Removed collar, no injury. Lethargic after reversal of drug.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. AA 852-CT5-29 3. Report No. 8

4. Contract Name Fertility Control

5. Contractor University of Minnesota 6. Contractor Representative on Site Tom Eagle

7. Government Officials on Site Tom Kewsoat 8. Government provided services adequate and timely? Yes No—Explain in narrative

9. Date 3-31-88 10. Day of Week Thurs 11. Time Arrived 12. Time Departed 13. Weather

14. Temperature ° F Min. Max. 15. Ground Condition/Ref. Location 16. Contract Time 17. Days Used 18. Completion Date

19. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box) Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION
N/A					

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	DESCRIPTION	QUANTITY	WORK LOCATION
(check if materials (only) delivered)				
N/A				

25. Narrative Report
Called Tom Eagle. He has called Ed Plotka. The drugs are in and Tom will have them for next flights.

26. Signature [Signature] 27. Title [Title] 28. Office [Office]

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. AA852-CT5-29

3. Report No. 7

4. Contract Name: Fertility Control

5. Contractor: University of Minnesota

6. Contractor Representative on Site: Tom Eagle

7. Government Officials on Site: Tim Krawnsat, Mike Phillips

8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date: 3/30/88 10. Day of Week: Wed 11. Time Arrived: 8:15 12. Time Departed: 2:30 13. Weather: cool, some wind

14. Temperature ° F: Min. Max. 15. Ground Condition/Ref. Location: N/A 16. Contract Time: 17. Days Used: 18. Completion Date:

19. Time Used (%): 20. Work Completed (%): N/A 21. Work on Schedule: Yes No 22. Contractor's Work (X appropriate box): Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	EQUIPMENT TYPE	HRS.	WORK LOCATION
N/A			

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	DESCRIPTION	QUANTITY	WORK LOCATION
N/A			

25. Narrative Report

Flew + counted Flanigan herd. Located 5 animals with collars over ears. Dusted 2, ran out of drug. Will plan to correct remaining 4 at next scheduled flight.

26. Signature: Tim Krawnsat

27. Title: WHTB Spec. (P.I.)

28. Office: Carcan City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. A4852-CTS-29 3. Report No. 5 TR
4. Contract Name: Fertility Control

5. Contractor: University of Minnesota 6. Contractor Representative on Site: Tom Eagle

7. Government Officials on Site: Tim Kouisoat 8. Government provided services adequate and timely?
 Yes No—Explain in narrative

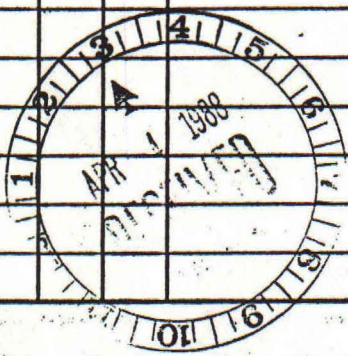
9. Date: 3/29/88 10. Day of Week: Tues. 11. Time Arrived: 8:30 12. Time Departed: 5:00 13. Weather: cool, partly cloudy some wind

14. Temperature ° F: Min. N/A Max. N/A 15. Ground Condition/Ref. Location: N/A 16. Contract Time: N/A 17. Days Used: N/A 18. Completion Date: N/A

19. Time Used (%): N/A 20. Work Completed (%): N/A 21. Work on Schedule: Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	EQUIPMENT TYPE	HRS.	WORK LOCATION
<u>N/A</u>			<u>1.</u>
			<u>2.</u>
			<u>3.</u>
			<u>4.</u>
			<u>5.</u>
			<u>6.</u>



24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	DESCRIPTION	QUANTITY	WORK LOCATION
<u>N/A</u>			

25. Narrative Report

Met Eagle in Wossuk Mtns. Flew over area. Located 5 TR animals with collars over ears. Ducted 3 head collars. Ducted minor injuries on two. third has injury. Ran out of daylight. Will plan to duct the other two + #580 on next flight.

