U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129

ENVIRONMENTAL ASSESSMENT

EA NUMBER: DOI-BLM-CO-N010-2009-0042-EA

CASEFILE/ALLOTMENT NUMBER: 0501066/04219, 04225, 04307, 04438, 04521

PROJECT NAME: Renewal of the grazing permit on the Sand Wash #04219, Nipple Peak #04225, Cross Mountain #04307, West Spring Creek #04438, and Greasewood #04521 Allotments.

LEGAL DESCRIPTION: See allotment maps, Attachments 1a-c

Sand Wash Allotment #04219	T10N R100W, por. Secs. 13, 24-26, 34-36 T10N R99W, por. Secs. 3, 7-10, 14-23, 26-36 T9N R100W, por. Secs. 1, 2, 11, 12 T9N R99W, por. Secs. 1-18, 20-28, 34-36 T9N R98W, por. Secs. 7, 8, 17-22, 26-35 T8N R99W, por. Secs. 1-3, 10-15, 23-25 T8N R98W, por. Secs. 2-11, 14-36 T7N R98W, por. Secs. 1-4, 10 T7N R97W, por. Secs. 5-10, 16-18 69,457 acres BLM 3,012 acres State Land Board 3,722 acres private 76,191 acres total
Nipple Peak Allotment #04225	T11N R96W, por. Sec. 31 T10N R96W, por. Secs. 7, 18-23, 27 4,031 acres BLM 11,163 acres State Land Board 372 acres private 15,566 acres total

Cross Mountain Allotment #04307	T8N R98W, por. Secs. 32, 33 T7N R99W, por. Secs. 13, 24-26, 35, 36 T7N R98W, por. Secs. 1-5, 8-36 T7N R97W, por. Secs. 7, 17, 18, 30 16,006 acres BLM 1,275 acres State Land Board 4,560 acres private 21,841 acres total
West Spring Creek Allotment #04438	T7N R96W, por. Secs. 1, 2, 10-12, 14 T7N R95W, por. Secs. 3, 5-15 T7N R94W, por. Sec. 7 T6N R94W, por. Secs. 17-20 7,680 acres BLM 5,044 acres State Land Board 1,980 acres private 14,704 acres total
Greasewood Allotment #04521	T10N R96W, por. Secs. 1, 2, 11-14, 23, 25, 26, 36 T10N R95W, por. Secs. 1-7, 10-16, 18, 19, 22-27, 30, 35, 36 T10N R94W, por. Secs. 7, 16-21, 28-33 T9N R95W, por. Secs. 2, 12 T9N R94W, por. Secs. 5-7, 18, 26, 35, 36 T9N R93W, por. Secs. 31, 32 15,041 acres BLM 5,881 acres BLM LU 601 acres CO Division of Wildlife 3,675 acres State Land Board 21,130 acres private 46,328 acres total

APPLICANT: Permittee

PLAN CONFORMANCE REVIEW: The Proposed Action and Alternatives are subject to the following plan:

Name of Plan: Little Snake Resource Management Plan and Record of Decision

Date Approved: April 26, 1989

Results: The No Action Alternative and Preferred Alternative are consistent with the Little Snake Resource Management Plan, Record of Decision, Livestock Grazing Management objective to improve range conditions for both wildlife and livestock through proper utilization of key forage plants and adjusting livestock stocking rates as a result of vegetation studies.

A portion of the Proposed Action is located within Management Unit 1, Eastern Yampa River. The Proposed Action is compatible with the management objective for this unit, which is to provide for the development of oil, gas, and coal resources. The Proposed Action would not conflict with the development of these resources.

A portion of the Proposed Action is located within Management Unit 2, Northern Central. The Proposed Action is compatible with the management objective for this unit, which is to provide for the development of oil and gas resources. The Proposed Action would not conflict with the development of these resources.

A portion of the Proposed Action is located within Management Unit 3, Little Snake River. The Proposed Action is compatible with the management objective for this unit, which is to provide for soil and watershed values, increase forage production, and enhance livestock grazing. The Proposed Action is in harmony with the development and maintenance of these resources.

A portion of the Proposed Action is located within Management Unit 5, Douglas Mountain. The Proposed Action is compatible with the management objective for this unit, which is to provide forest and woodland products. The Proposed Action would not conflict with the development of these resources.

A portion of the Proposed Action is located within Management Unit 7, Scattered Sands. The Proposed Action is compatible with the management objective for this unit, which is to provide for the development of leasable and locatable minerals. The Proposed Action would not conflict with the development of these resources.

A portion of the Proposed Action is located within Management Unit 10A, Cross Mountain Wilderness Study Area. The Proposed Action is compatible with the management objective for this unit, which is to protect the wilderness character of the area for possible future inclusion in the National Wilderness Preservation System. The Proposed Action would not conflict with this management goal.

A portion of the Proposed Action is located within Management Unit 12, Vermillion. The Proposed Action is compatible with the management objective for this unit, which is to prevent actions that would increase erosion and/or sediment yield. The Proposed Action would not conflict with the attainment of this goal.

A portion of the Proposed Action is located within Management Unit 13C, Lookout Mountain Area of Critical Environmental Concern (ACEC). The Proposed Action is compatible with the management objectives for this unit, which is to protect or enhance remnant plant associations,

Colorado BLM sensitive plant species, and scenic qualities. The Proposed Action is compatible with the goals for this unit.

A portion of the Proposed Action is located within Management Unit 15, Cross Mountain Foothills. The Proposed Action is compatible with the management objective for this unit, which is to maintain and improve the quality of habitat for bighorn sheep, elk, and mule deer. At the present time, there are no bighorn sheep populations within this unit. The Proposed Action would not conflict with the objective of this unit.

PURPOSE AND NEED FOR PROPOSED ACTION: BLM permit #0501066, which authorizes livestock grazing on the Sand Wash #04219, Nipple Peak #04225, Cross Mountain #04307, West Spring Creek #04438, and Greasewood #04521 Allotments expired on February 28, 2008. This permit is subject to renewal at the discretion of the Secretary of the Interior, who delegated the authority to BLM, for a period of up to ten years. The U.S. Bureau of Land Management has the authority to renew the livestock grazing permit/lease consistent with the provisions of the *Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act,* and Little Snake Field Office's *Resource Management Plan/Environmental Impact Statement.* This Plan/EIS has been amended by *Standards for Public Land Health in the State of Colorado.*

The Proposed Action will be assessed for meeting land health standards. The Little Snake Field Office is required to ensure that the management of livestock grazing meets or makes significant progress towards meeting the five Standards of Public Land Health in Colorado. Where the five standards are being met under current management, changes in management are not necessary except where BLM agrees that improvements to management will ensure proper use of rangeland resources. Where one or more standards is not being met, and the cause is current livestock management, BLM will institute changes in management, through the grazing permit or lease, which will ensure that authorized livestock grazing will allow standards to make significant progress toward being met.

In order to graze livestock on public land, the livestock producer (permittee) must hold a grazing permit. The grazing permittee has a preference right to receive the permit if grazing is to continue. The land use plan allows grazing to continue.

PUBLIC SCOPING PROCESS: The BLM Little Snake Field Office sent out a Notice of Public Scoping on December 22, 2006 to determine the level of public interest, concern, and resource conditions on the grazing authorizations that were up for renewal in FY 2008. A Notice of Public Scoping was posted on the Internet, at the Colorado BLM Home Page, asking for public input on grazing permit and lease renewals. Individual letters were sent to the affected permittees and lessees informing them that their permit and/or lease was up for renewal and requesting any information they wanted included or taken into consideration during the renewal process. There were no comments received specific to the renewal of this grazing permit.

BACKGROUND:

Sand Wash Allotment #04219
This allotment is located approximately 15 miles northwest of Maybell, Colorado. It is divided into three pastures, Sand Wash, Lower Sand Wash, and Three C Wash. The Sand Wash pasture encompasses the western half of Sand Wash Basin and, consequently, the western portion of the Sand Wash Wild Horse Herd Management Area (HMA). The Lower Sand Wash Pasture is located immediately south of Highway 318 and extends to roughly the southerly private land boundary south of the Little Snake River. The Three C Wash Pasture is located on the southeast side of the Lower Sand Wash Pasture, is bounded to the northeast by Highway 318, and extends southerly into Peck Mesa. The Sand Wash pasture is nearly continuous BLM land, while most of the private land is located along the Little Snake River in the Lower Sand Wash Pasture. The allotment contains a wide variety of plant communities. The most prevalent are sagebrush-grass, saltbush, and juniper woodland plant communities. Elevations range from approximately 7,400 feet along Lookout Mountain on the north boundary of the allotment to approximately 5,700 feet along the Little Snake River in the South Sand Wash Pasture.

Nipple Peak Allotment #04225
This allotment is located approximately 20 miles north of Maybell, Colorado. The allotment is dominated by a sagebrush-grass and saltbush plant communities with juniper woodlands occupying the steeper portions of the allotment. Elevations range from 7,425 feet at Nipple Peak to approximately 5,900 feet along the Little Snake River in the southeasterly portion of the allotment. The vast majority of this allotment is SLB land. The majority of the BLM land lies in the southerly portion of the allotment.

Cross Mountain Allotment #04307
This allotment is located approximately 12 miles west of Maybell, Colorado. This allotment partially encompasses Cross Mountain and the Cross Mountain Wilderness Study Area (WSA). This allotment is dominated by sagebrush-grass, pinyon-juniper woodland, greasewood, and saltbush plant communities. Elevations range from 7,752 feet along the top of Cross Mountain to approximately 5,700 feet where the Little Snake River exits the southern boundary of the allotment.

West Spring Creek Allotment #04438
This allotment is located approximately 5 miles north of Maybell, Colorado. The allotment consists largely of the breaks and bluffs above the Yampa River. Vegetation is predominantly juniper woodland with interspersed sagebrush-grass. Elevations range from approximately 6,500 feet to approximately 5,800 feet along the Yampa River. The southern half of the allotment is mostly SLB land.

Greasewood Allotment #04521
This allotment is located approximately 20 miles north of Maybell, Colorado. This large allotment is bisected by Greasewood Gulch and is composed largely of a sagebrush-grass plant community. Elevations range from just over 7,000 feet in the southeasterly portion of the

allotment to approximately 5,900 feet along the Little Snake River on the northwesterly boundary of the allotment. This allotment had 14,463 acres (31% of total acres) burned in the 2008 Mayberry Fire. Two years of post fire rest from livestock grazing was completed.

MONITORING DATA:

Sand Wash Allotment #04219

In the 1998 grazing permit renewal EA (CO-016-98-029) the Proposed Action reduced the total active Animal Unit Months (AUMs) in the Sand Wash Allotment from 9,237 AUMs to 7,568 AUMs. This reduction was based on unacceptable patterns of utilization, utilization data analysis, and ecological site inventory data which determined the previously possible livestock grazing use would exceed the present carrying capacity of the allotment.

In addition, the final decision that renewed the previously authorized permit placed 1,500 AUMs of the 6,377 authorized AUMs in the main Sand Wash Pasture into voluntary non-use for three years beginning March 1, 2000, pending the outcome of the Sand Wash Coordinated Resource Management Plan (CRM). The following stipulations applied to this three year voluntary non-use agreement: If the CRM fails, further monitoring and analysis, or the development of an approved grazing management plan will determine the status of the 1,500 AUMs.

The Sand Wash CRM was never completed or implemented, the actual use and monitoring over the past ten years (presented below) supports the current authorized use of 7,568 AUMs.

Actual use- Preference is 7,568 AUMs. From 1999 through 2010, an average of 49% (3,683 AUMs) of the preference has been used allotment wide. Actual use by the Sand Wash Wild Horse Herd, of which this allotment encompasses 39% of (62,246 acres), has averaged 3,165 AUMs since 2001. It is estimated that roughly 39% or an average of 1,234 AUMs annually, of horse use would have occurred on this allotment during that period.

Ecological Site Inventory- ESI was completed for the Sand Wash Pasture in 1997. Available federal AUMs were estimated at 4,961.

The Sand Wash Pasture is authorized for 6,377 livestock AUMs out of the total 7,568 for the entire allotment. From 1999 to 2010 average actual use on this pasture has been 554 AUMs, or 8% of the allotted 6,377. This is also equivalent to 10% of the available AUMs estimated in the 1997 ESI.

Utilization- Utilization on this allotment is typically read every spring and fall due to the year-round presence of horses. Since this allotment is used in the winter and/or spring by sheep, the spring measurements are relevant for detecting use by livestock. The table below shows browse and grass utilization from 1999 to fall 2010 in the Sand Wash Allotment, Sand Wash HMA area. This past 10 years of utilization data shows acceptable levels of livestock, wild horse, and wildlife use.

Year/Season Data Collected	% Browse Utilization	% Grass Utilization
Spring 1999	n/d	n/d
Fall 1999	n/d	n/d
Spring 2000	61%	n/d
Fall 2000	43%	8%
Spring 2001	19%	15%
Fall 2001	15%	18%
Spring 2002	27%	34%
Fall 2002	6%	13%
Spring 2003	15%	30%
Fall 2003	16%	37%
Spring 2004	25%	34%
Fall 2004	20%	31%
Spring 2005	22%	44%
Fall 2005	13%	13%
Spring 2006	49%	16%
Fall 2006	n/d	8%
Spring 2007	n/d	34%
Fall 2007	9%	28%
Spring 2008	55%	59%
Fall 2008	n/d	n/d
Spring 2009	n/d	n/d
Fall 2009	n/d	10%
Spring 2010	n/d	n/d
Fall 2010	27%	36%
Averages	26%	26%

0-5% = No Use, 6-20% = Slight, 21-40% = Light, 41-60% = Moderate, 61-80% = Heavy, 81-100% = Severe

Trend- Fourteen of fifteen photo point plots established on this allotment are within the HMA. Establishment dates for these plots are between the mid 1970s and early 1980s. Data was collected from these plots on a mostly annual basis until 1983. The plots were not revisited until 1995, when only photographs were taken. Quantitative data was again collected from these plots in June, 2005. In comparing the 2005 trend indices with those from the late 1970s and early 1980s, downward trends were shown on 6 plots, upward trends were shown on 4 plots, static trend was shown on 1 plot, and 2 plots could not be relocated. In 2010, attempts were made to relocate and reread all trend plots. Four plots of the 15 were unable to be relocated and the decision was made to abandon these plots due to lack of data and direction. Out of the 11 plots that were read in 2010, 7 plots showed upward trend while 4 plots showed a downward trend. On the plots with upward trend the average numeric index increase was 33, on the plots with a downward trend the average numeric index decrease was 19.

