Bureau of Land Management

Wind River/Bighorn Basin District

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Grass Creek Basin Allotment No. 00530

Location: Township.46 N. Range 98 W. Section(s) Various/Multiple
Applicant: Graves Land and Livestock, LLC

Livestock Grazing Permit
Environmental Assessment
DOI-BLM-WY-R010-2012-0082-EA

BLM

Worland Field Office

MISSION STATEMENT

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1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing/transferring the grazing permits on the Grass Creek Basin Allotment. This EA is a site-specific analysis of potential impacts that could result with the implementation of the analyzed alternatives. The EA assists the BLM in planning and ensuring determination as to whether any "significant" impacts could result from the analyzed actions. An EA provides evidence for determining whether an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI) should be prepared. If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a "Finding of No Significant Impact" (FONSI) and Decision Record (DR) may be signed for the EA approving the selected alternative.

1.1 Need and Purpose of Action

NEED: This action is needed to transfer the grazing permit and to address grazing management/terms and conditions on the Grass Creek Basin Allotment.

PURPOSE: This action focuses on the environmental issues specific to livestock grazing management and transferring the term grazing permit associated with this allotment. The purpose of this action is to continue, modify, or cancel the current grazing management to promote healthy, sustainable rangeland ecosystems and to meet/continue to meet rangeland health standards.

The grazing permit is subject to renewal in accordance with the provisions of the Taylor Grazing Act, Federal Land Policy and Management Act, Public Rangelands Improvement Act, Administrative Procedures Act, Grass Creek Resource Management Plan, and the grazing regulations 43 CFR Part 4100.

In order for livestock grazing to occur on public land, the livestock permittees must hold a valid grazing permit. The Code of Federal Regulations, 43 CFR 4130.2(a), states that "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans." The Grass Creek RMP has designated the allotment as available for livestock grazing. The above mentioned applicants control base property associated with a grazing preference on the allotment and have been determined to be qualified applicants.

1.2 Regulatory Decisions

The Authorized Officer (AO) must determine whether or not to issue a grazing permit to the applicant(s). The applicant for the renewal or issuance of a new grazing permit or lease, and any affiliate, shall have a satisfactory record of performance and be in substantial compliance with the terms and conditions of the existing Federal grazing permit or lease for which a new permit is sought. The AO could decide not to issue a permit, or to remove the grazing preference from the RMP grazing base, if it would cause unnecessary or undue degradation to the public lands, if it would threaten to violate another Federal law, or if the applicant has an unsatisfactory record of performance or is not in compliance with the existing permit or lease. If the AO decides to remove the grazing preference from the RMP grazing base through an RMP revision, the potential effects of removal of the grazing preference would be analyzed during the RMP revision process.

The AO must identify specific terms and conditions that apply to the permit. Livestock grazing permits and leases shall contain terms and conditions appropriate to achieve management and resource condition objectives for the public lands. These grazing permits and leases shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months, for every grazing permit or lease. The authorized use shall not exceed the livestock carrying capacity of the allotment. All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or any term or condition of the permit or lease (43 CFR 4130.3). The environmental assessment will be used to identify the appropriate terms and conditions that should be included with the renewed permit.

Finally, the AO must determine whether or not implementation of the selected alternative could result in significant impact to the human environment. If not, this determination would be documented in a Finding of No Significant Impact (FONSI). If the impacts could be significant, an environmental impact statement would be necessary.

1.3 Conformance with Applicable Land Use Plan

This action is subject to the following land use plan:

Name of Plan: Grass Creek Resource Management Plan (RMP)
Date Approved: September, 1998

Remarks: The Grass Creek RMP established the following Management Objective for Livestock Grazing Management:

"Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and forage for wild horses." [Page 13]

Specific livestock grazing management actions from the Grass Creek RMP, which apply to this proposed action include,

"The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a permittee's application to change grazing use is appropriate." [Page 13]

And,

"Grazing strategies (including the timing of grazing) will be designed to accommodate the growth requirements of "desired" species within plant communities." [Page 14]

The RMP has been reviewed and it is determined that the proposed action conforms to the land use plan terms and conditions as required by Title 43 Code of Federal Regulations, Part 1610.5.

1.4 Relationships to Statutes, Regulations, Policies, Plans or Other Environmental Analyses

This and other grazing related Environmental Assessments are being prepared in accordance with Washington Office (WO) Instruction Memoranda WO-IM-99-039 and 2000-022 as well as WY-IM-2000-20, which instruct all Bureau of Land Management (BLM) Field Offices to conduct National Environmental Policy Act (NEPA) review on grazing permit renewals. The primary regulations governing the analysis are 40 CFR 1500 (RE: The President's Council on Environmental Quality implementing regulations for procedural provisions of NEPA). The principal Bureau permitting regulations for livestock grazing are found in 43 CFR 4100. The principal statutes governing livestock grazing on public land are the Taylor Grazing Act of 1934, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978.

2.0 DESCRIPTION OF ALTERNATIVES

The Alternatives were developed based upon the current grazing permit, a proposal of the applicant, and BLM Policy Instruction Memorandum No. WY-2000-020. The alternatives were developed to address the grazing impacts on public lands within the allotments, to consider the permittee's ranching resource goals and operations as well as provide the opportunity for specific comparisons on which the decision maker could base a decision.

No Action Alternative - Issue the grazing permits with no changes to the current permit
The grazing permit would be issued for a term of ten years. The grazing permit would authorize the same level of livestock grazing use as the previous grazing permit. The AUMs, season of use, and management would remain the same. The grazing permit would authorize the following livestock grazing use:

Grass Creek Basin Allotment No. 00530

65 Cattle	05/05-07/01	35% Public Land	43 AUMs
110 Cattle	07/02-12/22	35% Public Land	220 AUMs
35 Horses	12/01-02/28	35% Public Land	36 AUMs

300 Active AUMs 37 Suspended AUMS 337 Grazing Preference AUMs

Other Terms and Conditions: Cattle numbers may vary after July 1 so long as total cattle AUMs are not exceeded. Pending construction of the east west division fence, the entire allotment will be open May 5 to February 28. If the fence is not completed by 2005 the turnout date will be July 1 every other year. Horse use will be limited to the dormant season.

Proposed Action Alternative –Issue grazing permit with modifications
The grazing permit would be issued for a term of ten years. The active AUMs would remain the same however the season of grazing use dates would change. All livestock grazing would occur during the vegetative dormant season. All of the AUMs would be used by cattle and therefore all horse use would be eliminated. The grazing permits would authorize the following livestock grazing use:

Grass Creek Basin Allotment No. 00530

200 Cattle	03/01-03/15	35% Public Land	35 AUMs
200 Cattle	11/06-02/28	35% Public Land	265 AUMs

300 Active AUMs 37 Suspended AUMS 337 Grazing Preference AUMs

Other Terms and Conditions: NONE

No Grazing Alternative - Eliminate Livestock Grazing/Remove the Preference from the Grazing Base
Under the Alternative, no livestock grazing would be permitted on the Grass Creek Basin Allotment. The previous grazing permit would be cancelled. The grazing preference for the allotment would be removed from the Grass Creek RMP grazing base.