26. Signature: Tim Kouisoat 27. Title: WAB Spec C.P.T. 28. Office: Carroll City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. AA852-CT5-29 3. Report No. 5
4. Contract Name Fertility Control

5. Contractor University of Minnesota 6. Contractor Representative on Site Tom Eagle

7. Government Officials on Site: _____ 8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date: _____ 10. Day of Week: _____ 11. Time Arrived: _____ 12. Time Departed: _____ 13. Weather: _____

14. Temperature ° F: _____ 15. Ground/Condition/Ref. Location: _____ 16. Contract Time: _____ 17. Days Used: _____ 18. Completion Date: _____

19. Time Used (%): _____ 20. Work Completed (%): _____ 21. Work on Schedule: Yes No
22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report
 I received call from Eagle. He told me that Dr. Small in Minnesota had received call from the Nevada State Office asking about not having enough drugs available. He is to get 3 bottles from Platka soon (middle next wk). I discussed this with Area Managers and District Manager. They felt even though injury had not yet been a big problem, due to the negative press we are receiving, we should make every effort to fly as soon as possible. I called Eagle back, explained situation. He was going to line up helicopter.

26. Signature _____ 27. Title _____ 28. Office _____

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. /

3. Report No. 5

4. Contract Name

5. Contractor

6. Contractor Representative on Site

7. Government Officials on Site

8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date

10. Day of Week

11. Time Arrived

12. Time Departed

13. Weather

14. Temperature ° F

15. Ground Condition/ Ref. Location

16. Contract Time

17. Days Used

18. Completion Date

Min. Max.

19. Time Used (%)

20. Work Completed (%)

21. Work on Schedule
 Yes No

22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)		DESCRIPTION	QUANTITY	WORK LOCATION
		<input type="checkbox"/>	<input type="checkbox"/>			

25. Narrative Report

*as quickly as he could. Eagle called back said he had
fixed up helicopter for Mar 28 + 29 to fly Wood +
remainder of Flouigan.*

26. Signature

Tom K...

27. Title

WH + B Spec (P.T.)

28. Office

Carson City D.D.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY

2. Contract No. AA-852-CT5-29 3. Report No. 4
4. Contract Name: Fertility Control

5. Contractor: University of Minnesota 6. Contractor Representative on Site: Tom Eagle

7. Government Officials on Site: Tom Kowca, Mike Phillips 8. Government provided services adequate and timely? Yes No—Explain in narrative

9. Date: 03/10/88 10. Day of Week: Thursday 11. Time Arrived: 0700 12. Time Departed: 1200 13. Weather: Cool clear light breeze

14. Temperature ° F: Min. Max. 15. Ground Condition/Ref. Location: 16. Contract Time: 17. Days Used: 18. Completion Date:

19. Time Used (%): 20. Work Completed (%): 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box) Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

(check if materials (only) delivered)

PAY ITEM	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

Myself, Phillips and Dr. Peck met Eagle at Flanigan Hand Mgmt Area. Eagle located six animals and immobilized them. Five of those animals did not have any injury caused by the collars over the ears, however one did. The remaining animal had some injury which was treated. Five of the collars had lost the numbers and therefore the collars were removed. The remaining collar was adjusted. Eagle informed us that he was out of immobilizing agents. I questioned him why he hadn't anticipated

26. Signature: 27. Title: 28. Office:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY

R. Page 2 of 2
3. Report No. 90004

2. Contract No.

3. Report No.

4. Contract Name

5. Contractor

6. Contractor Representative on Site

7. Government Officials on Site

8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date

10. Day of Week

11. Time Arrived

12. Time Departed

13. Weather

14. Temperature ° F
Min. Max.

15. Ground Condition/ Ref. Location

16. Contract Time

17. Days Used

18. Completion Date

19. Time Used (%)

20. Work Completed (%)

21. Work on Schedule
 Yes No

22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

needing additional drug. He recommended that he was instructed to perform the checks on the last week of February at the W.O. meeting. We tentatively agreed that since the majority of the animals with collars over the ears had little or no injury we would complete the monitoring during the April flights. We departed at ~ 1100 hrs.