The downward trends that were indicated in the 2005 data mostly resulted from decreases in perennial grass cover and abundance in the interspaces between shrubs. One site in the central portion of the Sand Wash Allotment showed a significant decline, to near elimination, of perennial grasses on a site that was dominated by perennial grasses as recently as 1995. In 2010 this site shows recovery of the perennial grass component. In 1980 this site had a 78% perennial

grass composition, in 2005 - 29% perennial grass composition, in 2010 – 82% perennial grass composition.

Overall, compared to 2005 more plots are showing upward trend than downward, numerically speaking. Additionally, the upward trend plots are showing greater increases that the downward plots are showing decline.

In summary:

Available AUMs in the Main Sand Wash Pasture From 1997 ESI	4,961
10 year average AUMs used by livestock in the Main Sand Wash Pasture	509
10 year average AUMs used by Wild Horses in the Main Sand Wash Pasture	1,234
Annual unused AUMs still available in the Main Sand Wash Pasture based on the above averages	3,218
10 year average (livestock, wild horse, & wildlife) utilization over entire HMA.	26%
Percent of vegetation trend monitoring locations with upward trend in the Main Sand Wash Pasture	64%

Nipple Peak Allotment #04225
Actual use- Between 1999 and 2010, actual use has averaged 359 AUMs, with no use being made in 2003. The average is 85% of the total active preference of 422 AUMs.

Utilization- Use data was collected in 2000 and 2001. All key species measured were browse species. Average utilization in 2000 was 28% (422 AUMs were used) and in 2001, use was 32% (493 AUMs were used) for all species measured.

Ecological Site Inventory- There is no ESI data available for this allotment.

Trend- There is no trend data available for this allotment.

Cross Mountain Allotment #04307
Actual use- Between 1999 and 2010, actual use among all holders of grazing preference on this allotment has averaged 832 AUMs. The total forage allocation among all permittees on this allotment is 1,371 AUMs with 200 AUMs in suspension on the applicant's permit. Total use on this allotment by all permittees has averaged 90% of the total available AUMs on the allotment. The applicant's active preference is 900 AUMs and during the same time period the applicant's average actual use has been 64% of the 900 active AUMs.

Utilization- The only year that utilization data is available within the last ten years is 2000. That year, 1,009 AUMs of use was made by all permittees and an average of 19% utilization was measured on key browse species.

Ecological Site Inventory- ESI was collected in 1991. Average livestock carrying capacity was estimated to be 13.6 acres/AUM across all range sites with total available federal AUMs estimated to be 1,126.

Trend- In 2005, two photo trend plots were reread. One plot (90/B-5), located in the northern part of the allotment, was established in 1969 with subsequent readings in 1972 and 1980. This plot showed an upward trend with the greatest improvements seen in plant diversity and increased litter accumulation. In 2010 this plot showed a slight downward trend due to a decrease in vegetation cover and litter. The other plot (6), located west of the Little Snake River approximately one mile south of the County Road 10 bridge, was established in 1977 and was re-read annually until 1983. The 2005 data showed a relatively stable to slightly downward trend with decreases seen in overall plant composition, cover, and litter accumulation. In 2010 this plot showed a marked upward trend with increases in vegetation cover, litter, and seedlings.

West Spring Creek Allotment #04438

Actual use- Between 1999 and 2010, actual use has averaged 347 AUMs, or 70% of the total 494 AUM preference.

Utilization- Utilization was last read in 2000. Average utilization was 25% on big sagebrush and 34% on antelope bitterbrush. Actual livestock use was 383 AUMs that year.

Ecological Site Inventory- ESI was conducted on this allotment in 1997. Total available forage on BLM land was estimated to be 493 AUMs or an overall average of 15.6 acres/AUM.

Trend- There is no trend data available for this allotment.

Greasewood Allotment #04521

Actual use- Between 1999 and 2010, actual use has averaged 1,524 AUMs or 58% of the 2,638 AUM total preference. In 2009 & 2010 use was limited to an annual maximum 1,609 AUMs due to a large wildfire in 2008 that required a partial closure of this allotment and rest from livestock grazing.

Utilization- The utilization data collected in 2000 is as follows. Average utilization on big sagebrush was 24% with use ranging from 12% to 40%. Actual use that year was 1,748 AUMs. Utilization data was collected in 2010 with average utilization of 12% on grasses and 21% on sagebrush. Cattle did not use the allotment in 2009 and before 09/01 in 2010 due to rest from the 2008 Mayberry Fire. Sheep did use unburned areas of the allotment in the winter – early summer of 2010. All 2010 utilization is attributed to sheep and wildlife use.

Ecological Site Inventory- ESI was conducted on this allotment in 1991. Total available production for livestock was estimated to be 3,535 AUMs from BLM land, or approximately 6 ac/AUM. Total permitted use is 2,638 AUMs, or approximately 8 ac/AUM.

Trend- There is no trend data available for this allotment.

RANGELAND HEALTH:

All of the allotments were assessed for meeting the Colorado Standards for Public Land Health by an interdisciplinary team composed of wildlife biologists, rangeland management specialists, and a natural resources specialist.

Sand Wash Allotment #04219
Rangeland health indicators were examined on twelve sites representing the significant range sites within the allotment. All indicators are meeting standards except on three sites where the native species standard is not met. These three sites are representative of the southerly portion of the Sandwash Pasture. On each of these sites, poor perennial grass vigor and abundance, poor shrub vigor and abundance, and little plant recruitment are prevalent. Drought conditions at the time of assessment were attributed as the causal factor of these conditions.

Nipple Peak Allotment #04225
One site was assessed on this allotment. All standards are met.

Cross Mountain Allotment #04307
Two upland sites and one riparian site were assessed on this allotment. Both upland sites are meeting all standards. Reaches 3, 4, and 5 of the Little Snake River were assessed for Proper Functioning Condition. Reaches 3 and 4 are at Proper Functioning Condition while Reach 5 is Functioning-at-Risk with an unknown/not apparent trend.

West Spring Creek #04438
Two sites, one on BLM and one on SLB land, were assessed. All standards are met at both sites.

Greasewood #04521
Six sites were assessed on this allotment. All sites met all standards except one. It failed the native species standard as it is located in an old crested wheatgrass seeding and, as a result, is lacking in species diversity.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES: Renew the grazing permit #0501066 on the Sand Wash #04219, Nipple Peak #04225, Cross Mountain #04307, West Spring Creek #04438, and Greasewood #04521 Allotments for a period of ten years, expiring February 28, 2021, or cancel any or all grazing preferences for allotments listed under the No Action and Preferred Alternatives.

No Action Alternative (continued previous authorized use)

Allotment	Livestock	Dates			
Name & Number	Number & Kind	Begin	End	%PL	AUMs
Sand Wash #04219					
Sand Wash Pasture	5550 Sheep	11/15	02/28	96	3714
	5550 Sheep	03/01	05/15	96	2663

Allotment Name & Number	Livestock Number & Kind	Dates Begin	End	%PL	AUMs
Lower Sand Wash Pasture	48 Sheep	11/15	02/28	96	32
	48 Sheep	03/01	05/31	96	28
	150 Cattle	10/16	01/15	96	436
	150 Cattle	04/16	05/31	96	218
Three C Wash Pasture	415 Sheep	11/15	02/28	96	278
	415 Sheep	03/01	05/15	96	199
				Total	7568
Nipple Peak #04225	1348 Sheep	12/01	02/28	35	279
	1348 Sheep	03/01	04/15	35	143
				Total	422
Cross Mountain #04307	753 Sheep	11/01	02/28	95	565
	755 Sheep	03/01	05/10	95	335
				Total	900
West Spring Creek #04438	970 Sheep	11/01	02/28	35	268
	970 Sheep	03/01	05/30	35	203
North Spring Creek Pasture	19 Sheep	05/01	10/31	100	23
				Total	494
Greasewood #04521	1587 Sheep	11/01	02/28	51	639
	1584 Sheep	03/01	06/30	51	648
	265 Cattle	05/01	02/28	51	1351
				Total	2638

The above permit would be subject to the following Special Terms and Conditions:

1) Nottingham Land and Livestock may be authorized for up to 190 AUMs of cattle use in the main Sand Wash Pasture from 06/01 to 10/15. When cattle are authorized, a herder is required to keep cattle within the main Sand Wash Pasture and to rotate areas of use so that the same areas are not grazed in consecutive years. These AUMs will come out of the active use specified for the Sand Wash Pasture.

2) The permitted grazing period in the main Sand Wash Pasture may be extended to 5/31 one out of every three years.

3) Monitor grass utilization in the southern portion of the main Sand Wash Pasture during the fall and winter grazing season. In areas where sage-grouse nesting site potential is good, maintain 10-15% canopy cover of residual grass 4-6 inches tall.

4) The class of livestock in the Three C Wash and Lower Sand Wash pastures may be cattle or sheep. Cattle use in these two pastures will be rotated each year so that the same areas are not grazed at the same time each year.

5) In the Nipple Peak Allotment, up to 192 of the active AUMs may be authorized for cattle use.

6) In the Nipple Peak Allotment, monitoring data indicated the browse in the southeast corner (T10N R96W, Sections 21-23, 27) of the allotment was over-utilized from 1988 through 1994. Nottingham Land and Livestock has avoided grazing this area with its sheep due to halogeton since it gained control of the allotment in 1987 and agrees to continue avoid grazing this area with its livestock.

7) In the Greasewood Allotment, the springs and associated riparian resources should be evaluated for lentic riparian potential and functioning capability assessment. If problem attributes are identified and determined to be caused by livestock grazing practices, then corrective actions will be implemented. In the event that it is determined grazing practices are causing problems in these areas, then other adjustments to the grazing permit will be necessary.

8) In order to minimize conflicts during severe winters in the Sand Wash Allotment between livestock, wild horses, and wildlife, Nottingham Land and Livestock will avoid grazing sheep on public lands as much as possible in the identified critical/severe winter ranges for antelope, mule deer, and sage-grouse. A severe winter is described as snow depths greater than one foot, wind episodes that cause drifting, and temperatures fluctuating between -25F and 25F.

9) Herd sheep during the spring growing season so as to periodically defer areas of grazing use to allow forbs to reproduce and improve vigor of the saltbush communities. Avoid spring use on the same areas at the same time in consecutive years.

10) Rotate cattle grazing use in the Greasewood Allotment with water wells. Continue proper grazing use and provide residual grass cover in the spring by utilizing no more than 50% on key grass species and 40% on key browse species by the end of the grazing season.

11) In the main Sand Wash Pasture, 1500 of the 6377 AUMs of active use will be placed in voluntary non-use for three years, pending the Sand Wash CRM outcome. If the CRM fails, further monitoring and analysis, or the development of an approved grazing management plan will determine the status of the 1500 AUMs.

Preferred Alternative

Modifications made would be updates to the Special Terms and Conditions. These modifications simplify and are broader in scope for some Special Terms and Conditions, represent new recommendations associated with sage-grouse management, were never enforced and are irrelevant for wildlife management, and in the case of the Sand Wash Coordinated Resource Management (CRM) temporary non-use. The Sand Wash CRM was never completed or implemented, and given the monitoring and actual use over the past ten years this reduction was

not needed (see Monitoring Data Section above). There are two date modifications for season of use, one on Cross Mountain Allotment and one on Greasewood Allotment; the allocated AUMs would remain the same. There would also be the construction of a new pond on the Greasewood Allotment #04521. The permit would be renewed as follows:

Allotment Name & Number	Livestock Number & Kind	Dates Begin	End	%PL	AUMs
Sand Wash #04219					
Sand Wash Pasture	5550 Sheep	11/15	02/28	96	3714
	5550 Sheep	03/01	05/15	96	2663
Lower Sand Wash Pasture	48 Sheep	11/15	02/28	96	32
	48 Sheep	03/01	05/31	96	28
	150 Cattle	10/16	01/15	96	436
	150 Cattle	04/16	05/31	96	218
Three C Wash Pasture	415 Sheep	11/15	02/28	96	278
	415 Sheep	03/01	05/15	96	199
				Total	7568
Nipple Peak #04225	1348 Sheep	12/01	02/28	35	279
	1348 Sheep	03/01	04/15	35	143
				Total	422
Cross Mountain #04307	753 Sheep	11/01	02/28	95	565
	590 Sheep	03/01	05/30	95	335
				Total	900
West Spring Creek #04438	970 Sheep	11/01	02/28	35	268
	970 Sheep	03/01	05/30	35	203
North Spring Creek Pasture	19 Sheep	05/01	10/31	100	23
				Total	494
Greasewood #04521	1587 Sheep	11/01	02/28	51	639
	1584 Sheep	03/01	06/30	51	648
	265 Cattle	04/01	01/29	51	1351
				Total	2638

The above permit would be subject to the following Special Terms and Conditions:

1) Nottingham Land and Livestock may be authorized for up to 190 AUMs of cattle use in the main Sand Wash Pasture from 06/01 to 10/15. When cattle are authorized, a herder is required to keep cattle within the main Sand Wash Pasture and to rotate areas of use so that the same areas are not grazed in consecutive years. These AUMs will come out of the active use specified for the Sand Wash Pasture.

2) The permitted grazing period in the main Sand Wash Pasture may be extended to 5/31 one out of every three years.

3) For all allotments - In areas where sage-grouse nesting site potential is good, ecological site characteristics are conducive, and species composition allow, maintain 10-20% canopy cover of herbaceous vegetation and maintain residual grass height of 7 inches or greater. This monitoring will be conducted in close proximity to established monitoring sites where the above conditions are met. *See maps (appendix 1a-1c) for established monitoring locations. Future sites may be established as necessary.*

4) The class of livestock in the Three C Wash and Lower Sand Wash pastures may be cattle or sheep. Cattle use in these two pastures will be rotated each year so that the same areas are not grazed at the same time each year.