3.0 AFFECTED ENVIRONMENT

3.1 General Setting

The allotment is located in Hot Springs County and is at Grass Creek, Wyoming. The allotment is comprised of 1,459 public land acres and 2,258 private and state land acres for a total of 3,717 acres. Originally, the allotment had 1,819 public land acres but in 1993 a number of land patents were issued pertaining to oil placer claims under the Energy Policy Act of 1992. There were 360 acres of public land involved in the issuance thereby leaving 1,459 public land acres which resulted in a reduction of 37 public animal unit months. The nearest BLM maintained rain gauge is approximately 4 miles southeast of the allotment. This gauge is named Prospect Creek, it has a record of 1978 to current, and indicates that the area receives approximately 8.5 inches of precipitation per year. This simple gauge defines the allotment as being at the upper end of the 5-9" precipitation zone or at the lower end of the 10-14" zone. The elevation ranges from approximately 6,100 feet at the southern area of the allotment to approximately 5,600 feet northward. Grass Creek dissects from west to east and is located on the private and state lands within the allotment. The allotment varies from a small area of steep rocky ridges at the southern end of the allotment to the majority of the allotment characterized as rolling hills to the north.

3.2 Vegetation

Grass Creek Basin Allotment
The allotment is classified as a "Custodial" Management Allotment. The objective for a "C" category allotment is to manage lands in a custodial manner that will prevent deterioration of current resource conditions. Vegetation on the allotment includes needle-and-thread grass (key species), bluebunch wheatgrass (key species), sandberg bluegrass, sagebrush, pricklypear cactus, sedges, blue grama, western wheatgrass, winterfat, larkspur, prairie junegrass, bottlebrush squirreltail and junipers. While this listing of vegetation is far from being an "all inclusive" listing of the vegetation of the allotments it does provide a representation of vegetative species readily encountered throughout the allotment.

The current grazing permit with terms and conditions was derived from EA WY-010-EA0-16, Record of Decision signed 4/19/2000. The allotment is currently permitted for use by one permittee as follows:

65 Cattle	*5/5-7/1*	*35% Public Land*	*43 AUMs*
110 Cattle	*7/2-12/22*	*35% Public Land*	*220 AUMs*
35 Horses	*12/1-2/28*	*35% Public Land*	*36 AUMs*

<u>Other terms and conditions</u>:
Cattle numbers may vary after July 1 so long as total cattle AUMs are not exceeded. Pending construction of the east west division fence, the entire allotment will be open May 5 to February 28. If the fence is not completed by 2005 the turnout will be July 1 every other year. Horse use will be limited to dormant season.

300 Active AUMs 37 Suspended AUMS 337 Grazing Preference AUMs

One such term was a new fence but the EA doesn't disclose who would the build the fence, the exact location of the fence, the design of the fence or the impacts of any fence on any resources of the area-it is a statement without analysis-the fence was never built. Horse use has been limited to dormant season use, but the term of grazing every other year in July (in response to no fence being built) has not been followed.

Also in the year 2000, the allotment was assessed for conformance with the Wyoming Rangeland Standards and Guidelines. The resource conditions –the standards - of the public rangelands were met. The 17 indicators of rangeland health as determined at that time and the associated rating of those indicators are represented in the following table:

Indicator T46 R98 NW (along 4 mile road)	Departure from Reference Sheet
1. Rills	S-M
2. Water-flow patterns	S-M
3. Pedestals and/or terracettes	M
4. Bare ground	S-M
5. Gullies	S-M
6. Wind-scoured, blowouts, and/or deposition areas	S-M
7. Litter movement	S-M
8. Soil surface resistance to erosion	S-M
9. Soil surface loss or degradation	N-S
10. Plant community composition and distribution relative to infiltration	N-S
11. Compaction layer	S-M
12. Functional / structural groups	S-M
13. Plant mortality / decadence	S-M
14. Litter amount	N-S
15. Annual production	N-S
16. Invasive plants	N-S
17. Reproductive capability of perennial plants	N-S
Soil and Site Stability Rating (Not Stable, At Risk, or Stable)	**Stable**
Hydrologic Function Rating (Not Functioning, At Risk, Functioning)	**Functioning**
Integrity of the Biotic Community (Not Intact, At Risk, Intact)	**Intact**
N-S None to Slight S-M Slight to Moderate M Moderate M-E Moderate to Extreme E-T Extreme to Total	

The grazing that occurred the 10 ten years prior to the assessment (1990-1999) is represented in the table below.

YEAR	PERIOD OF USE	AUMS	TOTAL FFEDERAL AUMS USED
1990	3/28-4/28 6/9-9/1 5/10-6/7	47 218 4	269
1991	3/20-5/7 10/15-11/10	86 70	156
1992	4/1-7/1 8/15-11/1	151 39	190
1993	5/10-7/10 8/15-11/8	6 68	**74 (low)**
1994	5/5-11/2	346	346
1995	5/17-6/4 9/23-10/28	4 130	134
1996	5/4-10/4	334	334
1997	5/3-11/11 11/20-2/28	308 29	337
1998	3/1-3/31 5/3-11/9	39 337	**376 (high)**
1999	5/1-10/25 12/1-2/28	164 36	200

Data from Bills and/or Actual Use Reports

The allotment was used at approximately 81% of the permitted AUMs over the 10 year period prior to the S&G's assessment. The allotment was utilized at various times throughout any given year with each and every growing season being utilized. The maximum

number of AUMs was 376 while the minimum taken during a year was 74. The Standards and Guideline findings, that the grazing management is in conformance with healthy rangelands, is a reflection of the previous year's grazing practices.

Since the Standards and Guideline assessment of 2000 the grazing use on the allotment has varied. Over the last decade use ranged from non-use to nearly full use. The variance is a result of drought conditions experienced much of the first part of the decade and changes in ranch ownership. Grazing over the last 12 years is reflected in the following table.

YEAR	PERIOD OF USE	AUMS	TOTAL FEDERAL AUMS USED
2000	3/1-4/1 5/8-10/24 11/1-2/15	13 77 112	202
2001	5/7-10/13	194	194
2002	6/3-10/16 12/5-2/28	66 31	97
2003	7/25-10/19 12/1-2/28	136 35	171
2004	5/8-8/14 11/11-2/28	130 41	171
2005	3/1-3/10 5/9-7/29 12/1-2/27	4 64 65	133
2006	5/5-7/1 12/1-2/27	44 41	**85 (low)**
2007	5/21-9/13	115	115
2008	5/24-11/1 12/29-2/27	173 33	206
2009	5/16-11/30 12/2-2/28	224 36	**260 (high)**
2010	11/18-2/28	209	209
2011	11/23-2/28	169	169

Data from Bills and/or Actual Use Reports

Grazing use of the allotment from 2000 to 2011 has been lower than the previous decade. During the 11 year period, the permit had been operated by 3 different permittees and a drought was endured during the first half of the decade. The allotment was utilized at various times throughout any given year with growing season being utilized 9 out of 12 years. The maximum number of AUMs was 260 while the minimum taken during a year was 85.