26. Signature

27. Title

28. Office

Jim Rimmer WHP Spec. (PI) (Hanson City, CO)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY

2. Contract No. H-852-CTS-27

3. Report No. 3

4. Contract Name: Fertility Control

5. Contractor: University of Minnesota

6. Contractor Representative on Site: Tom Eagle

7. Government Officials on Site: Tim K... Mile Phillips

8. Government provided services adequate and timely?
 Yes No—Explain in narrative

9. Date: 2/9/88

10. Day of Week: Wednesday

11. Time Arrived: 0630

12. Time Departed: 1100

13. Weather: Windy Cool

14. Temperature: ° F
Min. Max.

15. Ground Condition/Ref. Location:

16. Contract Time

17. Days Used:

18. Completion Date

19. Time Used (%)

20. Work Completed (%)

21. Work on Schedule
 Yes No

22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

After flying to the Wander Area two animals were immobilized by the Net-Minne. Both animals were upside down and were supported by Tom Eagle to possibly causing injury. Both animals did not have injury. Adjusted one collar + released Pegas search for radio collared animals not previously sighted. Winds became too strong. Agreed to locate the unsighted radio collared animals during the April flight.

26. Signature: Tom K...

27. Title: W&H Spec. (P.I.)

28. Office: Carson City, NV

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No. AA85Z-CT5-29 3. Report No. 2
4. Contract Name Fer Litter Control

5. Contractor University of Minnesota 6. Contractor Representative on Site Tom Frank

7. Government Officials on Site Tim Rowland, Mike Phillips
8. Government provided services adequate and timely? Yes No—Explain in narrative

9. Date 3/2/88 10. Day of Week Tuesday 11. Time Arrived 0700 12. Time Departed 1700 13. Weather Cloudy

14. Temperature ° F

Min.	Max.

 15. Ground Condition/Ref. Location 16. Contract Time 17. Days Used 18. Completion Date

19. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box) Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	*	DESCRIPTION	QUANTITY	WORK LOCATION
	<input checked="" type="checkbox"/>	(check if materials (only) delivered)		

25. Narrative Report
 Followed U of Minn helicopter. The Veterinarian Jerry Peck accompanied us. Completed monitoring of animals in early afternoon. We identified 3 horses which had the collars over the eyes. Eagle immobilized these three animals. The first animal collapsed from the drug on a very steep slope and died. Mike Phillips, the Area Manager, strongly suggested that more care be taken to ensure the animals be tranquilized in an area where injury to the animal be kept to a minimum. The second animal

26. Signature _____ 27. Title _____ 28. Office _____

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONTRACT DIARY

2. Contract No.

3. Report No. 2

4. Contract Name

5. Contractor

6. Contractor Representative on Site

7. Government Officials on Site

8. Government provided services adequate and timely?

Yes No—Explain in narrative

9. Date

10. Day of Week

11. Time Arrived

12. Time Departed

13. Weather

14. Temperature ° F

15. Ground Condition/ Ref. Location

16. Contract Time

17. Days Used

18. Completion Date

Min. Max.

19. Time Used (%)

20. Work Completed (%)

21. Work on Schedule

Yes No

22. Contractor's Work (X appropriate box)

Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION

25. Narrative Report

had sustained injury from the collar. Collar was removed and animal treated prior to being released. The third animal was immobilized collar adjusted and released. There was no injury from the collar. Returned to fallow.