5) In the Nipple Peak Allotment, up to 192 of the active AUMs may be authorized for cattle use.

6) Nipple Peak Allotment – Due to historic overgrazing and halogeton encroachment the southwest portion of this allotment will be avoided until the permittee and BLM have agreed that vegetation resources have improved and can sustain annual livestock use.

7) For all allotments - Herd sheep during the spring growing season so as to periodically defer areas of grazing use to allow forbs to reproduce and improve vigor of the vegetation communities. Avoid spring use on the same areas at the same time in consecutive years.

8) Rotate cattle grazing use in the Greasewood Allotment with water wells so that the same areas are not grazed at the same time each year.

The above permit would be subject to the Standard and Common Terms and Conditions, see Attachment 2.

WATER DEVELOPMENT

A new pond would be constructed within a tributary to Greasewood Gulch in the NE ¼ NE ¼ Sec. 2 T9N R95W on the Greasewood Allotment #04521. This pond would replace the non-functional Greasewood Well #201379 located nearby. In conjunction with this, the windmill and tank at the Greasewood Well would be removed and the site seeded with adapted species. The well itself may be temporarily capped for possible future use.

The pond would be constructed in an ephemeral drainage where a portion of seasonal water flow can be stored for use by livestock and wildlife. Construction of this development would entail mechanical clearing of brush, core trenching of the dam site, and the construction of an earthen dam and water retention pit by dozer. The dam would not exceed 15 feet in height from the bottom of the embankment to the bottom of the spillway and water retention would be between 0.2 and 0.5 acre-feet. A minimum of 4-feet freeboard would be added to the embankment to

direct any spillage towards the embankment. The pit would be lined with bentonite to improve water retention. The pond would involve a direct surface disturbance of a *maximum* of 2 acres for construction, but more typically, total direct surface disturbance would be 1 acre or less.

Pond Construction Stipulations
1. Access to and from each site will be on existing roads or trails. Where cross-country travel is mandatory, the same tracks will be used in and out. While traveling, the dozer blade will be kept up.

2. Top soil will be stockpiled and used to cover the disturbed area to the greatest extent possible.

3. Noxious weeds will be controlled by the permittee on any area disturbed as a result of these projects. Any spraying of weeds will need to be cleared through BLM prior to spraying.

4. No hazardous materials/hazardous waste or trash shall be disposed of on public lands. If a release does occur, it shall be reported to the Little Snake Field Office immediately at 970-826-5000.

5. Any surface disturbance will be reseeded with native species adapted to the area.

6. Construction for the water development shall not occur during the sage-grouse nesting period from 3/1 – 6/30.

No Grazing Alternative
This alternative would cancel any or all grazing preferences for allotments listed under the Proposed Action. As a result, livestock grazing would not continue. This would be a permanent cancellation. The BLM would initiate a process in accordance with the 4100 regulations to permanently eliminate grazing on the grazing allotment(s) listed under the proposed action.

Alternatives Considered but not Analyzed
NEPA requires federal agencies to rigorously explore and evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). As also required by NEPA, the range of alternatives considered in detail includes only those alternative that would fulfill the purpose and need for the Proposed Action.

Reduced Grazing Alternative
A reduction in authorized grazing would take place under this alternative.

This alternative is eliminated from detailed study because overall land health standards are being met for all allotments under the Proposed Action, and on individual sites where standards are not being met, causal factors are not attributed to current livestock management. Additionally, a reduction in grazing is not analyzed because no new issues or concerns have been identified that would require this action.

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES

CRITICAL RESOURCES

AIR QUALITY

Affected Environment: There are five federal Class I areas within 100 kilometers of the Little Snake Field Office (LSFO) boundary, all of which occur in Colorado. There are no federal Class I areas in Utah or Wyoming within 100 km of the LSFO boundary. There are no non-attainment areas nearby that would be affected by either alternative.

Environmental Consequences, No Action and Preferred Alternatives: Authorizing livestock grazing in any of the allotments would not cause regional air quality impairment under either of the alternatives. The existing plant cover gives sufficient cover to the soil surface, but proper grazing use and plant regrowth in the allotments after the early grazing period would provide additional cover and protection of the surface soil from wind erosion. Vehicular access on existing roads for livestock management activities would result in minimal releases of particulate matter (dust) emissions, but this would be minor and not affect the overall air quality of the area.

The rest that occurred in the easterly portion of the Greasewood Allotment #04521 that burned in 2008 ensures that perennial vegetation, particularly grasses, would establish with enough density and vigor to hold the soil in place and protect it from excessive wind erosion. By giving perennial grasses as much opportunity as possible to reestablish root systems capable of holding the soil in place and canopies capable of protecting the soil surface, air quality would be protected from excessive dust emissions.

Environmental Consequences, No Grazing Alternative: None.

Name of specialist and date: Mark Lowrey, 01/20/11

AREA OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: A small portion (< 100 acres) of the Sand Wash Allotment #04219 is located within Management Unit 13C, Lookout Mountain Area of Critical Environmental Concern (ACEC). Lookout Mountain is an excellent example of an isolated, flat-topped erosional remnant of a once-extensive Tertiary alluvial plain. The site contains high-quality cold desert shrublands and pinyon-juniper woodlands. Lookout Mountain is habitat for four State and regionally rare plant species, two of which only occur on this site in Colorado. The plant association of *Juniperus osteoperma/Agropyron spicatum* (Utah juniper/bluebunch wheatgrass) is of critical State concern because of the extreme rarity of sites in good condition. It is rare and restricted throughout its range with remaining stands being threatened by livestock grazing.

Environmental Consequences, No Action and Preferred Alternatives: Given the small acreage affected on the edge of this ACEC, and the fact that there have not been any conflicts between ACEC management and authorized livestock grazing there would continue to be no adverse impacts.

Environmental Consequences, No Grazing Alternative: None

Name of specialist and date: Gina Robison, 02/01/11

CULTURAL RESOURCES

Affected Environment: Grazing authorization renewals are undertakings under Section 106 of the National Historic Preservation Act. During Section 106 review, a cultural resource assessment was completed for each allotment by Robyn Watkins Morris, Little Snake Field Office Archaeologist, on June 3-4, 2009. The assessment followed the procedures and guidance outlined in the 1980 National Programmatic Agreement Regarding the Livestock Grazing and Range Improvement Program, IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM-CO-01-026. The results of the assessment are summarized in the table below. Copies of the cultural resource assessments are in the field office archaeology files.

Data developed here were taken from the cultural program project report files, site report files, and base maps kept at the Little Snake Field Office as well as from General Land Office (GLO) maps, BLM land patent records, An Overview of Prehistoric Cultural Resources Little Snake Resource Area, Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, and An Isolated Empire, A History of Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and Appendix 21 of the Little Snake Resource Management Plan and Environmental Impact Statement, Draft February 1986, Bureau of Land Management, Craig, Colorado District, Little Snake Resource Area.

The table below is based on the allotment specific analysis. The table shows known cultural resources, eligible and need data, and those that are anticipated to be in each allotment.

Allotment Number	Acres Surveyed at a Class III Level	Acres NOT Surveyed at a Class III Level	Percent of Allotment Inventoried at a Class III Level	Eligible or Need Data Sites-Known in Allotment	Estimated Sites for the Allotment *(total number)	Estimated Eligible or Need Data Sites in the Allotment (number)
04219	3,142	73,049	4%	61	2023	606
04225	45	15,521	0.2%	1	413	124
04307	698	21,140	3%	14	580	173
04438	570	14,134	4%	15	390	110
04521	85	46,243	0.1%	3	1230	367

*Estimates of site densities are based on known inventory data. Estimates should be accepted as minimum figures which may be revised upwards based on future inventory findings.

In the Sand Wash Allotment #04219, twenty-nine cultural resource inventories were conducted resulting in the complete coverage inventory of 3,142 acres and the recording of 175 cultural resources. Fifty-five of these are prehistoric open lithic, thirty-nine are prehistoric open camps, thirty-eight are paleontological resources, sixty-one are prehistoric isolated finds, six prehistoric quarries, two brush fences, and one wickiup. The historic GLO plats were reviewed. Almost all of the GLO plats for this allotment have nothing on them. The exceptions are on the 1881 plat for T9N R99W which shows cabins in Section 22 and 25 and on the 1905 plat for T10N R99W which shows a cabin in Section 16.

In the Nipple Peak Allotment #04225, four cultural resource inventories were conducted within the allotment resulting in the complete coverage of 45 acres and the recording of nine cultural resources. Seven prehistoric isolated finds and two open camps are recorded. The GLO plats were reviewed. No cultural resources are identified on the 1878 plat for T10N R96W or the 1881 or 1905 plats for T11N R96W. On the 1904 plat for T10N R96W there is a "dim" road in Sections 7, 15-17, and 22. One cultural resource inventory was conducted within the allotment resulting in the complete coverage inventory of 602 acres and the recording of three cultural resources. One is a historic isolated find (bottle), one is a prehistoric isolated find (flake), and one is the historic Ferndale Schoolhouse.

In the Cross Mountain Allotment #04307, eighteen cultural resource inventories were conducted resulting in the complete coverage inventory of 698 acres and the recording of twenty-four resources. Nine of these are prehistoric open camps, two are open lithics, four are sheltered camps, eight are prehistoric isolated finds, and one is a large complex rock art site. The historic GLO plats were reviewed. The 1904 plat for T7N R97W shows historic roads while the 1881 plat shows nothing.

In the West Spring Creek Allotment #04438, five cultural resource inventories were conducted resulting in the complete coverage of 570 acres and the recording of 43 resources. Twenty of these are prehistoric isolated finds, sixteen are prehistoric open camps, four are historic isolated finds, two are prehistoric open lithics, and one is a paleontology site. The GLO plats were

reviewed for this allotment. On the 1881 plat for T7N R96W there is a "Bogg's Cabin" in the SW ¼ NE ¼ SW ¼ of Section 15. On the 1906 plat for T7N R96W there are some historic roads. On the 1881 plat for T7N R95W there are no cultural resources shown. On the 1906 plat for T7N R95W there are some historic roads shown.

In the Greasewood Allotment #04521, five cultural resource inventories were conducted within the allotment resulting in the complete coverage of 85 acres and the recording of five resources consisting of two prehistoric isolated finds and three prehistoric open camps.

Based on available data, a high potential for historic properties occurs in the Sand Wash #04219 and Cross Mountain #04307 Allotments. The other three allotments have not been surveyed adequately to assess potential. Subsequent cultural resource inventory will be completed within a ten year period conducted in areas where livestock concentrate.

1. In the Nipple Peak Allotment #04225, approximately 185 acres need to be surveyed in areas of livestock concentration (near water and roads).

2. In the West Spring Creek Allotment #04438, approximately 267 acres need to be surveyed in areas of livestock concentration (near water).

If cultural resources are located during the subsequent field inventory, and BLM determines that grazing activities are adversely impacting the resources, mitigation will be identified and implemented in consultation with the Colorado SHPO.

Environmental Consequences, No Action and Preferred Alternatives: The direct impacts that occur where livestock concentrate, during normal livestock grazing activity, include trampling, chiseling, and churning of site soils, cultural features, and cultural artifacts, artifact breakage, and impacts from standing, leaning, and rubbing against historic structures, above-ground cultural features, and rock art (Broadhead 2001, Osbourn et al. 1987). Indirect impacts include soil erosion, gullying, and increased potential for unlawful collection and vandalism. Continued livestock use in these concentration areas may cause substantial ground disturbance and cause irreversible adverse effects to historic properties. Placement of mineral supplements, which can create concentration areas, would potentially impact historic properties if they are in proximity of the placement. Continued livestock management under either alternative is appropriate, as long as new discovery's of cultural resources are property mitigated if grazing impacts are occurring.

Standard Stipulations for cultural resources are included in Standard and Common Terms and Conditions (Attachment #2).

Environmental Consequences, No Grazing Alternative: While a no grazing alternative alleviates potential damage from livestock activities, cultural resources are constantly being subjected to site formation processes or events after creation (Binford 1981, Schiffer 1987). These processes can be both cultural and natural and take place in an instant or over thousands of

years. Cultural processes include any activities directly or indirectly caused by humans. Natural processes include chemical, physical, and biological processes of the natural environment that impinge and or modify cultural materials. Sites which have been determined eligible for the National Register and are threatened may be mitigated.

Name of specialist and date: Ethan Morton, 01/25/11

References:

Binford, Lewis R.
1981 Behavioral archaeology and the "Pompeii Premise". Journal of Anthropological Research 37(3):195-208.

Broadhead, Wade
2001 *Brief Synopsis of Experiments Concerning Effects of Grazing on Archaeological Sites*. Ms. on file, Bureau of Land Management, Gunnison Field Office, Gunnison, Colorado.

Osbourn, Alan, Susan Vetter, Ralph Hartley , Laurie Walsh, Jesslyn Brown
1987 *Impacts of Domestic Livestock Grazing in the Archaeological Resources of Capitol Reef National Park, Utah. Occasional Studies in Anthropology No. 20.* Ms. on file, Midwest Archaeological Center, Lincoln, Nebraska.

Schiffer, Michael B.
1987 *Formation Processes of the Archaeological Record*]Formation Processes of the Archaeological Record. Albuquerque: University of New Mexico Press.

ENVIRONMENTAL JUSTICE and SOCIOECONOMICS

Affected Environment: Federal agencies are required to assess projects to ensure there is no disproportionately high or adverse environmental, health, or safety effects on minority and low-income populations. Minorities comprise a small proportion of the population residing inside the boundaries of the Little Snake Field Office.

Agricultural practices, energy exploration and development, and hunting are the main economic activities of the area. In this region, livestock operations and public land management are strongly linked through grazing permits.

Environmental Consequences, No Action and Preferred Alternatives: Minority or low-income populations seeking employment in the ranching industry would be beneficially affected due to employment opportunities related to the No Action and Preferred Alternatives, indirect benefits to the surrounding economy would occur due to overall employment opportunities related to the ranching service support industry in the region as well as the economic benefits to state and county governments related to taxes. Grazing operations would continue to supply personal income to the operator and employees, and would have a proportional influence on the regional, Colorado, and national economy.