Utilization levels were observed 5 of the last 12 years. Utilization has been portrayed by categorizing the observed use into a descriptive format representing the amount of use made of the current year's growth as such: Slight 0-20%, Light 20-40%, Moderate 40-60%, Heavy 60-80%, and Severe 80-100%.

Year	Utilization Observed (public lands) Key Species –Bluebunch Wheatgrass And Needleandthread Grass	AUMs Utilized	Average Growing Season Precip (Inches) 1978-2010 April Thru June	Growing Season Precipitation (Inches)
2011	Light (20-40%)	169	4.4	5.75
2010	None to light (0-40%) - west and north and light to moderate (20-60%)-east central	261		5.5
2005	Light (20-40%)-throughout	133		6.7
2004	Light (20-40%)-throughout	171		2.96
2003	Light (20-40%)-throughout	171		3.77
2002	Light (20-40%)-throughout	97		1.7

In 2010 and 2011, two (2) cover transects (Step Point) were completed on the allotment at 2 different range sites-a shallow loamy and a loamy. The shallow loamy and the loamy range sites represent the majority of public land within the allotment.

The step point method provides a good "overview" of an area. There are no established key areas within the allotment therefore the dominant range sites that represent the public land of the allotment were monitored.

Cover Transect Data - Shallow Loamy Range Site (saline upland influence)

Cover Transect September 2011 T46 R99 Section 13	**Ecological Site Description-Expected Potential Composition**	**Notes**
17% bare ground	15-45% bare ground	
23% litter	10-25% litter	
2% rock/gravel		
54% vegetation – see below for composition		
--51% grasses	75% grasses	Bluebunch wheatgrass dominant grass species
--11% forbs	10% forbs	
--30% woody	15% woody	
--9% other (bio. soil crusts)		

The observed vegetative indicators indicate that the site is likely between two vegetative community states – the Bluebunch wheatgrass/needleandthread grass community (HCPC) and a perennial grass/mixed shrub community. Both of the states are desirable and within a dynamic balance with each. There is a dominance of perennial cool season grasses such as bluebunch wheatgrass, western wheatgrass, indian ricegrass and green needlegrass. Complementing the grass community is a community of sagebrush and varied forbs as well as biological soil crusts and lichens on site. The saline upland influence of the site is displayed through the presence of birdsfoot trefoil.

Cover Transect Data - Loamy Range Site

Cover Transect November 2011 T46 R98 Section 17	**Ecological Site Description-Expected Potential Composition**	**Notes**
12% bare ground	15-45% bare ground	
17% litter	5-30% litter	
71% vegetation – see below for composition		
--69% grasses/grass like	75% grasses	Bluebunch wheatgrass dominant grass species
--4% forbs	10% forbs	Likely under represented due to timing of data collection
--12% woody	15% woody	
--14% other (bio. soil crusts-lichens)		

The observed vegetative indicators evince that the site is at or near a Bluebunch wheatgrass/Rhizomatous wheatgrass community (HCPC). There is an abundance and dominance of perennial cool season grasses such as needleandthread, bluebunch wheatgrass, and western wheatgrass. Complementing the grass community is a community of sagebrush and varied forbs as well as biological soil crusts and lichens on site.

The Grass Creek RMP (Table 3-5, column C) at page 251 of the Draft EIS recommends a total of 523 AUMs for the allotment. This is based upon a vegetation inventory conducted from 1977 to 1979. The current permit allows for a total of 857 AUMs. As is evident, the inventory occurred approximately 30 years ago; it is titled as "Recommended". Also, the data collection efforts in the last 11 years indicate that the vegetative communities on public lands are resilient, stable and reflect a native community that one would expect to encounter (S&G's of 2000 and additional cover transects/utilization 2002 through 2011). Utilization levels have not indicated that the grazing use of the last 20 years has been detrimental to public rangelands. To estimate the desired stocking levels for the allotments based on utilization levels the following formula from *BLM Technical Reference 4400-7, Appendix 2* was used.

$$\frac{\text{Actual Use (AUMs)}}{\text{\% Utilization}} = \frac{\text{Desired Use (AUMs)}}{\text{Desired \% Utilization}}$$

To solve for Desired Use AUMs:

$$\frac{\text{Actual Use (AUMs)} \quad \text{X} \quad \text{Desired \% Utilization}}{\text{Measured \% Utilization}} = \text{Desired Use (AUMs)}$$

There are 6 years of utilization observations (7 observations) since 2000 that can be associated with a number of AUMs. There are 2 grazing alternatives within this document. Alternative 1 prescribes grazing to occur throughout the year and the RMP recommends a 30-50% utilization level therefore an average of 40% will be utilized in the formula. Alternative 2 prescribes grazing entirely during dormant season thus, in accordance with the GCRA RMP a 60% desired utilization level would be used in the formula. With the data at hand the formula can be utilized.

The utilization limits within the RMP varies and are as stated in Table 3-6 as follows and as pertaining to this allotment:

Average Annual Precipitation	**Appropriate Utilization for Key Forage Key Areas(1) (percentage)**	**Vegetative Community**	**Start of Spring Growth/Start of Dormancy**	**Appropriate Utilization for Plants Grazed Exclusively During the Dormant Season (percentage)**
10-14"	*30-50*	*Foothills-Mountain-Grassland/Shrub*	*May 1/October 15*	*60*

(1) Ranges in good condition or grazed partially during the dormant season can withstand the higher utilization level. Those in poor condition or those grazed during the active plant growth should receive the lower utilization limit.

Alternative 1

Year	**Utilization Observed (public lands) Key Species –Bluebunch Wheatgrass And Needleandthread Grass**	**Utilized Federal AUMs**	**Desired % Utilization**	**Average % Utilization**	**Desired Federal AUMs**	**Desired Total AUMS**
2011	Light (20-40%)	169	40	30	225	643
2010	None to light (0-40%)	261	40	20	522	1491
2010	Light to moderate (20-60%)	261	40	40	261	746
2005	Light (20-40%)	133	40	30	177	506
2004	Light (20-40%)	171	40	30	228	651
2003	Light (20-40%)	171	40	30	228	651
2002	Light (20-40%)	97	40	30	129	369
AVERAGE		**180**	**40**	**30**	**253**	**722**

Alternative 2

Year	Utilization Observed (public lands) Key Species –Bluebunch Wheatgrass And Needleandthread Grass	Utilized Federal AUMs	Desired % Utilization	Average % Utilization	Desired Federal AUMs	Desired Total AUMS
2011	Light (20-40%)	169	60	30	338	966
2010	None to light (0-40%)	261	60	20	783	2237
2010	Light to moderate (20-60%)	261	60	40	392	1120
2005	Light (20-40%)	133	60	30	266	760
2004	Light (20-40%)	171	60	30	342	977
2003	Light (20-40%)	171	60	30	342	977
2002	Light (20-40%)	97	60	30	194	554
AVERAGE		**180**	**60**	**30**	**380**	**1086**

The calculations for Alternative 1 indicate that at a prescribed utilization level of 40% there is 253 federal AUMs available while the current permit allows 300 federal AUMs. It should be noted that 81% of the federal AUMs were utilized from 1990 through 1999. Eighty-one percent (81%) of 300 AUMs is 243 which is nearly that calculated (253) as being available at a desired utilization limit of 40%.