26. Signature

[Signature]

27. Title

W. H. B. Speer (P. V.)

28. Office

Carson City, ND

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2. Contract No. AA852-CFS-29 3. Report No. 1

CONTRACT DIARY

4. Contract Name: Fertility Control

5. Contractor: University of Minnesota

6. Contractor Representative on Site: Tom Eagle

7. Government Officials on Site: Tim Kennicutt, Mike Phillips

8. Government provided services adequate and timely? Yes No—Explain in narrative

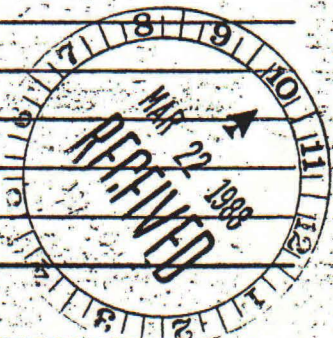
9. Date: 3/17/88 10. Day of Week: Monday 11. Time Arrived: 8:00 am 12. Time Departed: 5:30 pm 13. Weather: Clear + Cool

14. Temperature °F: Min. N/A, Max. N/A 15. Ground Condition/Ref. Location: N/A 16. Contract Time: N/A 17. Days Used: N/A 18. Completion Date: N/A

19. Time Used (%): N/A 20. Work Completed (%): N/A 21. Work on Schedule: Yes No N/A 22. Contractor's Work (X appropriate box) Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION *	EQUIPMENT TYPE *	HRS.	WORK LOCATION
N/A			



24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM *	DESCRIPTION (check if materials (only) delivered)	QUANTITY	WORK LOCATION
N/A			

25. Narrative Report: Arrived at Fallon Airport at ~ 8:00 am - contractor (Tom Eagle) arrived at 8:30. In addition to me, Mike Phillips Area Manager and Barry Kirk Veterinarian (Stow) in the BLM helicopter. We followed Eagle in his helicopter as he checked collars. Occasionally, we (BLM) would check the collars on a band at arrival. Eagle had just checked. Returned to Fallon.

26. Signature: Linda B. Kennicutt 27. Title: WMA B. Espo (P.T.) 28. Office: Carson City, O.O.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Contract No. **AA-852-615-4** Report No. **24**

CONTRACT DIARY

Contract Name: **Wild Horse Fertility Control**

5a Contractor: **U of Minn** 6 Contractor Representative on Site: **Tom Eagle**

7 Government Officials on Site: **Tim Reussert & John Artell** 8 Government provided services adequate and timely?
 Yes No Explain in narrative

9 Date: **20 Oct 88** 10 Day of Week: **Wed** 11 Time Arrived: **0900** 12 Time Departed: **1600** 13 Weather: **clear**

14 Temperature: **70** 15 Ground Condition/Ref. Location: 16 Contract Time: 17 Days Used: 18 Completion Date:

19 Time Used (%): 20 Work Completed (%): 21 Work on Schedule Yes No 22 Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23 Work Force and Equipment (* G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	EQUIPMENT TYPE	HRS	WORK LOCATION
N/A			

24 Estimate of Pay Work Accomplished (* G-Govt; C-Cont; S-Subcont)

PAY ITEM	DESCRIPTION	QUANTITY	WORK LOCATION
N/A			

25 Narrative Report
Wassuk - Removed 1 collar from a mare & left it off, no problems
Located 2 dead collared horses 1 ♀ - 5 yr old & 1 ♂ - 20 yr old, could not determine cause of death.
 Saw 142 horses in herd area.
 We double checked ~ 20% of the herds with collared horses to verify that Mr. Eagle was correctly identifying the locations of collared horses. We only double checked herds with collared horses, all other herds were not checked.
(called over page)

26 Signature: **John Artell** 27 Title: **Wild Horse Mgt. P.J.** 28 Office: **Garson City**

2. Contract No. **AA-852-LTS-29** 3. Report No. **25**

CONTRACT DIARY

4. Contract Name **Wild Horse Fertility Control**

5. Contractor **U. of Minn.** 6. Contractor Representative on Site **Tom Eagle**

7. Government Officials on Site **Tim Beasant & John Astell** 8. Government provided services adequate and timely?
 Yes No—Explain in narrative:

9. Date: **13 Oct 89** 10. Day of Week: **Thurs** 11. Time Arrived: **0900** 12. Time Departed: **1330** 13. Weather: **clear with some wind**

14. Temperature °F: Min. Max. 15. Ground Condition/Ref. Location 16. Contract Time 17. Days Used 18. Completion Date

19. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable—Explain in narrative

23. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	*	EQUIPMENT TYPE	*	HRS.	WORK LOCATION
N/A					

24. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	*	(check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
N/A					

25. Narrative Report

Flanagan - Removal collars from 2 horses & covered most of the herd area before we crashed. Both horses that collars were removed from were ok, collars were over their ears.

counted 266 horses in herd area, 108 out side herd area & 22 horses, 1 mule, 1B horse w/1 foot sore had been, did not cover all of foot sore.