Grazing activities may impact other public land users and nearby residents, but the impact is not considered substantial at this time due to the intermittent nature of the presence of sheep and

cattle. The No Action or Preferred Alternatives would not generate high levels of concern, opposition, or dissatisfaction among local residents and would not adversely affect the environment, health, or safety of minority and low-income populations.

Environmental Consequences, No Grazing Alternative: If the No Grazing Alternative were to be chosen, canceling the preference for all or any allotments under the proposed action, this would have a negative economic impact on minority or low-income populations who could lose employment due to this action. The indirect effects would include negative effects due to overall employment opportunities related to the ranching service support industry in the region. A loss of the grazing permit on the allotment would reduce the profitability of the ranch, reducing economic benefits to state and county governments related to taxes.

The No Grazing Alternative would generate high levels of concern, opposition, or dissatisfaction among local residents and would not adversely affect the environment, health, or safety of minority and low-income populations.

Name of specialist and date: Barb Blackstun, 01/31/11

FLOOD PLAINS

Affected Environment: There are 100-year floodplains present on public lands within all of the allotments. Flood frequency for all allotments is expressed as rare (flooding is unlikely but possible under unusual weather conditions; chance of flooding is 1 to 5% in any year), occasional (flooding occurs infrequently under normal weather conditions; chance of flooding is 5 to 50% in any year), or frequent (flooding is likely to occur often under normal weather conditions; chance of flooding is more than 50% in any year but is less than 50% in all months in any year).

Sandwash Allotment #04219
Small active and stable floodplain areas are present along South Sand Wash, upper Sand Wash and several other tributaries. Segments of lower Sand Wash do not have stable floodplain areas due to stream incisement, scouring runoff and unstable sandy soil conditions. Developments associated with these floodplains include fences, windmills, and unimproved roads. Vaughn Draw and lower reaches of Sand Wash occasionally flood. Reaches along the Little Snake River within the allotment rarely to frequently flood.

Nipple Peak Allotment #04225
There is a short reach (0.6 miles) of the Little Snake River in the easterly portion of the allotment that rarely floods. The floodplain along this reach is generally inaccessible to the river during most high flows, due largely to the presence of numerous overflow channels. An unnamed tributary to the Little Snake River in the northeast portion of the allotment occasionally floods.

Cross Mountain Allotment #04307
The Little Snake River crosses public land for approximately 1.5 miles within this allotment. Along this reach, there is a healthy and active floodplain that is sufficiently accessible by high flows. Floodplains associated with the Little Snake River in this allotment rarely flood.

West Spring Creek Allotment #04438
Floodplains exist along Reaches 1, 2, and 3 of Spring Creek. In each of these reaches, the stream has adequate access to the floodplains and occasionally floods. The lower portions of Sand Creek rarely floods.

Greasewood Allotment #04521
Greasewood Gulch experiences rare to occasional flooding. All reaches along the Little Snake River within the allotment experience rare flooding. Spring Creek experiences rare flooding.

Environmental Consequences, No Action and Preferred Alternatives: In each of these allotments, flood plains are performing their natural function to absorb high stream flows and lessen the potential for catastrophic flooding. This function has remained intact under current management and would remain so under the either alternative. There are no range improvements that are proposed in any floodplains.

Environmental Consequences, No Grazing Alternative: None, flood plains would continue to function properly.

Name of specialist and date: Hunter Seim 11/13/09, Emily Spencer 10/25/10

Source: USDA-NRCS Soil Data Viewer version 5.2.0016: http://soildataviewer.nrcs.usda.gov/

INVASIVE, NONNATIVE SPECIES

Affected Environment: Invasive species and noxious weeds occur within the allotments. Canada thistle, hoary cress (whitetop), several species of biennial thistles, halogeton, cheatgrass and knapweed are known to occur in these areas. Other species of noxious weeds could be introduced by vehicle traffic, livestock, wildlife and other means of dispersal. Principals of Integrated Pest Management (IPM) are employed to control noxious weeds on public lands in the Little Snake Field Office.

Environmental Consequences, No Action and Preferred Alternatives: The impact of invasive or noxious weed establishment is very similar under either alternative. Vehicular access to public lands for dispersed recreation, hunting, grazing operations, livestock and wildlife movement, as well as wind and water, can cause weeds to spread into new areas. Surface disturbance from livestock concentration and human activities associated with grazing operations can also increase weed presence. The largest concern in the allotments would be for biennial and perennial noxious weeds to establish and not be detected. Once an infestation is detected it could be controlled with various IPM techniques. Land practices and land uses by the livestock

operator and their weed control efforts and awareness would largely determine the identification and potential infestations of weeds within the allotments.

Environmental Consequences, Preferred Alternative: The proposed pond included in this alternative provides a disturbance opportunity for invasive species to establish. Permittee awareness of pre-construction weed species presence as well as post construction monitoring of weed species would assist in treatment of potential infestations associated with the proposed project. Revegetation of any disturbed areas would be expected in 2-3 years reducing the potential for weed establishment.

Environmental Consequences, No Grazing Alternative: Removal of livestock grazing from the area would provide a benefit for native vegetation competing with invasive weed species for available resources. Existing infestations of noxious weeds would continue to spread or maintain current size. Some reduction in weed spread would result by removing livestock grazing from the allotments. However, other uses in the area including wildlife, recreation users and hunting as well as wind and water resources would still provide a significant avenue for spread of weed seed. Additionally, active management prioritization and early detection and treatment of small infestations would be reduced by this alternative.

Name of specialist and date: Christina Rhyne, 10/28/10

MIGRATORY BIRDS

Affected Environment: Plant communities on the allotments are largely comprised of sagebrush with a healthy understory of grasses and forbs. A variety of migratory birds utilize this habitat during the nesting period (May through July) or during spring and fall migrations. The allotments contain potential nesting and/or foraging habitat for the following United States Fish & Wildlife Service (USFWS) 2008 Birds of Conservation Concern: Brewer's sparrow, sage sparrow, and sage thrasher.

Environmental Consequences, No Action and Preferred Alternatives: While livestock grazing can directly impact reproductive success of migratory songbirds by trampling of nests, it is more likely that it indirectly influences reproductive success due to changes in vegetation such as species composition, height or cover. Limiting utilization levels and where possible providing for periodic deferment in different areas would help herbaceous species provide adequate cover. As proposed in either alternative, grazing would not alter habitat conditions to the extent that reproduction or opportunities for foraging would be reduced.

Environmental Consequences, No Grazing Alternative: Elimination of grazing would directly and indirectly impact migratory birds and their habitat. Cessation of cattle grazing would eliminate nest loss and potential mortality of migratory birds through grazing and grazing-related activities. The no grazing alternative would have either a beneficial or detrimental effect on individual migratory bird species, depending on the response of range condition and individual species requirements, but affects at the population or species level would not be adverse.

Name of specialist and date: Gail Martinez, 02/01/11

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council on May 5, 2008. The letter listed the FY08 and FY09 projects that the BLM would notify them on and projects that would not require notification. A follow up phone call was performed on June 16, 2008. No comments were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Ethan Morton, 01/25/11

PRIME & UNIQUE FARMLANDS

Affected Environment: There are federal lands designated as prime and unique farmlands as well as farmland of statewide importance within all of the allotments. However, to conditionally qualify as prime farmland soils in these areas must be irrigated and/or reclaimed of excess salts and sodium. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods.

Environmental Consequences, All Alternatives: There would be no adverse impacts as none of these soils on public lands are or would become irrigated or otherwise manipulated so as to create conditions favorable to create prime farmland within the allotments.

Name of specialist and date: Emily Spencer, 10/25/10

Source: USDA-NRCS Soil Data Viewer version 5.2.0016: http://soildataviewer.nrcs.usda.gov/

T&E AND SENSITIVE ANIMALS

Affected Environment: There are no threatened or endangered species or habitats for such species present within the allotments. These allotments do provide breeding and nesting habitat for greater sage-grouse, a BLM special status species and a candidate for listing and protection under the Endangered Species Act (ESA). There are two leks within the Cross Mountain Allotment #04307, one lek in the Sand Wash Allotment #04219, and six leks within the Greasewood Allotment #04521. Much of the nesting and breeding habitat within the Greasewood Allotment #04521 was negatively impacted by the Mayberry Fire of 2008.

Environmental Consequences, No Action and Preferred Alternatives: Livestock grazing has the potential to reduce residual grass cover, an important habitat component for sage-grouse nest concealment.

The minor differences between the Proposed Action and No Action Alternatives allow for

basically the same grazing system that has occurred for the last ten years within these allotments. Greater sage-grouse numbers within these allotments have remained stable during this time period. Slight fluctuations in male lek attendance have been seen during this time period both up and down. This would indicate that the current grazing system is compatible with greater sage-grouse breeding and nesting.

Special Term and Condition #3 under the Preferred Alternative is intended to ensure that suitable sage-grouse habitat is available with the implementation of residual grass height and canopy cover requirements. These requirements are recommended by the Habitat Structural Guidelines found within the Colorado Greater Sage Grouse Conservation Plan.

The potential season of livestock use encompasses much of the growing season in some allotments. The rotation of livestock through the allotments using water wells and herding, plus the variability in season of use and livestock numbers allows for adequate growing season rest and deferral. Implementation of either alternative would not degrade greater sage-grouse habitats on the allotments.

Environmental Consequences, No Grazing Alternative: The No Grazing Alternative would benefit wildlife by reducing and eventually eliminating direct and indirect effects of livestock grazing and associated activities to wildlife. Increases in forage and hiding cover amounts, types, and quality for wildlife would be expected with this option.

Name of specialist and date: Gail Martinez, 02/01/11

Source: Colorado Greater Sage Grouse Conservation Plan: http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/Birds/GreaterSagegrouseConservationPlan.htm

T&E AND SENSITIVE PLANTS

Affected Environment: There are no federally listed threatened or endangered or BLM sensitive plant species present on any of the affected allotments.

Environmental Consequences, No Action and Preferred Alternatives: None

Environmental Consequences, No Grazing Alternative: None

Name of specialist and date: Hunter Seim, 03/06/09

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no hazardous materials present on any of the allotments.

Environmental Consequences, No Action and Preferred Alternatives: Potential releases of hazardous materials could occur due to vehicular access for livestock management operations. Coolant, oil, and fuel are materials that could potentially be released. Due to the limited amount

of vehicular activity that would be required, the potential for releases of any of these materials is low and if a release were to occur, it would be minimal and highly localized and not result in an adverse impact to the allotments.

Environmental Consequences, No Grazing Alternative: None

Name of specialist and date: Mark Lowrey, 01/20/11

WATER QUALITY - GROUND

Affected Environment: All five allotments have some ground water aquifers containing meteoric water. The ground water quality in these areas ranges from potable to useable in aquifers within porous and fractured formations (mostly sandstone and conglomerates).

Environmental Consequences, No Action and Preferred Alternatives: Surface disturbance such as livestock grazing and associated activities would have no affect to ground water quality. Specifically, all permit activities would comply with the applicable water quality regulations in The Colorado Water Quality Control Act, and they would be in conformance with the classifications and numeric standards for water quality established by the Colorado Water Quality Control Commission.

Environmental Consequences, No Grazing Alternative: None

Name of specialist and date: Marilyn D. Wegweiser, 03/23/09

WATER QUALITY - SURFACE

Affected Environment:

Sand Wash Allotment #04219
Water from the allotment flows into Sand Wash, an ephemeral tributary of the Little Snake River, or into the Little Snake River. Water quality for all tributaries of the Little Snake River (below its confluence with Fourmile Creek) is use protected and must support Aquatic Life Warm 2, Recreation N, and Agricultural uses. Water quality for the mainstem of the Little Snake River (from just above Powder Wash to the confluence with the Yampa River) must support Aquatic Life Warm 2, Recreation E, and Agricultural uses. As of 2010 the Little Snake River downstream of its confluence with Powder Wash (from Powder Wash to the Yampa River) is on the Colorado Department of Public Health and Environment's (CDPHE) Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2010).

Nipple Peak Allotment #04225 and Cross Mountain Allotment #04307
Runoff water from the majority of the allotments flows into the Little Snake River. Water quality for the mainstem of the Little Snake River (from just above Powder Wash to the confluence with the Yampa River) must support Aquatic Life Warm 2, Recreation E, and

Agricultural uses. As of 2010 the Little Snake River downstream of its confluence with Powder Wash (from Powder Wash to the Yampa River) is on CDPHE's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2010).

West Spring Creek Allotment #04438
Runoff water from the eastern portion of the allotment flows into Spring Creek, a perennial tributary to the Yampa River. Runoff water from the western portion of the allotment flows directly into the Yampa River. Water quality for all tributaries to the Yampa River (from below the confluence with Elkhead Creek to below the confluence with the Little Snake River) are use protected and must support Aquatic Life Warm 2, Recreation N, and Agricultural uses. Water quality for the mainstem of the Yampa River (from just below Elkhead Creek to its confluence with the Green River) must support Aquatic Life Warm 1, Recreation E, Water Supply, and Agricultural uses. As of 2010, the Yampa River segment in this area (from Elkhead Creek to Green River) is on CDPHE's Section 303(d) list of Water Quality Limited Segments because of a high priority total recoverable iron impairment and on the Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2010).

Greasewood Allotment #04521
Within most of the allotment, surface runoff flows into Greasewood Gulch, which is an ephemeral tributary of the Little Snake River. Surface runoff from a small portion of the northeasterly side of the allotment flows into Big Hole Gulch, another ephemeral tributary of the Little Snake River. Water quality for all tributaries of the Little Snake River (below its confluence with Fourmile Creek) is use protected and must support Aquatic Life Warm 2, Recreation N, and Agricultural uses. As of 2010 the Little Snake River downstream of its confluence with Powder Wash (from Powder Wash to the Yampa River) is on CDPHE Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2010).