The calculations for Alternative 2 indicate that at a prescribed utilization level of 60% (as allowed within the RMP) there are 380 federal AUMs available while the current permit allows 300 federal AUMs.

While there is never an exact number in stocking rates there are observed averages over time and the data indicates that there is not 300 federal AUMs available for use at an average utilization level of 40% prescribed for grazing prior to dormancy. Grazing post season, which allows fo 60% utilization, would provide for the 300 federal AUMs currently on the grazing permit.

The water sources located within the allotment are located on private and state land. The Grass Creek is a reliable water source and is centrally located thereby serving the northern and southern parts of the allotment. The reservoirs located on the private lands in the northwest and northeast areas of the allotment. These reservoirs reliability is completely dependent upon precipitation events as they are located on ephemeral drainages. Snow, during the winter months, serves as a supplement water source.

3.2.1 Invasive Species

The allotment is included in the Grass Creek Weed Management Area, and is monitored and treated annually through a multi-agency public/private partnership since 2006. Numerous populations of several noxious weed species are established and have been mapped in the area. The primary noxious weed species inventoried on BLM managed land in the allotment are Canada thistle and Russian knapweed. The vast majority of weed populations are on private and statelands along travelways. On public lands the majority of the populations are less than 0.1 acre while the largest treatment was approximately 0.6 acre.

3.3 Soils

The soils reflect the piedmont geomorphic position on which they formed. They are highly variable, reflecting differences in parent material (silty shale, interbedded sandstone), position on the landscape, slope and aspect. Soil depth ranges from a few inches to 60+ inches. These soils typically have a brown surface layer. Surface textures are loams, clay loams, silty clay loams and sandy loams. The subsoil commonly reflects an increase in clay being expressed as an argillic horizon. Slopes range from 0 to 60 percent. (See Map 3)

Based on BLM soil survey data for Hot Springs County, the dominant ecological sites are listed below:

Loamy 10-14 in. pz.	R032XY322WY
Shallow Loamy 10-14 in. pz.	R032XY362WY
Clayey 10-14 in. pz	R032XY304WY
Saline Upland	R032XY344WY

Range monitoring data and data specific to the rangeland health indicate that the soil resource meets Standard 1 for Healthy Rangelands. The 12 indicators used to evaluate rangeland health with respect to the rangeland health attributes of Soil & Site Stability and Hydrologic Function (Indicators of Rangeland Health 1 through 11 and 14) revealed that the soils are stable with adequate cover to protect against the erosive forces of raindrop impacts and overland flow.

The soils are stable with few indicators of active erosion. Transect data on a Shallow Loamy ecological site determined bare ground to be 17 percent with 23 percent litter cover. Transect data on a Loamy ecological site determined bare ground to be 12 percent with 17 percent litter cover. Bare ground and litter are within that described in the reference sheets for the respective ecological sites. Ground cover is capable of protecting the soil surface from the erosive forces of raindrop impact and overland flow, and from the erosive forces of wind. Waterflow patterns and rills are minimally expressed. Wind scour as indicated by wind-blown areas is rare. It is common for the bunch grasses to be sitting on pedestals but terracettes are rare on the landscape. Though there is no current evidence of soil loss, the pedestals could be an indicator of past erosion. The soil has sufficient organic matter and the soil structure capable of holding the soil together when wetted. There was no evidence of soil compaction. The plant composition (Bluebunch Wheatgrass/Rhizomatous Wheatgrass-Big Sagebrush and Perennial Big Sagebrush States) adds further stability of the soil resource; infiltration is being maximized and there is minimal runoff.

The data collected as part of this analysis indicates that the attribute rating for both Soil and Site Stability and Hydrologic Function to be “Slight to Moderate”.

3.4 Hydrology/Riparian

The Grass Creek Basin allotment is located in the Upper Bighorn River sub-basin. Within the allotment there are two different level #6 sub-watersheds that are identified by the United States Geological Survey (USGS) by name and Hydrologic Units Codes or (HUC). The sub-watershed with the majority of public land is the Gooseberry Creek-Gilles Draw watershed that consists of the northern portion of the allotment. There is a small watershed divide north of Grass Creek that drains the southern portion of the allotment that is located in the Middle Grass Creek sub-watershed. Both of these sub-watersheds drain the foothills of the Absoroka Range and flow in an eastern direction toward the center of the Bighorn Basin. The surface water hydrology of the allotment consists of ephemeral drainages with the average drainage slopes around 1-2 percent. The main perennial water source in the allotment is Middle Grass Creek and it is located on private and stateland. Within the Worland Field Office GIS layers (WFO_All_Wetlands) there is one “wetland” area identified on public lands within the allotment-located in T46 R98 Section 7. Within the layer description it is identified as “freshwater pond”. Field inspections show that site is actually a pit developed by oilfield operations as an oil spill safety pit and named “Pit #25”-see photo. The impoundment is fenced to protect/prevent livestock and wildlife from entering the pits. There are no riparian or wetland obligate species found along the drainage within or below the impoundment pit – therefore it does not meet the criteria of a “wetland” and not analyzed as a wetland.

3.5 Wildlife

The allotment provides habitat for a variety of wildlife including some BLM sensitive species that will be discussed within the document. The area provides yearlong habitat for antelope and mule deer. The allotment not only provides for yearlong habitat for

mule deer but is also considered crucial winter range. The allotment is not defined as core habitat for sage grouse but it is mapped and defined as a winter concentration area in the northern area of the allotment-on private lands within the allotment. There is also an active lek located approximately .3 miles north of the allotment indicating that the area may support nesting and early brood rearing habitats. Much of the allotment is utilized by fluid mineral development (Grass Creek oil field) which fragments the landscapes. A sagebrush canopy transect run on public land in the northwestern area of the allotment in 2010 indicates that there is a 14% canopy cover by Artemesia wyomingensis. That amount of canopy cover provides a suitable habitat for nesting and wintering. In 2011 a cover transect was completed in the northeastern area of the allotment on public land. Occupancy by sage grouse has not been documented in the area but that transect revealed 11% cover by sagebrush with a strong compliment of native vegetation which would provide for nesting and wintering habitat. These sagebrush habitats could provide breeding, nesting, and foraging habitat for other sagebrush obligate species like the sage thrasher, the Brewer's and the sage sparrow. Although these species have not been documented through formal inventory efforts, they are common to the area and would be supported by the sagebrush community observed. The Ferruginous Hawk, while not formally inventoried on the allotment is another BLM Sensitive Species that is common to the Bighorn Basin. The preferred habitat for Ferruginous Hawks is arid and semiarid grasslands with a topography that is open, level, or rolling such as foothills or middle elevation plateaus comprised of grasslands with a shrub community element- all of which are represented by the allotment. Other species like the badger, bobcat, and a variety of small mammals, passerines, and raptors species inhabit this allotment as well. No known threatened or endangered animal species have been documented in the allotment.