We double checked ~20% of the herds with collar horses to verify that Mr. Eagle was correctly reporting the condition of collar horses we only double checked those who were able to stay with the herd.

26. Signature **John Beasant** 27. Title **Wild Horse Specialist - P.O.** 28. Office **Casper City**

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONTRACT DIARY

2) Contract No. AA-352-015-29 Report No. 26

4) Contract Name: Wild Horse Fertility Control

Contractor: Vot Mann

6) Contractor Representative on Site: Tom Eagle

Government Officials on Site: None

8) Government provided services adequate and timely?
 Yes No—Explain in narrative:

Date: 10 Oct 88 10. Day of Week: FRI 11. Time Arrived: 12. Time Departed: 13. Weather:

Temperature ° F: 15. Ground Condition/Ref. Location: 16. Contract Time: 17. Days Used: 18. Completion Date:

Time Used (%): 20. Work Completed (%): 21. Work on Schedule: Yes No 22. Contractor's Work (X appropriate box): Acceptable Unacceptable—Explain in narrative

Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont)

WORKER & CLASSIFICATION	* EQUIPMENT TYPE	* HRS.	WORK LOCATION
N/A			



4. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont)

PAY ITEM	* (check if materials (only) delivered)	DESCRIPTION	QUANTITY	WORK LOCATION
N/A	<input checked="" type="checkbox"/>			

5. Narrative Report

Flanigan - After the observation helicopter, crashed Les Sweeney (car) instructed Tom Eagle to finish the rest of Flanigan - 26 worms.
~~on Tuesday 10 Oct 88~~ Tom Eagle did not report any problems.
 On Tuesday 18 Oct 88. I saw a leppie by Juniper Basin probably caused by our flights, no other bushes were seen in the area.

26) Signature: [Signature]

27) Title: Wildlife Spec. P. [Signature]

28) Office: Carson City

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2. Contract No. **11-852** 3. Report No. **20**
4. Contract Name **Wild Horse Fertility Control**

CONTRACT DIARY

5. Contractor **V of M Inc** 6. Contractor Representative on Site

7. Government Officials on Site **John Axtell** 8. Government provided services adequate and timely?
 Yes No - Explain in narrative

9. Date **24 Oct 88** 10. Day of Week **Mon** 11. Time Arrived **0900** 12. Time Departed **1600** 13. Weather **clear**

4. Temperature ° F Min. Max. 15. Ground Condition/ Ref. Location 16. Contract Time 17. Days Used 18. Completion Date

9. Time Used (%) 20. Work Completed (%) 21. Work on Schedule Yes No 22. Contractor's Work (X appropriate box)
 Acceptable Unacceptable - Explain in narrative

3. Work Force and Equipment (*: G-Govt; C-Cont; S-Subcont.)

WORKER & CLASSIFICATION	EQUIPMENT TYPE	HRS.	WORK LOCATION
N/A			

4. Estimate of Pay Work Accomplished (*: G-Govt; C-Cont; S-Subcont.)

PAY ITEM	DESCRIPTION	QUANTITY	WORK LOCATION
N/A			

5. Narrative Report

Alan Axtell observed 68 horses double checked a 20% of the herd with collars, saw no problems. Did not double check herd with small colts. Six horses 4 adults, 2 colts were observed falling, however they all were backup & running without any apparent injury. The 2 colts ran in front of their heels were knocked down although they did not appear injured. In several cases herd were last observed approximately 50 yards in front of collars, however the colts were still running in the same direction as the rest of the herd.

26. Signature **John Axtell** 27. Title **Wild Horse Specialist** 28. Office **Conservation**