In the southeasterly portion of the allotment, surface runoff flows into West Spring Creek and Bord Gulch. West Spring Creek is a tributary to Spring Creek which is a tributary to the Yampa River. Bord Gulch is a tributary to Lay Creek which is a tributary to the Yampa River. Water quality for all tributaries to the Yampa River (from below the confluence with Elkhead Creek to below the confluence with the Little Snake River) and for Lay Creek must support Aquatic Life Warm 2, Recreation N, and Agricultural uses. Water quality for all tributaries to the Yampa River in this area is use protected. As of 2010, the Yampa River segment in this area (from Elkhead Creek to Green River) is on CDPHE's Section 303(d) list of Water Quality Limited Segments because of a high-priority total recoverable iron impairment and on the Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2010).

Environmental Consequences, No Action and Preferred Alternatives: Livestock waste deposited in or near streams or entrained or dissolved in runoff reaching streams may contribute to nutrient (nitrogen, phosphorous) and bacteria (*E. coli*) exceedances in surface waters influenced by grazing allotments, although the source(s) of these pollutants, when present, can be

difficult to determine. Livestock use of surface waters may also contribute to increased suspended solids (soil particles, organic matter particles) and increased water temperatures by removing or trampling streamside vegetation when use is concentrated for extended periods of time or during certain times of year.

Water quality in grazing lands is primarily influenced by the duration, amount, and intensity of precipitation and livestock use, and landscape characteristics (topography, soils, vegetative cover). Perennial waters within or influenced by all the allotments are suspected of having sediment load issues, the source of which is unknown. However, soils and landscape morphology in several allotments, particularly those within Sand Wash Basin, are erosional in nature and thus a certain amount of sediment contribution to perennial waters is expected downstream under even the best land health conditions, particularly following precipitation runoff or wind events. Turbidity levels in the Little Snake and Yampa River drainages are some of the highest in the state, due to extensive, cohesive sediment sources. Even prior to modern land uses, these soils naturally provided a large suspended sediment load to perennial, regional watercourses.

Implementation of the proposed revised terms and conditions would maintain or improve overall rangeland health, including vegetative cover, where needed to prevent excessive and accelerated erosion that would contribute to suspected sediment issues further downstream. Livestock use of the allotments is predominantly in the winter when soils are frozen and least susceptible to damage by hoof action that could also contribute to sedimentation near perennial water. Given the minor changes between the No Action and Preferred Alternatives grazing and associated activities would not contribute to water quality problems regarding iron impairment.

Environmental Consequences, No Grazing Alternative: Although there are no identified water quality issues that are the result of livestock use within the affected area, potential direct and indirect impacts to water quality caused by livestock use, such as deposition and concentration of waste directly into the water body or trampling, trailing, overgrazing of streamside vegetation that may lead to increased sedimentation, would be eliminated under this alternative. This alternative has the potential to benefit overall water quality both within and downstream of the allotments.

Name of specialist and date: Emily Spencer, 02/9/11

Source: Colorado Department of Public Health and Environment Water Quality Control Commission. 2010. Regulations #33, 37, and 93. http://www.cdphe.state.co.us/regulations/wqccregs/index.html

Kansas State University Research and Extension. 2002. Kansas Grazing Land Water Quality Program: Understanding Grazing Land and Water Quality (pamphlet). www.kdheks.gov/nps/resources/**grazing**/attach2.pdf

WETLANDS/RIPARIAN ZONES

Affected Environment: Riparian resources within each allotment are described below:

Sand Wash Allotment #04219:

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition	41	
Functioning At Risk – condition improving	0.1	
Functioning At Risk – no trend in condition	2.9	Little Snake River R6: 1
Functioning At Risk – downward trend in condition	0.2	
Not Assessed	0.4	Little Snake River R6B: 0.2
TOTAL	**44.6**	**Little Snake River: 1.2**

Nipple Peak Allotment #04225:

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition	0.1	Little Snake River R25: 0.2
Functioning At Risk – no trend in condition		Little Snake River R23-24: 1.3
Not Assessed	0.1	
TOTAL	**0.2**	**Little Snake River: 1.5**

Cross Mountain Allotment #04307:

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition	0.4	Little Snake River R2-4: 2.7
Functioning At Risk – no trend in condition		Little Snake River R5-6: 1.3
Not Assessed	0.5	
TOTAL	**0.9**	**Little Snake River: 4**

West Spring Creek Allotment #04438:

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition	No resources identified	Sand Creek R1: 0.8 Spring Creek R3: 1
Functioning At Risk – no trend in condition	No resources identified	Spring Creek R2: 0.8
TOTAL		**Sand Creek: 0.8** **Spring Creek: 1.8**

Greasewood Allotment #04521:

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Functioning At Risk – condition improving		Little Snake River R22: 0.5
Functioning At Risk – no trend in condition	0.1	
Not Assessed	0.2	
TOTAL	**0.3**	**Little Snake River 0.5**

Environmental Consequences, No Action and Preferred Alternatives: The proposed grazing period is generally the same for most of the allotments (early November through May). Winter, or dormant-season, grazing use provides total growing season rest every year as there is normally little or no vegetation growth during winter. Soil compaction by trampling is minimized when soils are frozen during the winter, however soils can become compacted on thawed, moist soils during the spring. Livestock presence is minimized in lotic riparian areas during winter months, as livestock tend to avoid low, moist areas where cold air sinks. Spring grazing use can favor riparian areas as more palatable cool season upland vegetation peaks in growth, enabling riparian vegetation, particularly woody species, to remain largely ungrazed during a portion of the growing period. In addition, spring flooding along rivers and streams deters heavy use of these areas, which allows for carryover vegetation for bank protection and sediment trapping, where appropriate, during high-flow events. Overall, winter and spring use of riparian areas can provide more opportunity for plant recovery and regrowth than other times of year and also can result in more residual cover for bank/soil stability and wildlife habitat.

With the exception of BLM Spring 034-16, located in the northwest corner of the main Sand Wash pasture in the Sand Wash Allotment #04219, all riparian resources that have been assessed are meeting standards. Surface flows of spring 034-16 are adversely affected by cattle and, possibly, horses. Otherwise, water developments throughout the allotments appear to be adequately dispersed so as to reduce grazing pressure on the lentic riparian resources that are present. Allowing for cattle use in place of some sheep AUMs when authorized would not result in an increase in use of riparian areas under the proposed management. The proposed Special Terms and Conditions addressing movement of livestock through the allotments would maintain or improve riparian resource conditions.

Environmental Consequences, No Grazing Alternative: Removing cattle from the allotments would likely improve riparian and wetland resource conditions over the long-term. A decrease in herbivory on riparian vegetation and trampling pressure caused by livestock in riparian areas would increase soil moisture and reduce the potential for erosion and any associated changes to channel geomorphology and wetland form/function, particularly in low and moderate gradient stream where the presence of riparian vegetation is one of the most important factors in maintaining stability. In ephemeral channels and wetlands, eliminating livestock grazing pressure would also maintain or raise seasonal water tables during the dry season to a point where facultative and obligate riparian plant species are able to persist or even expand, thereby further increasing channel stability. However, these benefits may not fully be realized if the riparian resource is used by wild horses and/or wildlife, particularly large ungulates, since wildlife can also have similar impacts to riparian resources during periods of heavy use or drought. Also, livestock grazing on adjacent private and other non-federal lands would continue to produce direct effects to riparian resources that may indirectly affect riparian resources on federally managed lands.

Name of specialist and date: Emily Spencer, 02/10/11

WILD & SCENIC RIVERS

Affected Environment: There are no federally listed Wild and Scenic Rivers present on any of the affected allotments.

Environmental Consequences, No Action and Preferred Alternatives: None

Environmental Consequences, No Grazing Alternative: None

Name of specialist and date: Gina Robison, 02/01/11

WSAs, WILDERNESS CHARACTERISTICS

Affected Environment: Portions of the No Action and Preferred Alternatives occur within the Cross Mountain Wilderness Study Area (WSA). BLM WSA Interim Management Guidelines require that project actions result in no irreversible or irretrievable harm to wilderness values. Livestock grazing, where already established, is permitted.

Environmental Consequences, No Action and Preferred Alternatives: None of the alternatives would negatively impact the Cross Mountain WSA. No irreversible or irretrievable harm to wilderness values in the WSA would occur. Surface disturbing actions (including new fences and stock ponds) are not proposed within the WSA. Implementation of either alternative would enhance naturalness through appropriate management of grazing activities.

Environmental Consequences, No Grazing Alternative: While a no grazing alternative alleviates potential damage from livestock activities, such as the spread of noxious weeds, trampling, and cultural damage within the Cross Mountain WSA, other uses in the area including wildlife and recreation users would still provide an avenue for impacts to WSA characteristics.

Name of specialist and date: Gina Robison, 02/01/11

NON-CRITICAL ELEMENTS

SOILS

Affected Environment: The tables below describe the major soil groups and general conditions present within the allotments.

Soil Summary for Nipple Peak (#04225) and Greasewood (#04521) Allotments

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 130 Maysprings coarse sandy loam, 3 to 12 % slopes 9,346 acres	*Elevation:* 6,200 to 7,300 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam	These toeslope soils are well drained with moderate permeability and medium runoff potential. Available water capacity is low and the soil profile is typically 18 to 60 inches deep.
MU 173 Ryark-Powderwash complex, 2 to 15% slopes 7,498 acres	Elevation: 6,100 to 6,800 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam	These bench/hillslope soils are well to somewhat excessively drained with very slow to moderately rapid permeability and low to high runoff potential. Available water capacity is low and the soil profile is typically up to 38 to 60 inches deep.
MU 131 Maysprings-Gretdivid complex, 10 to 20% slopes 5,716 acres	*Elevation:* 6,200 to 7,200 feet Mean annual precipitation: 11 to 13" Ecological Site: Sandyland	These soils are well to somewhat excessively drained with moderate permeability and medium runoff potential. Available water capacity is low and the soil profile is typically 18 to 60 inches deep.
MU 168 Ruedloff sandy loam, 1 to 8% slopes 5,660 acres	Elevation: 6,000 to 6,300 feet Mean annual precipitation: 9 to 11" Ecological Site: Sandy	These toeslope soils are somewhat excessively drained with moderately rapid permeability and low runoff potential. Available water capacity is low and the soil profile is typically up to 60 inches deep, comprised of sandy loam and loamy course sand.
MU 199 Torriorthents-Torripsamments complex, 12 to 40% slopes 5,040 acres	*Elevation:* 6,000 – 7,200 feet Mean annual precipitation: 9-13" Ecological Site: none given	These hillslope soils are well to excessively drained with moderately slow to rapid permeability and high runoff potential. Available water capacity is very low and the soil profile is typically 19-30 inches deep.
MU 174 Ryark-Maybell complex, 1 to 12% slopes 3,814 acres	Elevation: 6,100 to 6,700 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam/Sandhill	These plateau soils are somewhat excessively to excessively drained with moderately rapid to rapid permeability and very low to low runoff potential. Available water capacity is low and the soil profile is typically up to 60 inches deep.

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 198 Torriorthents-Rock outcrop, shale complex, 30 to 75% slopes 3,279 acres	*Elevation:* 6,000 – 7,200 feet Mean annual precipitation: 9-11" Ecological Site: not given	These soils are well drained with slow permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0 to 12 inches deep. Land capability classification states these (nonirrigated) soils are also suitable for recreational, watershed, and aesthetic purposes.
MU 162 Rock River sandy loam, 3 to 12% slopes 2,922 acres	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam	These soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile is typically up to 60 inches deep.

Data taken from Soil Survey of Moffat County Area, Colorado (2004)

Medium to deep sandy loams dominate the allotments. Soil permeability is low to moderate. The potential for runoff is variable across the allotments, however available water capacity (the ability of soil to store/retain water) is low (common in sandy loam soils). This can mean that, when combined with low permeability rates, the potential for runoff during precipitation events is generally high. Soils in the Nipple Peak #04225 and Greasewood #04521 allotments are moderately stable. Presence of plant pedestals, rills, and litter amount and distribution are not ideal and there is one instance and evidence of overland flow was detected. Overall, however, vegetation canopy and cover are adequate to protect from accelerated erosion. Biological soil crusts are present where appropriate and intact in both allotments. More recently, the majority of BLM lands in the eastern portion of the Greasewood Allotment #04521 have been rested for the last two growing seasons following the 2008 Mayberry Fire. The burned area is now dominated by perennial grasses with high cover and diverse composition to protect against soil movement.

Soil Summary for Sandwash (#04219) and Cross Mountain (#04307) Allotments

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 196 Torriorthents-Baston complex, 3 to 12% slopes 12,007 acres	*Elevation:* 6,000 – 7,000 feet Mean annual precipitation: 9-11" Ecological Site: Shale	These backslope and footslope soils are well drained with moderate permeability and medium to low potential for runoff. Available water capacity is low to very low and the typical profile is 12 to 32" deep of stony loam and silty clay soils to weathered bedrock. These soils are limited mainly because they are shallow, stony, or droughty.