3.6 Non-renewable Resources

The Grass Creek Oil Field was discovered in 1914. The field is a combination of State, private, and Federal lands with State, private, Federal and split-estate oil and gas development. The field is approximately 7,183 acres. According to the Wyoming Oil and Gas Conservation Commision (WOGCC), there are currently 232 completed wells(39 Federal), 128 injection wells(20 Federal), and 28 dormant wells (4 Federal) within the Grass Creek field. Since field discovery approximately 463 wells have been plugged and abandoned (176 Federal). Production reported to the WOGCC shows a steady decline since 1978. There are currently no new proposals for Federal wells.

3.7 Recreation/Visual Resources

The Grass Creek Basin Allotment is located in BLM-administered public lands that are not managed under either special or extensive recreation management areas (RMA). Public lands that are not designated as RMAs are managed to meet basic recreation and visitor services and resource stewardship needs. Recreation is not emphasized, nor is the majority of BLM-administered public lands within the allotment provide for desirable settings conducive for recreation due to the high amount of oil and gas activities. Recreational activities have been observed and include activities such as hunting, hiking, sightseeing, outfitted touring and big game hunting, motorized touring, and other dispersed recreational activities.

Recreational settings within the project area are identified as rural:
Within 1/2 mile of paved/primary roads and highways;
Character of the natural landscape considerably modified (agriculture, residential, or industrial);
People seem to be generally everywhere;
A few large areas of alteration. Surface vegetation absent with hardened soils. Sounds of people frequently heard;
Ordinary highway and truck traffic is characteristic.

Travel and transportation management currently limits motorized use to interim existing roads and trails.

<u>VRM</u>

The project area is located on BLM-administered public lands identified as visual resource inventory (VRI) Class IV. The area is within a scenic quality rating unit (SQRU) inventoried and scored with a scenic quality C rating, low sensitivity levels, and is within the front country distance zone. The landscape is identified as a mountain foothills/high desert transition zone, characteristic of rolling hills to angular and erratic ridges, desert shrub, and incised drainages. The sensitivity ratings are scored as low due to the distance away from major key observation points, as well as management objectives allocating this area for multiple uses which may include major surface disturbing activities. BLM manages the project area as VRM Class IV.

3.8 Cultural Resources

Project Number -- 010-2012-032

Following policy provided in Instruction Memorandum (IM) WO-99-039, IM WY-99-020 and BLM Manual 8100 series a literature review was conducted using State Historic Preservation Officer (SHPO) and BLM records (BLM Cultural Project 010-2012-032). Results of the file search indicate that the Grass Creek Basin Allotment contains fifteen (15) known cultural resource sites. Fifteen (15) Class III inventories have been completed within the allotment covering approximately 1720 acres. The operator is responsible for informing all persons in the area who are associated with this allotment (including development projects) that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. Per the Wyoming State Protocol Agreement between the BLM and the SHPO (State Protocol) at Appendix B.2, issuing permits that do not authorize or promote surface disturbance are exempt from class III inventory.

3.9 Paleontology

The surface formations within the Grass Creek Basin Allotment are Cody Shale and Meaverde Group. These formations have a PFYC (Potential Fossil Yield Classification) rating of 3 or moderate. This means the allotment has a moderate sensitivity for paleontological resources. Significant fossil localities are not common. There are no recorded fossil localities within the Grass Creek Basin Allotment. Because of the low potential to affect significant paleontological localities, a site-specific field inventory was not completed.

4.0 Environmental Consequences

4.1 Alternative 1- Issue Grazing Permits with no changes

The current stocking level of 300 AUMs at an average utilization level of 40% exceeds the estimated carrying capacity of the allotment based upon calculations cited at affected environment section of the EA. Authorizing grazing use that exceeds the carrying capacity of the allotment(s) would be a violation of 43 CFR 4130.3-1(c). As such, Alternative 1 will not be analyzed.

4.2 Alternative 2- Issue grazing permit with modifications

4.2.1 Vegetation

This section discusses generalized principles of plant growth in relation to the impacts of the various grazing treatments, followed by summaries of the perceived impacts for the alternative.

Estimates of vegetation impacts, as a result of implementation of the alternative, is based upon vegetation studies and professional judgment. *The predicted impacts are the best estimates of what would happen and are not to be interpreted as certainties.* Future monitoring and or Standards and Guidelines will aid in detecting any actual impacts to the vegetative component of the allotment.

Defoliation of a plant by grazing reduces the photosynthetic capability of the plant. The leaves are the food factory. Rate of plant regrowth following grazing is dependent on the amount of leaf area remaining for photosynthesis and the availability of active axillary buds to initiate new tillers. Roots anchor the plants to the soil, take up water and nutrients, and if healthy, enable the plant to survive stress from drought, cold, heat, and grazing. Root growth is dependent upon the energy provided from photosynthesis. The dormant season is the least critical period for foliage removal because the plant is photosynthetically inactive.

Under Alternative 2, a portion of the annual forage production would be removed by grazing livestock. Under Alternative 2, 100% of the active AUMs would be utilized during the dormant season. The annual stocking rate of the allotment would be approximately 5 A/AUM (1459 acres/300AUMs). The Ecological Site Descriptions for a Shallow Loamy range site suggest a stocking rate of 5.9 A/AUM for a site described as being at the stage of Perennial Grass/Big Sagebrush Plant Community while a site described as being at HCPC has a suggested stocking rate of 5 A/AUM (10-14” zone, Natural Resources Conservation Service –Dept. of Agriculture, 2008). The Ecological Site Descriptions for a Loamy range site suggest a stocking rate 2.5 A/AUM for a site described as being at the stage of Bluebunch wheatgrass/Rhizomatous Wheatgrass Plant Community (HCPC). The BLM would authorize 300 federal AUMS and the calculations show (section 3.2) there are approximately 380 federal AUMs available, 27% more than permitted, therefore the use levels would not be expected to exceed the 60% as allowed within the RMP.

The prescribed grazing under this alternative would likely maintain or improve the upland rangeland health conditions by providing a stocking rate that is appropriate throughout the year in addition to permitting livestock use to occur during the dormant season. By grazing during the dormant season the rangeland plants would have had the opportunity to initiate growth, produce vegetative matter, produce a viable seed, and replenish energy reserves (complete the annual growth cycle May through June) without domestic grazing pressure. Grazing would occur at a time that would be least likely to cause an interruption to the plants physiological or morphological processes. The long-term impacts in the upland range, as a direct result of dormant season grazing system would be increased vegetation production due to the increased seedling establishment, improved vigor, improved root growth and replacement, increased litter accumulation, and increased percentage composition of grass and forb key species.

4.2.1(a) Invasive Species

The risk for new noxious weed infestations, or for spread of existing ones, would decrease under this alternative. Native perennial grasses would have an opportunity to compete better with weeds since there will be no growing-season grazing pressure. Monitoring and treatment will continue to be necessary in order to prevent the establishment and/or spread of noxious weed populations.

4.2.2 Soils

The proposed changes to the grazing permit, most notably the elimination of growing season use, would further protect soil and watershed conditions as reflected in the rangeland health attributes of Soil & Site Stability and Hydrologic Function. The improvements to the vegetation community discussed in section 4.2.1-Vegetation would lead to improved watershed conditions particularly with respect to cover values.

Watershed improvements would be a long-term impact resulting from changes to the grazing permit. Increased herbaceous growth during the growing season and greater seed production could lead to an increase in herbaceous and litter cover. Waterflow patterns would not entirely disappear, but would over time become shorter with less connectivity. The extent of bare ground could be slightly reduced but equally important, the existing bare areas would likely become smaller and more evenly distributed. There is also potential for an incremental increase in soil organic matter. Pedestals are likely to be long-term features on the landscape though the anticipated changes to the plant community could more quickly lead to their disappearance. The soil surface would be better protected from the erosive forces of overland flow and rain drop impact and water would be retained on the surface resulting in greater infiltration and a slight reduction in runoff.

4.2.3 Hydrology/Riparian

The proposed changes to the grazing permit most notably the elimination of growing season use, would further improve watershed conditions as reflected in the rangeland health attributes of Soil & Site Stability and Hydrologic Function. The change in season would also change distribution and water consumption of the livestock within the allotment. There would be a reduced grazing pressure and channel disturbance on riparian areas around Grass Creek that are state and private land. This pressure would be re-distributed to upland areas during the winter months.. Due to an irrigation withdrawal upstream in section 27, the segments of Grass Creek in the allotment are considered to be impaired for cold water fishery and other aquatic life other than fish.The proximity of cattle to riparian areas and the time residing in the riparian areas on state and private land in the allotment would be reduced. The overall hydrologic impacts (as outlined in EPA,1993 p.7-8) to the watersheds and water quality runoff from the allotment would be enhanced from current conditions by implementing this alternative.

EPA,1993.Monitoring Protocols to Evaluate Water Quality Effects of Grazing Management on Western Rangeland Streams. EPA 910/R-93-017.p.7-8

4.2.4 Wildlife

The livestock grazing proposed in alternative 2 will also allow for the sustainability of wildlife and wildlife habitats. The elimination of growing season grazing should result in enhanced herbaceous and forb communities, and enhanced livestock distribution and subsequent decreased use levels, particularly around watering locations. Based on field inventories along with past, present and proposed livestock use levels, the timing and amount of prescribed livestock grazing proposed in this alternative should provide for the sustainability of wildlife habitats identified above in the affected environment, throughout all seasons of the year. Because there is little dietary overlap between cattle and wintering mule deer, the cattle grazing proposed in this alternative would have little direct effect on wintering mule deer use of the allotment. Because of the justification described above in section 4.2.1 Vegetation, the moderate dormant season livestock use anticipated from the grazing prescribed in this alternative should allow for adequate amounts of herbaceous residue and litter necessary for the sagebrush obligate species nesting and brood rearing habitat needs, as well as for the long term maintenance of this plant community and all other communities providing wildlife habitat.

4.25 Non-Renewable Resources

No effects would be expected to non-renewable resources from livestock grazing as proposed in Alternative 2.

4.2.6 Recreation/Visual Resources

Recreation

Impacts to recreation from continued grazing use within the Grass Creek Basin Allotment are expected to be very minimal due to the high degree of altered landscape from the current land uses observed within the allotment, primarily from oil and gas activities. This altered landscape and the urban settings within the area do not promote exceptional desired outdoor recreational experiences, which naturally limits the amount of recreational use within the area. Two-tracks created from motorized off-road use related to livestock operations will further alter the desired recreational settings by minimizing the physical naturalness, as well as alter the social settings by potentially increasing the amount of motorized use on the new two-tracks. Although these impacts may not be noticeable, adherence to the following off-road motorized use stipulation will minimize these impacts:

Limited cross-country vehicle travel is allowed for the purpose of maintaining existing range improvements or animal husbandry efforts if established access routes do not exist. Travel on or off wet or muddy road conditions should be avoided to prevent rutting and soil erosion.

Visual Resource Management

Livestock operations may introduce contrasting elements of line, form, color, and texture against the surrounding landscape. These elements may be observed from trails left by cattle trailing, modified mosaics expressed as smooth distinct forms from grazing use, linear elements from off-road motorized use associated with livestock operations, and structural forms used for livestock operations that will introduce contrasting elements against the surrounding natural elements. Most use will occur over frozen soil and water conditions, which will spread the livestock use other than concentrate the use. Dispersal of cattle use, over time, may decrease the contrasting elements created from concentrated use, thus enhancing the visual resources inventoried within the scenic quality rating units. In addition, due to high degree of unnatural elements within the area exhibited from the current land uses, primarily oil and gas, these contrasting elements from the propose alternative may not be noticed by the casual observer. Continued livestock use is within

VRM Class IV objectives, and impacts to the visual resource inventory within the scenic quality rating units within the allotment are expected to be minor.

4.2.7 Cultural Resources
Under the current policy (IM WO-99-039, IM WY-99-020, and Wyoming State Protocol) when there will be significant changes in the grazing permit a review of cultural records can be used to identify affects to known historic or unevaluated properties. Results of the file search indicate that Grass Creel Basin Allotment contains four (4) historic properties. No properties are located within known livestock concentration areas. Consultation was conducted with the State Historic Preservation Officer (SHPO) under the State Protocol (BLM Cultural Project 010-2012-032). Under current policy no additional analysis of known cultural resource sites is required.