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 90 Grieves-Crestman complex, 10 to 40% slopes 7,719 acres	*Elevation:* 6,000 to 7,200 feet Mean annual precipitation: 11 to 12” *Ecological Site:* Sandy Foothills and Sandy Juniper	These soils are somewhat excessively to excessively drained with moderately rapid permeability and medium to very high runoff potential. Available water capacity is very low to moderate and the soil profile is typically 18 to 60 inches deep.
MU 119 Langspring sandy loam, 3 to 12% slopes 7,582 acres	Elevation: 6,000 to 7,000 feet Mean annual precipitation: 9 to 11” Ecological Site: Loamy 7-10" PPT	These plateau soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile it typically up to 60” deep, comprised mostly of sandy clay loam. The main hazard in these soils is erosion unless close-growing plant cover is maintained.
MU 195 Torriorthents, 12 to 25% slopes 6,547 acres	*Elevation:* 6,000 – 7,000 feet Mean annual precipitation: 9-12” Ecological Site: none	These breaks soils are well drained with moderate permeability and medium potential for runoff. Available water capacity is very low and the typical profile it up to 12” deep of stony loam soils to weathered bedrock. These soils are limited mainly because they are shallow, stony, or droughty.
MU 186 Talamantes loam, 0 to 6% Slopes 5,131 acres	*Elevation:* 6,200 – 7,200 feet Mean annual precipitation: 9-11” Ecological Site: Silty Swale	These alluvial fan soils are well drained with moderately slow permeability and low runoff potential. Available water capacity is high and the soil profile is typically up to 60 inches deep.
MU 199 Torriorthents-Torripsamments complex, 12 to 40% slopes 4,198 acres	*Elevation:* 6,000 – 7,200 feet Mean annual precipitation: 9-13” Ecological Site: none given	These hillslope soils are well to excessively drained with moderately slow to rapid permeability and high runoff potential. Available water capacity is very low and the soil profile is typically 19-30 inches deep.
MU 157 Rentsac-Moyerson complex, 25 to 65% slopes 3,872 acres	*Elevation:* 6,000 to 6,800 feet Mean annual precipitation: 11-13” Ecological Site: Juniperus osteosperma-Pinus edulis/ Pleuraphis jamesii	These soils are well to somewhat excessively drained with slow to moderately rapid permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 14-21 inches deep.
MU 160 Rock outcrop-Torriorthents complex, 50 to 75% slopes 3,367 acres	Elevation: 5,900 to 8,000 feet Mean annual precipitation: 9 to 16” Ecological Site: not given	These backslope soils are well drained with moderate permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0-18 inches deep.

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 95 Haterton-Piezon complex, 3 to 12% slopes 3,338 acres	*Elevation:* 6,100 to 7,200 feet Mean annual precipitation: 9 to 11” *Ecological Site:* Alkali upland and Rolling loam	These plateau and hillslope soils are well drained with moderate permeability and medium to high runoff potential. Available water capacity is very low to low and the soil profile is typically 20 to 27 inches deep, composed of loam and channery loam.
MU189 Tipper-Crustown complex, 10 to 40% slopes 3,313 acres	*Elevation:* 5,400 to 6,000 feet Mean annual precipitation: 7 to 10” Ecological Site: Semidesert Juniper	These soils are excessively drained with rapid permeability and high to very high runoff potential. Available water capacity is very low and the soil profile is typically 14 to 32 inches deep.

Data taken from Soil Survey of Moffat County Area, Colorado (2004).

Shallow, stony loam soils dominate the allotments. Available water capacity is low, which is common in shallow, loam soils. Soil permeability is moderate and the potential for runoff is medium to high across the allotments. Steep slopes across much of the Cross Mountain Allotment #04307 restrict livestock access in those areas. Soils in the Sand Wash Allotment #04219 are relatively stable. Plant pedestalling and compaction is present and the amount and distribution of bare ground and litter is not ideal. Overall, however, vegetation canopy and cover are adequate to protect from accelerated erosion. Biological soil crusts are present where appropriate and intact in both allotments. Soils on the Cross Mountain Allotment #04307 are healthy, but some areas on the east side of the allotment show signs of pedestalling, compaction and poor litter distribution.

Soil Summary for West Spring Creek Allotment (#04438)

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 90 Grieves-Crestman complex, 10 to 40% slopes 4,864 acres	*Elevation:* 6,000 to 7,200 feet Mean annual precipitation: 11 to 12” *Ecological Site:* Sandy Foothills and Sandy Juniper	These soils are somewhat excessively to excessively drained with moderately rapid permeability and medium to very high runoff potential. Available water capacity is very low to moderate and the soil profile is typically 18 to 60 inches deep.
MU 170 Ryan Park loamy sand, 3 to 15% slopes 2,477 acres	Elevation: 5,800 to 6,800 feet Mean annual precipitation: 11 to 13” Ecological Site: Sandy Foothills	These alluvial fan soils are somewhat excessively drained with moderately rapid permeability and low runoff potential. Available water capacity is moderate and the soil profile is typically up to 60” deep, composed of sandy loam and loamy sand.

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 162 Rock River sandy loam, 3 to 12% slopes 1,684 acres	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13” Ecological Site: Rolling Loam	These soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile is typically up to 60 inches deep.
MU 47 Coyet-Crestman, moist complex, 20 to 50% slopes 1,153 acres	*Elevation:* 6,000’ – 7,200’ Mean annual precipitation: 13-14” *Ecological Site:* Sandy Foothills and Loamy Breaks	These hillslope soils are excessively drained with moderately rapid permeability and medium to very high runoff potential. Available water capacity is low to very low and the soil profile is typically 18 to 52” inches deep, composed mostly of loamy sand, sand, and gravelly loamy sand.

Data taken from Soil Survey of Moffat County Area, Colorado (2004)

Deeper sandy loams over rolling foothills dominate the allotment. Soil permeability and potential for runoff is moderate. Available water capacity is low to moderate. Surface soil characteristics are stable with a good grass canopy to help protect from accelerated erosion. There is little to no evidence of erosion in the form of gullies, pedestals, flow patterns, or compaction.

Environmental Consequences, Preferred Alternative: Soils within most of the allotments are sandy loams, which are the least susceptible to disturbance and wind/water erosion when frozen or snow covered or when wet or moist (late fall through early spring). The proposed grazing period for most of the allotments (early November through May) coincides with these seasons.

Winter, or dormant-season grazing, provides total growing season rest every year. Normally, there is little or no vegetation growth during winter, so grazing affects plants less. Winter use is usually the least detrimental to soils (especially where they are frozen) and to dormant herbaceous vegetation.

However, winter use also has the potential to remove excessive amounts of vegetation and litter cover just prior to spring snow melt and runoff, which could lead to accelerated soil erosion. Revised Special Term and Condition #3, which requires an increase in canopy cover and residual grass height during the nesting season where sage-grouse nesting potential is good, would also have the indirect benefit of improving overall soil stability following winter grazing use.

The proposed pond construction in the Greasewood Allotment #04521 to replace a nonfunctional well would help maintain livestock distribution, since cattle rotation in this allotment would be done with water wells and currently there no water source to replace the non-functional well. Pond construction stipulations would mitigate any long-term impacts to soils.

Given the overall good condition of the vegetation within the allotments, season of use, revised Special Terms and Conditions, and herding/movement of livestock within the allotments, the

proposed action would maintain sufficient plant cover to both protect the soil surface from wind and water erosion and allow the plant community to continue to produce litter in sufficient amounts to maintain litter and sustain appropriate water permeability.

Environmental Consequences, No Action: Not implementing the revised terms and conditions that address residual canopy cover and height and herding/rotation adjustments within and between allotments would eventually lead to inadequate vegetative cover following winter livestock use that would negatively affect soil stability and function. Not developing the proposed pond in the Greasewood Allotment would limit the ability to rotate cattle through the allotment and could negatively affect livestock distribution within the allotment. Overall soil stability may continue to be average or even decline in areas that already have been identified as having erosion and pedstalling issues.

Environmental Consequences, No Grazing Alternative: Removal of livestock from public lands would lead to decreased hoof compaction of soil surfaces, especially in riparian areas where livestock tend to congregate, particularly during the summer and in steep areas. Over time the lack of compaction, combined with the annual freeze-thaw cycle, may lead to a decrease in soil bulk density and improved soil moisture conditions, which facilitates vegetation germination and root development. Removing livestock would also result in an increase of both plant litter and live vegetative ground cover that would provide more protection from wind and water erosion. Livestock trails and the resulting erosion would heal over time.

If grazing were to continue on adjacent privately or other non-federal lands in the allotments, fences would have to be built by the landowner(s) to prevent trespass onto federally-managed lands. Given the natural tendency of cattle to congregate and trail along fence lines, it is likely that paths and forage depletion would occur along the fences. The resulting decrease in canopy cover would fail to decrease the impact of raindrops on the soil surface, while the expected increase in compaction would increase runoff from both rain and snowmelt. These factors would combine to increase the likelihood of both wind and water erosion in the areas adjacent to fences. This may result in blowouts and gullies which could indirectly impact federal lands through deposition or by the eroded area actually spreading onto federal lands.

Name of specialist and date: Emily Spencer, 02/10/11

UPLAND VEGETATION

Affected Environment:

Sand Wash Allotment #04219
This allotment contains large areas of saltbush-dominated plant communities which give way to big sagebrush-dominated communities at higher elevations. The northerly, westerly, and southerly edges of the allotment are high ridges that are primarily juniper woodlands.

This allotment is dominated by sagebrush-grass and salt desert shrub plant communities. The two communities are intermixed and form a complex of range sites with saltbush dominating on the clayey sites and sagebrush dominating on the loamy sites. There is also a small amount of juniper woodland in the northerly and westerly portions of the allotment. Dominant shrub species include Wyoming big sagebrush, shadscale, Nuttall's saltbush, winterfat, green rabbitbrush, budsage, basin big sagebrush, greasewood, and gray horsebrush. Dominant grass species include needleandthread, Indian ricegrass, bottlebrush squirreltail, Sandberg bluegrass, western wheatgrass, bluebunch wheatgrass, and prairie junegrass. Dominant forbs include stemless goldenweed, buckwheat, *Penstemmon* spp., *Astragalus* spp., *Lupinus* spp., Hood's phlox, and arrowleaf balsamroot. Cheatgrass and halogeton are present in varying levels throughout the allotment. Vegetation density and productivity increase towards the northerly end of the allotment due to increasing elevation and precipitation.

Nipple Peak Allotment #04225
The plant communities on this allotment are a mixture of Wyoming sagebrush-dominated communities and saltbush-dominated communities. On many sites, these shrubs are co-dominant. Dominant species include Wyoming big sagebrush, bud sagebrush, Nuttall's saltbush, shadscale, horsebrush, bluebunch wheatgrass, western wheatgrass, Indian ricegrass, prairie junegrass, squirreltail, needle-and-thread, and Sandberg bluegrass. Noxious weeds, cheatgrass and halogeton are present, and dominant in the SE corner of the allotment, and can readily invade many of these desired communities.

Cross Mountain Allotment #04307
The Cross Mountain Allotment primarily consists of sagebrush/grass, interspersed with saltbush. Juniper dominates on the upper elevations with a sparse understory. Dominant species in the sagebrush-dominated communities are Wyoming big sagebrush, green rabbitbrush, western wheatgrass, needle-and-thread, prairie junegrass, and Sandberg bluegrass. Many sites on shallower soils exhibit communities with co-dominant sagebrush and saltbush. Common species in these communities are Wyoming big sagebrush, shadscale, Nuttall's saltbush, Indian ricegrass, squirreltail, and bluebunch wheatgrass.

The steeper slopes of Cross Mountain and areas west of the Little Snake are dominated by juniper woodlands. These sites tend to be less accessible to livestock and generally produce far less forage than shrub-dominated communities, but they provide important wildlife habitat. These communities are dominated by Utah juniper, Indian ricegrass, bluebunch wheatgrass, and needle-and-thread.

West Spring Creek Allotment #04438
The public lands within this allotment contain a preponderance of steeper slopes that are dominated by Utah juniper woodlands. Sagebrush-dominated communities are present along most of the drainages below the steeper, wooded slopes. Within the juniper woodlands, dominant plants present include Utah juniper, Indian ricegrass, bluebunch wheatgrass, and needle-and-thread. Cheatgrass readily invades these sites and is present at varying levels. The sagebrush-dominated communities are characterized by Wyoming big sagebrush, basin big

sagebrush, green rabbitbrush, shadscale, Hood's phlox, penstemmon, western wheatgrass, needle-and-thread, squirreltail, prairie junegrass, and Sandberg bluegrass. The bulk of livestock forage is provided by the sagebrush-dominated communities.

Greasewood Allotment #04521
The plant community most prevalent across the Greasewood Allotment consists of Wyoming big sagebrush, Hood's phlox, western wheatgrass, Indian ricegrass, needle-and-thread, squirreltail, western wheatgrass, prairie junegrass, and Sandberg bluegrass. Depending upon levels of past disturbance, these sites may also be composed of large amounts undesirable species such as green rabbitbrush, prickly pear cactus, and cheatgrass particularly if fire has been excluded for many years. In August, 2008, a wildfire burned the eastern one third of this allotment. The fire burned hot and completely consumed most of the above-ground biomass within this plant community, resulting in grasses and forbs dominating the burned area.

Greasewood Gulch bisects the allotment. This large drainage, along with other, similar drainages is dominated by a greasewood-basin wildrye plant community. Dominant plants in this community include black greasewood, Wyoming big sagebrush, Louisiana sagewort, fourwing saltbush, western yarrow, scarlet globemallow, Indian ricegrass, western wheatgrass, streambank wheatgrass, and basin wildrye.

Environmental Consequences, No Action and Preferred Alternative:

Sand Wash Allotment #04219
Livestock grazing, particularly by sheep, within the last ten years has not approached the full use authorized on the permit; therefore, it is difficult to ascertain the full effect of grazing this allotment at that level. Winter sheep and wild horse use require shrubs for browse forage more so than herbaceous vegetation, thus creating a dietary overlap. Sheep are herded in concentrated areas, are moved often, and don't use the same areas every year; horses are in small groups (approximately 7-10 animals) and have unlimited access of the HMA both inside and outside of the allotment. These different use patterns balance the overall browse utilization on the allotment. Current monitoring data shows when wild horses are managed at populations within the appropriate management level (AML) of 163 to 362 animals, the plant community would support livestock grazing at fully-permitted levels without adversely affecting long-term productivity and watershed protection.

Nipple Peak #04225, Cross Mountain #04307, and West Spring Creek Allotment #04438
Monitoring has shown that livestock grazing at the current stocking rates and seasons of use are appropriate on all of these allotments. The plant communities have retained their diversity and vigor while providing both good soil cover and adequate wildlife habitat under existing grazing management. For the Nipple Peak Allotment #04225, continued avoidance of grazing in the southeast corner (T10N R96W, Sections 21-23, 27) due the abundance of halogeton and cheatgrass is appropriate and would prevent further degradation of this area.