In regards to unidentified cultural properties, there is a direct relationship between the rangeland health and potential effects to cultural resources. Provided rangelands remain in satisfactory condition and are not overgrazed, the potential effects to cultural resources from grazing lease renewals are expected to be minimal. Rangeland deterioration could constitute a viable threat to cultural properties. Alternative 2 is not expected to affect cultural resources given the fact that recent rangeland health standards were met and the recent rangeland monitoring results are acceptable

Affects to cultural resources are most probable in high use areas such as around water wells or bottlenecks where livestock congregate. Those facilities that were in place prior to the initial Resource Management Plan (RMP) are considered an existing disturbance. Per Section IV-D Identification d. Existing Disturbance of the Wyoming State Protocol, after a determination by a cultural resource specialists, undertakings within previously disturbed areas are generally authorized to proceed without additional class III inventory. Those facilities installed after the RMP were previously subject to consideration under the NHPA. Away from livestock focal points, surface disturbance is minimal and impacts to cultural resources are negligible. Any and all future range development projects within the allotment will comply with the Wyoming State Protocol process, are subject to relevant cultural investigations prior to permit issuance, and will be analyzed under a separate and site specific EA.

Because livestock grazing is a dynamic ongoing process, cultural resource specialists, in conjunction with BLM range management and the leasee, will periodically monitor and inspect heavy use areas and cultural resource sites following current policy (Grass Creek RMP and BLM Manual 8100 series). Any adverse effects discovered will be mitigated in accordance with the State Protocol. Standard cultural stipulations apply.

4.2.7 Paleontology
Significant paleontological localities are not common within the formations in the Grass Creek Basin Allotment. There are no recorded fossil localities within the allotment. Effects on paleontological resources are most likely to occur at heavy use areas where livestock congregate. Outside these areas effects are minimal and dispersed. Paleontological resources are primarily found on bare, non-vegetated outcrops which are created as the result of active erosion processes. These are not locations livestock congregate. Alternative 2 has a low potential to affect paleontological localities. Because of the low potential to affect significant paleontological localities, a site-specific field inventory was not completed. Standard paleontology stipulations apply.

4.3 Alternative 3 - Eliminate Livestock Grazing/Remove the Preference from the Grazing Base

4.3.1 Vegetation
Under this alternative, rangeland upland conditions may improve at a faster rate than under the previous alternatives. The most rapid rate of improvement in ecological condition may occur, and domestic livestock grazing would no longer have the potential to affect the resource conditions of the public rangelands. In the absence of livestock grazing, no herbaceous material would be removed by livestock. Plant growth would be optimized, and all plant material would accumulate as litter thereby further reducing the impacts or potential of soil and wind erosion. Surface litter provides for raindrop interception, slows runoff and thereby increases infiltration, reducing surface temperatures and evaporation.

4.3.1(a) Invasive Species
Under the “no grazing alternative” native species would not be subject to grazing pressure and would be more competitive with noxious and other invasive weeds. Monitoring and treatment would still be necessary but risk for new establishment of noxious weed populations would decrease.

4.3.2 Soils
With the cessation of livestock grazing on the public lands portions of the allotment, forage would not be removed by domestic livestock. This would result in more standing vegetation starting with the first year without livestock. This would complement the already stable conditions of the soil and watershed resources as reflected in rangeland health attributes of Soil & Site Stability and Hydrologic Function. The current trend toward greater stability would continue but at a more rapid rate. Potential improvements include a reduction in the size and distribution of the bare areas, further stabilization of drainage patterns and an increased amount of

surface litter. Increased surface litter would further protect the soil surface from the erosive forces of overland flow and rain drop impact. More water would be retained on the surface with a more significant reduction in runoff. Given the limited acres that would be affected by this alternative, and assuming continued grazing on the private lands, no significant changes are anticipated at the watershed level.

4.3.3 Hydrology/Riparian
Under the "no grazing alternative" there would be increased standing vegetation in upland and riparian areas would improve infiltration and create a reduction in naturally occuring runoff in the watershed. This would complement the already stable conditions of the soil and watershed resources as reflected in rangeland health attributes of Soil & Site Stability and Hydrologic Function.

4.3.4 Wildlife
In the absence of livestock grazing, any competition for forage or cover between livestock and wildlife would be eliminated, and the public land within the allotments would be available for exclusive use by wildlife, without disturbance by the presence of livestock and by livestock management activities.

4.3.5Non-Renewable Resources
Under the No Action Alternative, the proposed grazing allotment renewal would not occur. No resulting effects on non-renewable resources would be expected to occur beyond the current situation.

4.3.6 Recreation/Visual Resources
Recreation
Under Alternative Three, grazing in the allotment will be eliminated. Impacts analyzed in Alternative Two will not occur. Elimination of livestock use will maintain, or possibly alter the recreational settings to a middle country setting, primarily the social component. Evidence of livestock use would gradually disappear, which may alter the physical component settings to front or middle country settings. However, alteration of the physical components due to an elimination of livestock use within this allotment may go unnoticed due to the high degree of current observed land uses, primarily oil and gas. Alternative 3 will have minimal effects on recreation.

Visual Resource Management
Under Alternative Three, contrasting elements created from livestock operations, such as cattle trails, two-tracks created from off-road motorized use, and related facilities, will vanish. Lack of the additional contrasting elements will benefit visual resources, which will influence visual resource inventories within the affected scenic quality rating units. However, due to the high degree of current contrasting elements, primarily exhibited from oil and gas operations, beneficial impacts to visual resources from elimination of livestock use may go unnoticed.

4.3.7 Cultural Resources
Under the No Grazing Alternative, the proposed grazing allotment renewal would not occur. A review of the historical records on file in the Worland Field Office indicates that Grass Creek Basin Allotment, is not eligible for the National Register of Historic Places (36CFR§60.4(a) and (b)). No historic properties will be affected by this alternative.

4.3.8 Paleontology
Under the No Action Alternative, the proposed grazing allotment renewal would not occur. No resulting effects on paleontological resources would be expected to occur beyond the current situation.

5.0 Mitigation

Cultural Resources: The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO 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 site can be used (assuming in situ preservation is not necessary); and,

- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.

Paleontology: The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing paleontological localities, or for collecting vertebrate fossils. If paleontological materials are uncovered during operations, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO).

Within five (5) working days the AO will evaluate the discoveries and take necessary actions to protect or remove the resource. Decisions regarding the appropriate measures to mitigate effects to such resources will be made in consultation with the operator.

6.0 Cumulative Impact Analysis

The lands involved in the application have historically been used for livestock grazing, oil and gas development, wildlife habitat, and occasional recreational use. The Geographic scope of the Cumulative Effects Analysis is the Grass Creek Basin Allotment.
From Section 1 "This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing/transferring the grazing permit on the Grass Creek Basin Allotment." The timeframe of discussion, while vague, in this section begins prior to the Taylor Grazing Act, it includes the current action on the allotment and considers the timeframe for the next 10 years which coincides with the term of a grazing permit.

The Past (Relevant to Alternatives 1, 2 and 3)
During the era of homesteading, Western public rangelands were often overgrazed because of policies designed to promote the settlement of the West and a lack of understanding of these arid ecosystems. Congress then passed the Taylor Grazing Act of 1934, which led to the creation of grazing districts in which grazing use was apportioned and regulated. Under the Taylor Grazing Act, the first grazing district to be established was Wyoming Grazing District Number 1 on March 23, 1935 (http://www.blm.gov/wo/st/en/prog/grazing.html).