Greasewood Allotment #04521
The Mayberry Fire and subsequent recovery has greatly altered the forage base on this allotment. As a result, grazing will be in a community dominated nearly completely by grasses, including cheatgrass. Grazing on this allotment would favor the use of this area in the long run, increasing the need to use herding and water manipulation practices to ensure that the burn areas are not excessively utilized, particularly in the spring. Proposed pond construction would aid in livestock distribution, and have short term disturbance of vegetation during construction. Grazing within the constraints of the permit would maintain grass dominance in the short term, but shrubs would eventually invade and co-dominate. This progression would occur with or without livestock grazing, but may be accelerated under the No Action or Preferred Alternatives.

Environmental Consequences, No Grazing Alternative: The removal of livestock from the areas of proposed action would provide the most immediate benefit to herbaceous vegetation although it would also have the potential to reduce active management prioritization on federal lands within the areas of proposed action, thus, reducing the potential for vegetation management that would be beneficial to ecosystem health. In addition, an increase in fine fuel loading and littler accumulation can result in hot and intense wildfires that would be detrimental to wildlife, habitat, take longer to recover, and possibly initiate a negative change in species composition.

Name of specialist and date: Mark Lowrey, 01/20/11

WILDLIFE, AQUATIC

Affected Environment: The Little Snake River flows through portions of the Cross Mountain, Sand Wash, Nipple Peak and Greasewood Allotments. This river contains habitat for a variety of non-game fish species and may contain habitat for crawfish and various amphibian species.

Environmental Consequences, No Action and Preferred Alternative: Livestock would use these allotments relatively the same as they have been for the previous ten years. The previous ten years use have either resulted in improvements to riparian systems or maintained their condition. There would be no adverse affects.

Environmental Consequences, No Grazing Alternative: Elimination of livestock grazing would result in improved riparian conditions and may improve ecological condition. As conditions improve, the health, vigor and abundance of forage species would increase. The probable increase in grass and forb availability would enhance habitat quality for aquatic wildlife.

Name of specialist and date: Gail Martinez, 02/01/11

WILDLIFE, TERRESTRIAL

Affected Environment: These allotments provide year round habitat for pronghorn antelope, mule deer and elk. Pronghorn antelope severe winter habitat can be found on public lands along the Little Snake River corridor. Mule deer and elk severe winter range can be found within all five of these allotments. A variety of small mammals, song birds and reptiles may be found within these allotments as well. Cross Mountain Allotment # 04307 contains habitat for bighorn sheep. Currently the area within the Cross Mountain Allotment that is mapped by the Colorado Division of Wildlife (CDOW) as bighorn sheep habitat is not occupied with bighorn sheep per phone conversation with CDOW Terrestrial Wildlife Biologist Darby Finley on February 7, 2011. Conflicts between domestic sheep and native wild sheep would not occur since there are currently no bighorn sheep in the area or within the nine mile buffer strip required by the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Habitats (IM No. 98-140).

Environmental Consequences, No Action and Preferred Alternative: Either alternative would ensure that wildlife habitats remain capable of supporting healthy productive wildlife populations. Big game animals would not be directly impacted from livestock grazing. There is a potential that ground nesting songbirds using these allotments could have nests destroyed by livestock. This is unlikely to occur frequently and would not have a negative impact on any species population.

Environmental Consequences, No Grazing Alternative: Under the No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the inability to control livestock use of the parcels because of the expense of segregating the lands with fencing, and legal access to administer isolated parcels of public land. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts.

Name of specialist and date: Gail Martinez, 02/01/11

WILD HORSE AND BURRO MANAGEMENT

Affected Environment: The majority of the Sand Wash HMA lies within two grazing allotments; Sand Wash and Sheepherder Springs. The main pasture in the Sand Wash Allotment #04219, Sand Wash Pasture, encompasses 62,246 acres out of 158,203 total acres of the Sand Wash HMA, or 39% of the HMA. Smaller acreage of the HMA lies within the Nipple Rim #04213 and Lange Spring #04212 Allotments. The HMA supports large game (primarily pronghorn antelope and elk), smaller wildlife species and wild horses year round.

The appropriate management level (AML) of 163 to 362 wild horses was established in the 2001 Sand Wash Wild Horse Environmental Assessment/Gather Plan (CO-100-2001-044). The 2001 Plan set a management range of 163 to 362 wild horses and recognized that this range would be managed on a four year gather schedule. This EA identified the high end of the management range, 362 horses, as the AML. A subsequent EA (CO-100-2005-051) prepared for the 2005 gather, clarified that the AML was a range of 163 to 362 wild horses with each gather having the goal of reducing the population down to the low end of AML, 163 horses. EA CO-100-2008-050, prepared for a gather that took place in October of 2008 re-affirmed the AML based on the monitoring of range and vegetation conditions. Based on the established AML, wild horses within the Sand Wash HMA can be expected to utilize between 1,956 (low end of AML) and 4,344 (high end of AML) AUMs of forage annually.

For the past two decades, the BLM has partnered with the Humane Society of the United States (HSUS) to develop a fertility control vaccine that is effective, would not pass through the food chain, was easy to administer and not unreasonably expensive. Porcine zona pellucida or PZP seemed to fit these criteria.

Beginning in the summer of 2008, the LSFO BLM entered into a collaborative fertility control research effort with HSUS. The goals of this effort were threefold: to determine the effects of the 22-month PZP vaccine on the population's foaling and growth rate; to determine the effects of a PZP booster administered remotely in year 3 on the fertility of individually treated mares and on the population's foaling and growth rates and; to determine the effects of PZP treatments on the health and social dynamics of treated bands.

For approximately seven months per year beginning in 2008, HSUS has had one to two employees studying the horses in the Sand Wash Basin. The 22-month PZP was injected into every released mare after the gather in the October 2008. In the fall of 2010, those same mares were given a booster shot of PZP via a dart gun. In 2011 and in 2012, HSUS will again study the mares to determine the effects on foaling rates, check for injection site reactions and to determine what if any effects to social dynamics exist as a result of the PZP.

Wild and domestic ungulates rely on browse plant species for much of their nutritional needs during the winter months. While the majority of shrub species contain high levels of protein in their twig tips and leaves, Nuttall's saltbush is the most palatable of the browse plants and so is often the most heavily impacted by grazing animals. During mild winters or winters with below average or average snow accumulation, key islands of localized saltbush communities can receive high utilization from the various users. During harsh winters and periods of high snow accumulation, Wyoming big sagebrush and salt desert shrub species receive the highest use. The heaviest competition between all range users occurs during the early spring when increased dietary needs associated with birthing and breeding are further increased by low body fat reserves, and low nutritional content of plant species in the early spring. During the spring and summer, wild horse diets consist primarily of native perennial grasses such as Indian ricegrass, bottlebrush squirreltail, western wheatgrass and needleandthread grass. However, some of the white sage dominated plant communities do receive year-long use by wild horses, but the horses

seem to be selective when in the white sage flats during the spring and summer, concentrating their use on perennial grass species. They begin to utilize white sage about the same time as livestock.

While the majority of the HMA boundary is fenced, horses in the Sand Wash herd roam freely through their range with no internal fencing or impassible topographic features to limit their movements. Census data collected over the past several years have shown that horses tend to concentrate in the southern portion of the HMA during the winter months and disperse to the more mountainous areas in the western and north western portion of the HMA in the summer months.

Horses, livestock and wildlife in the HMA rely on a combination of developed wells, undeveloped springs and seeps and water reservoirs. Reservoirs are the primary source of water for all users and are widely dispersed through the HMA. In years when the HMA experiences below average precipitation, the majority of ponds dry up between July and whenever measurable precipitation accumulates in the fall. This results in wildlife either leaving the HMA or competing with wild horses for remaining water sources.

Monitoring Data

Census Data:

Date of Census	Number of Adults	Number of Foals	Total Number
1995	455	n/a	455
2006	276	n/a	276
5/18/07	281	34	315
7/16/07	328	64	392
10/12/07	386	n/a	386
07/24/08	359	52	411
10/22/08[1] Gather	162	n/a	162
02/20/09	170	58	228
11/15/10[2]	245	44	289

1 – This was the number of horses known to be returned to the HMS post gather.

2 – This was the number of horses known to HSUS to be within the HMA.

Actual use:

Actual use by wild horses in the Sand Wash HMA, based on census flights and estimates:

Year	Number of Horses	AUMs
2001	163	1,956
2002	199	2,388
2003	243	2,952
2004	296	3,552
2005	311	3,732
2006	163	1,956
2007	332[1]	3,980
2008	411	4,932
2009	228	2,736
2010	289	3,468
		Average actual use – 3,165

1 – This figure is an average based on numbers of horses counted in the HMA over three census flights in 2007. Horse numbers were most likely not reduced to the low end of AML during the fall 2005 gather.

Environmental Consequences, No Action and Preferred Alternative: Forage production within the Sand Wash Pasture is limited and must be shared among wild horses, wildlife and livestock. ESI data has indicated that there are 4,961 AUMs available within the Sand Wash Pasture. The Sand Wash Pasture encompasses 39% of the HMA. Utilization data supports the theory that wild horses utilize the HMA evenly, it would be expected that the horses would consume an average of 1,234 AUMs from the Sand Wash Pasture annually (39% of 3,165 AUMs average actual use throughout the HMA). This would leave 3,727 AUMs available for livestock and wildlife use; however, livestock are permitted to use 6,377 AUMs of forage on an annual basis (11/15 through 5/15) within the Sand Wash Pasture of the Sand Wash Allotment. Because the level of grazing over the past ten years has yet to come close to the maximum permitted use, assessing the potential impacts of livestock at the full permitted use is not possible. Common Terms and Conditions place utilization limits of 50% on herbaceous and 40% on browse species. With these limits stocking the allotment with full livestock preference for the full season of use would not be achievable. Until updated data is available to support change in permitted use, maintaining livestock use similar to the past ten years and maintaining wild horses within the appropriate management level would support attainment of land use plan objectives and maintain standards for rangeland health. Implementation of either alternative along with maintaining wild horses at the appropriate management level would result in a thriving, natural, ecological balance between horses and other resource values.

Environmental Consequences, No Grazing Alternative: The removal of livestock from the HMA would provide the most benefit to herbaceous vegetation and forage available for wild horses. However, because the water developments and fence projects in the Sand Wash Allotment are maintained by the permittee, it is likely that the maintenance of these projects would fall to the BLM. The BLM is not currently budgeted or staffed to undertake the maintenance of numerous range improvement projects, so it is possible that some of the projects

could fall into disrepair. Horses may find breaks in the HMA fence and leave the herd area. The BLM is mandated by law to consider the management of wild horses in the area where they were found at the passage of the Wild Horse and Burro Act in 1971, thus those animals that leave the HMA would likely be gathered and removed from the range.

At present, the wild horses within the Sand Wash HMA rely on three working water wells and several dozen pit reservoirs. Two of the wells are currently maintained by the BLM, while the remaining well and all of the pit reservoirs are maintained by the grazing permittees. Should the grazing permits be cancelled within the Sand Wash HMA, many water sources could vanish.

The cancellation of the grazing permit in the Sand Wash Allotment would also create a negative impact in reduced on the ground efficiency of BLM personnel. BLM administration of federally authorized livestock grazing is often the best, and sometimes the only, monitoring, observation, and recognition of potential and existing resource concerns of public rangeland ecological conditions.

Name of specialist and date: Kathy McKinstry, 01/24/10, Mark Lowrey, 01/20/11

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Elements	N/A or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals	MDW 03/23/09		
Forest Management	JHS 08/24/09		
Hydrology/Ground		MDW 03/23/09	
Hydrology/Surface		ELS 11/09/10	
Paleontology		MDW 03/23/09	
Range Management		ML 10/29/10	
Realty Authorizations		LM 03/16/09	
Recreation/Travel Mgmt		GMR 03/16/09	
Solid Minerals		JAM 03/23/09	
Visual Resources		GMR 03/16/09	
Wild Horse & Burro Mgmt			KM 11/17/10

CUMULATIVE IMPACTS SUMMARY:

These allotments and areas surrounding have historically been grazed by both sheep and cattle. Cattle ranching first came into NW Colorado during the mid 1800's. Sheep ranching came into the region around 1910 and competed well with cattle due to the favorable economic position of sheep. The balance of the two livestock classes has evolved very little since the first half of the 20th century. During this early agricultural era the area of proposed action was within the US Grazing Service - Grazing District #6. A 1935 US Forest Service publication identified (in general) the area north of the Yampa River and west of the Little Snake River as winter sheep range (Sand Wash #04219, Nipple Peak #04225, and Cross Mtn #04307 Allotments). And areas north of the Yampa River and east of the Little Snake River as spring, summer and fall cattle and sheep range (Greasewood #04521 and West Spring Creek #04438 Allotments). The Greasewood Allotment is 51% public land intermixed with private and State Land Board Lands, the majority of the entire area south and west of Greasewood in which the other allotments under the proposed action are located are public lands administered by the BLM. It is not anticipated that land use, emphasizing agricultural practices, in any of the surrounding areas, public or private lands, will experience drastic changes outside of previous and or current use, or be abolished in the foreseeable future.

The Sand Wash Wild Horse Herd formation occurred toward the end of the establishment of livestock grazing in the region during the first half of the 19th century. According to both written and oral historical records, there were four very large open range ranches in northwestern Colorado and south central Wyoming which ran several thousand horses. Following WWI, these ranches along with dozens of other open range operations went broke, and their horses were left to go wild. Prior to WWI, Moffat County experienced the Great Divide land boom in which hundreds of homesteaders took up land claims. After the war, farm markets crashed and a series of drier than normal years caused many homesteaders to fail and abandon their land. They turned their horses loose and by 1930, Moffat County was "overrun" with domestic horses that had gone wild. To control the herds, anyone who so desired could shoot and kill the horses, or trap them and sell them to slaughter plants in Utah and Texas. The government was offering a bounty for wild horses; "mustanging" became a lucrative business. Cecil Conner and Boyd Walker moved to Two Bar Spring in the present day Sand Wash HMA (Sand Wash Allotment #04219) and built a large horse corral and trap. To cover their expenses they needed to catch a "car load of horses a week" or 250 to 300 horses per year. Horse trapping and removals continued in Sand Wash in this manner through the 1950's. (This brief history was summarized by Paul Bonnifield, a local historian from Yampa, Colorado.)

The Sand Wash HMA was established in the 1977 Vermillion Management Framework Plan. The HMA boundaries and numbers were further defined in the 1982 Sand Wash Herd Management Plan and the 1986 Little Snake Resource Management Plan. The appropriate management level was established at 160 horses. In 2001, the AML was again redefined to incorporate a range of numbers to be managed, from a low end of 163 to a high end of 362. Having a range of population size allows the herd to fluctuate, based on current conditions. Management of the Sand Wash HMA and horse population will continue to be managed to keep

horse numbers within the range of the AML. BLM budgets for the management for wild horses have been deficient throughout the history of the BLM Wild Horse Program, although recent developments that resulted in national focus and direction concerning wild horse management may change the management approach within the wild horse program. It is not anticipated that the Sand Wash Herd AML levels would change or would the herd be extirpated.

Wildlife populations in the area are high, especially for deer and elk that compete with livestock for available forage throughout the area. During sever winters when natural forage is not available due to snow pack, big game tend to congregate on private lands along the US Hwy 40, Yampa River, and Little Snake River corridors impinging on private land livestock winter feeding grounds. The Colorado Division of Wildlife has and will continue to supplement feed big game under these circumstances to mitigate private land wildlife/livestock conflicts and sustain the herds. For the areas of proposed action managed by the BLM, annual and seasonal fluctuations and variables eliminate predictable future needs for wildlife management and all future management actions imposed by the BLM will take wildlife needs into consideration.

Cumulative impacts to soils and watersheds associated with livestock grazing accrue over time and are additive on a landscape scale. The Yampa River, influenced downstream by some of the allotments, is listed on the Colorado Department of Public Health and Environment's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load. The source of the sediment issues is unknown; however, many geographic basins within the Little Snake Field Office, including the Sand Wash Basin, are erosional in nature, regardless of past, current, and future land use. With this known, the proposed modifications to livestock distribution and management may help improve riparian areas and limit water quality degradation to the extent possible. However, the major causes of landscape modifications in the Yampa River Watershed are disturbances from development, industry, roads, non-renewable energy development, and some recreational activities. Dispersed grazing with the limited numbers and season of use for livestock in these allotments would likely have an inconsequential contribution to sedimentation or contamination compared to the more significant landscape modifications occurring or planned in the area.

Many recreational opportunities are available throughout the area, including the allotments under the proposed action. Recreational opportunities include, but are not limited to, hiking, mountain biking, OHV use, horseback riding, and hunting. Sand Wash Basin is especially popular for OHV use, wild horse viewing, and hunting. As population demographics in the surrounding area and the push to get people outdoors continue to evolve, more people are recreating on public lands. An increase in visitors to public lands could provide the potential for conflicts between people and livestock protection dogs that are the primary and traditional means of protecting sheep from predators. The allotments have different dates that allow for authorized grazing and herding; however, trailing, which occurs primarily in the fall and spring, could occur anytime on any of the allotments in these areas, particularly along the major county roads, and the potential to interact with livestock protection dogs could occur during recreational use. A national effort is currently underway to provide information to the public on the potential dangers associated with

sheep dogs and are aimed at better educating the public on how to act when in the vicinity of these dogs.

Numerous maintained and unmaintained roads exist throughout the area, including on the allotments. These roads are used regularly by local residents and ranchers as well by as the primary recreation users in the area, hunters. In association with the expected signing and implementation of the Final Little Snake Resource Management Plan (RMP) a Travel Management Plan (TMP) would be completed within five years. This TMP will provide greater restrictions to OHV use compared to what is currently allowed. These restrictions would remove an additional impact in many areas, thus benefiting natural resources. The RMP (when implemented) will designate a portion of the Sand Wash Allotment #04219 in the southern Sand Wash Pasture as a Special Recreation Management Area (SRMA) for OHV use. Areas outside the SRMA will have more OHV restrictions imposed.

Native American groups are contacted on an annual basis concerning grazing permit renewals. In the past the consulted Tribes have not had any concerns with grazing permit renewals. It is not anticipated that any new issues or concerns will arise. However if new data is disclosed or discovered, new terms and conditions may have to be added to the permit to accommodate Native American concerns. The BLM will take no action that would adversely affect these areas or location without consultation with the appropriate Native Americans.

Cultural resources have not been totally inventoried within the allotments. This makes the total direct and indirect cumulative impacts difficult to assess. Based on available data, a high potential for cultural resources occurs in the Sand Wash #04219 and Cross Mountain #04307 Allotments. The other three allotments have not been surveyed adequately to assess potential. Continued grazing may cause substantial ground disturbance and cause irreversible adverse effects to cultural resources. Cultural resource inventory will be conducted in areas where livestock concentrate within a ten year period of the issuance of a permit. Mitigation requirements presented in the cultural resource section and subsequent studies are adequate for addressing the cumulative impacts to known or newly discovered resources. Other land uses authorized or restricted under the anticipated RMP will further help to protect cultural resources in and around the areas of proposed action.

Energy and minerals development is currently authorized in many areas of the proposed action and some level of future developments will occur. Currently there are two proposed high voltage interstate transmission line routes; both proposed routes pass through or near all allotments under the proposed action. The anticipated RMP provides so that energy and mineral development will not interfere with or reduce current levels of other managed public land uses. The growing trend for renewable energy sources (solar and wind) has seen an increase in interest of these facilities on public lands. To date the areas of proposed action and the LSFO resource area in general has not been identified as a desired location for either of these energy developments.

As ranching and agriculture is a major economic driver for the local community and surrounding region. Continuation of these practices would provide commerce, employment, and stability to

many businesses, families and individuals who depend on agricultural practices for their livelihood. If the no grazing alternative were to be chosen a small number of individuals and families would lose employment and would be forced to seek/or train for other employment, relocate, or rely on public assistance. If this type of no grazing on public land trend were to continue, cancelling other or all public land grazing permits, the economy of the entire region and many other associated industries would no longer be sustainable, thus causing a much larger and far reaching adverse economic and social impact. Currently and in the foreseeable future there is no industry, or economic venture that could replace agricultural practices in terms of employment, commerce, and tax based revenue.

There is a consensus in the international community that global climate change is occurring, although defined causal factors and prevention measures are still being debated. There is currently a lack of guidance on how to perform a climate change analysis under NEPA and thus it is appropriate to restrict this discussion to a qualitative review. Livestock grazing under the No Action or Preferred Alternatives would be at a reduced level from historical use, so it follows that methane and carbon dioxide production would be reduced as well. Therefore, No Action or Preferred Alternatives, there would be a reduced contribution to global climate change. Greenhouse gas production would presumably be further reduced under the no grazing scenario, although it is likely that at least some of the livestock that would have been grazed on these allotments would simply graze elsewhere.

The No Action and Preferred Alternatives to continue grazing on these allotments is compatible with other uses, both historic, present, and future and would not add any new or detrimental impacts to those that are already present or will be cumulative in nature.

STANDARDS (also see Rangeland Health section)

PLANT AND ANIMAL COMMUNITY (animal) STANDARD: These five allotments currently provide habitat that is capable of supporting healthy, diverse populations of wildlife. These allotments are currently meeting this standard. Any alternative would ensure that this standard continues to be met in the future.

Name of specialist and date: Gail Martinez, 11/09/10

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD: The allotments provide habitat for greater sage-grouse, a BLM sensitive species and a candidate for listing under the Endangered Species Act. Special Terms and Condition #3 under the Preferred Alternative would help protect nesting habitat for greater sage-grouse by ensuring that there would be residual grass cover for nesting where possible. Sagebrush and grass communities on the allotments are in good condition, providing suitable habitat for greater sage-grouse. Overall, native vegetation is appropriate and healthy and meets this standard. This standard would continue to be met under any alternative.

Name of specialist and date: Gail Martinez, 02/01/11

PLANT AND ANIMAL COMMUNITY (plant) STANDARD: This standard is met for all allotments, except in the southern portion of the Sand Wash Pasture. Vegetation monitoring post Land Health Assessment indicates this area is improving. This area is not characteristic of the entire Sand Wash Allotment. On all allotments, where this standard is met, standards would continue to be met with implementation of any alternative. On sites where this standard is not being met, revised Terms and Conditions, continued monitoring, and appropriate adjustments of livestock management would insure that these areas would move toward meeting this standard under the No Action or Preferred Alternative. It is not known if the No Grazing Alternative would provide the same results as the causal factors in the sites not being met was not identified as current livestock management.

Name of specialist and date: Mark Lowrey, 01/20/11

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD: There are no federally listed threatened or endangered or BLM sensitive plant species present on any of the affected allotments. This standard does not apply.

Name of specialist and date: Hunter Seim, 03/06/09

RIPARIAN SYSTEMS STANDARD: With the exception of one small spring in the Sand Wash Allotment, all riparian resources that have been assessed are meeting public land health standard for riparian systems. This would not change under the Proposed or No Action Alternative. Allowing for cattle use in place of some sheep AUMs would not result in an increase in use of riparian areas under the proposed management. The proposed Special Terms and Conditions addressing movement of livestock through the allotments would maintain or improve riparian resource conditions. This standard would continue to be met with implementation of any alternative.

Name of specialist and date: Emily Spencer, 11/09/10

WATER QUALITY STANDARD: This standard is currently being met. Implementation of the proposed revised terms and conditions would maintain or improve overall rangeland health where needed to prevent excessive and accelerated erosion that would contribute to suspected sediment issues further downstream. Livestock use of the allotments is predominantly in the winter when soils are frozen and least susceptible to damage by hoof action that could also contribute to sedimentation near perennial water. Grazing and associated activities would not contribute to water quality problems regarding iron impairment. This standard would continue to be met with implementation of any alternative.

Name of specialist and date: Emily Spencer, 11/01/10

UPLAND SOILS STANDARD: This standard is currently being met and would continue to be met under any alternative. Given the overall good condition of the vegetation within the

allotments, season of use, revised Special Terms and Conditions, and herding/movement of livestock within the allotments, the Proposed Action would maintain sufficient plant cover to both protect the soil surface from wind and water erosion and allow the plant community to continue to produce litter is sufficient amounts to maintain litter and sustain appropriate water permeability.

Name of specialist and date: Emily Spencer, 11/09/10

PERSONS/AGENCIES CONSULTED: Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office, Nottingham Land & Livestock.

SIGNATURE OF PREPARER: /s/ Mark Lowrey

DATE SIGNED: 03/14/11

SIGNATURE OF ENVIRONMENTAL REVIEWER: /s/ J Hunter Seim

DATE SIGNED: 03/14/11

Finding of No Significant Impact

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. With the implementation of the attached mitigation measures there is a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.

2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.

3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.

4. There are no highly controversial effects on the environment.

5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.

6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.

7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.

8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.

9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

SIGNATURE OF AUTHORIZED OFFICIAL: /s/ Jeremy Casterson

DATE SIGNED: 03/23/11

ATTACHMENT #2
DOI-BLM-CONO01-2009-0042
STANDARD AND COMMON TERMS AND CONDITIONS

Standard Terms and Conditions

1) Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.

2) They are subject to cancellation, in whole or in part, at any time because of:
   a. Noncompliance by the permittee/lessee with rules and regulations;
   b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based;
   c. A transfer of grazing preference by the permittee/lessee to another party;
   d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described;
   e. Repeated willful unauthorized grazing use;
   f. Loss of qualifications to hold a permit or lease.

3) They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans MUST be incorporated in permits and leases when completed.

4) Those holding permits or leases MUST own or control and be responsible for the management of livestock authorized to graze.

5) The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.

6) The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.

7) Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.

8) Livestock grazing use that is different from that authorized by a permit or lease MUST be applied for prior to the grazing period and MUST be filed with and approved by the authorized officer before grazing use can be made.

9) Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.

10) Grazing fee payments are due on the date specified on the billing notice and MUST be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of $25 or 10 percent of the amount owed but not more than $250) will be assessed.

11) No member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App. 1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise therefrom; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

Common Terms and Conditions

A) Grazing use will not be authorized in excess of the amount of specified grazing use (AUM number) for each allotment. Numbers of livestock annually authorized in the allotment(s) may be more or less than the number listed on the permit/lease within the grazing use periods as long as the amount of specified grazing use is not exceeded.

B) Unless there is a specific term and condition addressing utilization, the intensity of grazing use will insure that no more than 50% of the key grass species and 40% of the key browse species current years growth, by weight, is utilized at the end of the grazing season for winter allotments and the end of the growing season for allotments used during the growing season. Application of this term needs to recognize recurring livestock management that includes opportunity for regrowth, opportunity for spring growth prior to grazing, or growing season deferment.

C) Failure to maintain range improvements to BLM standards in accordance with signed cooperative agreements and/or range improvement permits may result in the suspension of the annual grazing authorization, cancellation of the cooperative agreement or range improvement permit, and/or the eventual cancellation of this permit/lease.

D) Storing or feeding supplemental forage on public lands other than salt or minerals must have prior approval. Forage to be fed or stored on public lands must be certified noxious weed-free. Salt and/or other mineral supplements shall be placed at least one-quarter mile from water sources or in such a manner as to promote even livestock distribution in the allotment or pasture.

E) Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of

human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any allotment activities or grazing activities, the operator is to immediately stop activities in the immediate vicinity and immediately contact the authorized officer. Within five working days the authorized officer will inform the operator as to:

-whether the materials appear eligible for the National Register of Historic Places;
-the mitigation measures the operator will likely have to undertake before the identified area can be used for grazing activities again.

If paleontological materials (fossils) are uncovered during allotment activities, the operator is to immediately stop activities that might further disturb such materials and contact the authorized officer. The operator and the authorized officer will consult and determine the best options for avoiding or mitigating paleontological site damage.

F) No hazardous materials/hazardous or solid waste/trash shall be disposed of on public lands. If a release does occur, it shall immediately be reported to this office at (970) 826-5000.

G) The permittee/lessee shall provide reasonable administrative access across private and leased lands to the BLM and its agents for the orderly management and protection of public lands.

H) Application of a chemical or release of pathogens or insects on public lands must be approved by the authorized officer.

I) The terms and conditions of this permit/lease may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.