While there are no historical grazing records directly associated with each individual allotments from that time frame it can be reasonably assumed that the Grass Creek Basin Allotment endured grazing pressures that did not always account for the vegetative sustainability needs. In fact, according the allotment adjudication records for the the allotment, 355 federal AUMS were determined to be available on the allotment with annual spring, summer, and fall grazing. Of the 355 AUMs, 18 were designated for wildlife use thereby allowing 337 for grazing. In the early 1990's that number was adjusted to 300 AUM's which carried forth the 18 for wildlife but grazing was still allowed to occur in the spring, summer and fall annually. Over the last 20 or so years, the average number of AUMs utilized has been less than 300 AUMs, the spring grazing use has been limited, which provided for the Rangeland Helath Standards to be met. The average numbe of AUMs utilized the previous 10 years to the Standards Evaluation was 243 while the estimated carrying capacity is 253 (utilization level of 40%).

While vegetation is a renewable resource, that does not ensure that the proper or acceptable vegetative community will remain intact without proper stocking levels, proper use levels and proper timing of use. The past grazing use, if utilized as permitted, likely would not have ensured a healthy vegetative community.

The Present and Foreseeable Actions (Relevant to Alternative 1)
To date, there are no active proposals or applications for current or future Actions on the Allotment received by the BLM other than the current grazing application analyzed within this document.

The current grazing pemit allows for nearly yearlong grazing-the only timeframe that the vegetation is not utilized by livestock is March and April. The amount of AUMs estimated to be available is described above and at an average and appropriate utilization level there are fewer AUMs available than permitted (described at Section 4.1, Alternative 1) . The grazing use, if continued and utilized as permitted, would likely result in a decline in rangeland vegetative health due to repeated growing season use and by allowing more AUMs to be utilized than are estimated to be available at a seasonal acceptable utilization level. Also, a direct result of a rangeland in decling health is the reduction of herbaceous production therefore over time reducing the amount of AUMs available.

Resource	Incremental Consequence of the present actions
Soils	Reduced soil cover resulting in increased opportunity for wind and water erosion could cause a loss of A horizon and or compaction of the layer. Organic matter content would be reduced.
Hydrology/Watershed	Reduced soil cover resulting in reduced infiltration capabilities yielding increased overland flow and sedimentation of stream systems.
VRM	An increase in noticeable and observable contrasting elements of line, form, texture, and color against the surrounding natural elements would occur resulting from a change from healthy rangelands to a less desirable state.
Recreation	An increase in observable contrasting elements against the surrounding natural elements would occur, which would alter the desired recreational settings and recreational resources. The desired goals and experiences associated with healthy public rangelands would be altered to a less desirable state.
Wildlife	Reduced vegetative cover and production available to wildlife resulting in less feed /cover possibly affecting populations and or diversity of wildlife species.
Cultural/ Paleontology	Reduced soil cover through the change or loss of a proper vegetative community could result in the exposure and loss of resources through active erosion processes.
Invasive Vegetation	Increased ability of nonnative or weedy species to compete for resources

Reasonably Foreseeable Actions (Relevant to Alternative 2 and 3)
To date there are no active proposals or applications for current or future Actions on the Allotment received by the BLM other than the current grazing application analyzed within this document.

Alternative 2 would provide, during the 10 year grazing permit, a proper stocking rate based upon a proper use level and during a time of year that would have little or no impact on the capabilities of the vegetation's ability to prosper-given adequate environmental conditions. The amount of vegetation on the allotment (AUMs) exceeds that which would permitted for use and that use would be within an acceptable seasonal utilization rate. The impacts that may have occurred to vegetation in the past would be drastically reduced by grazing during the dormant season when the vegetation is at little or no risk of damage and during a time of year when soils are frozen, protected by annual litter accumulations or snow thereby improving the soil and vegetative community. Rangeland health and vegetation conditions would be maintained or improved by allowing the vegetative component the opportunity to initiate growth, produce seed, and replenish food reserves

Resource	Incremental Consequence of the foreseeable future actions Alternative 2
Soils	Ground cover would be maintained or improved thereby protecting the soil surface and A horizon from wind and water erosion. A compaction layer would be less likely to develop on soils utilized during a period of frrezing. Litter would accumulate, breakdown and provide for an organic matter content at the soil surface.
Hydrology/Watershed	Maintained or improved ground cover in the form of litter and vegetation would provide for improved infiltration rates, less overland flow potential, and therefore less sedimentation of local drainages and waterways.
VRM	The contrasting elements of line, form, texture and color of the current developemnts of the area against rangelands in acceptable or improving condition would be maintained.
Recreation	The desired goals and experiences associated with healthy public rangelands would be maintained or improved.
Wildlife	Habitat and feed sources would be maintatined or enhanced over time.
Cultural/ Paleontology	Resources would continue to be protected through vegetative cover and litter thus limiting the potential of exposure or loss from erosive forces.
Invasive Vegetation	Healthy rangelands provide for competition with non-native species or invasive species. The potential of invasive species encroaching or increasing would be lessened by the a grazing scheme that provides for native vegetative growth needs.

Alternative 3 would eliminate any domestic livestock grazing on the allotment therefore negating that use or perceived impacts with the other resources of the allotment.

Resource	**Incremental Consequence of the foreseeable future actions Alternative 3**
Soils	The potential of ground cover/vegetative cover development would be maximized thereby protecting the soil surface and A horizon from wind and water erosion. A compaction layer would not be developed as a result of grazing. Litter would accumulate, breakdown and provide for an organic matter content at the soil surface.
Hydrology/Watershed	The potential of ground cover/vegetative cover development would be maximized. The ground cover in the form of litter and vegetation would provide for improved infiltration rates, less overland flow potential, and therefore less sedimentation of local drainages and waterways.
VRM	The contrasting elements of line, form, texture and color as a result of grazing would not occur.
Recreation	The desired goals and experiences associated with healthy public rangelands would be maintained or improved. Grazing would no longer influence the recreation experience.
Wildlife	Habitat and feed sources would be maintatined or enhanced over time. Grazing would no longer have an influence competition for feed on the resource.
Cultural/ Paleontology	Resources would continue to be protected through vegetative cover and litter thus limiting the potential of exposure or loss from erosive forces.
Invasive Vegetation	Healthy rangelands provide for competition with non-native species or invasive species. The potential of invasive species encroaching or increasing would no longer be influenced by a grazing scheme.

7.0 EA Preparation/Consultations

Other Persons/Agencies Consulted:

If the Authorized Officer determines that an alternative is to be implemented, the BLM will issue a proposed decision in accordance with 43 CFR 4160, furthering the opportunity for any affected party to make comment, provide data, or make protest prior to the Decision becoming Final.

TRIBES, INDIVIDUALS, ORGANIZATIONS, or AGENCIES CONSULTED

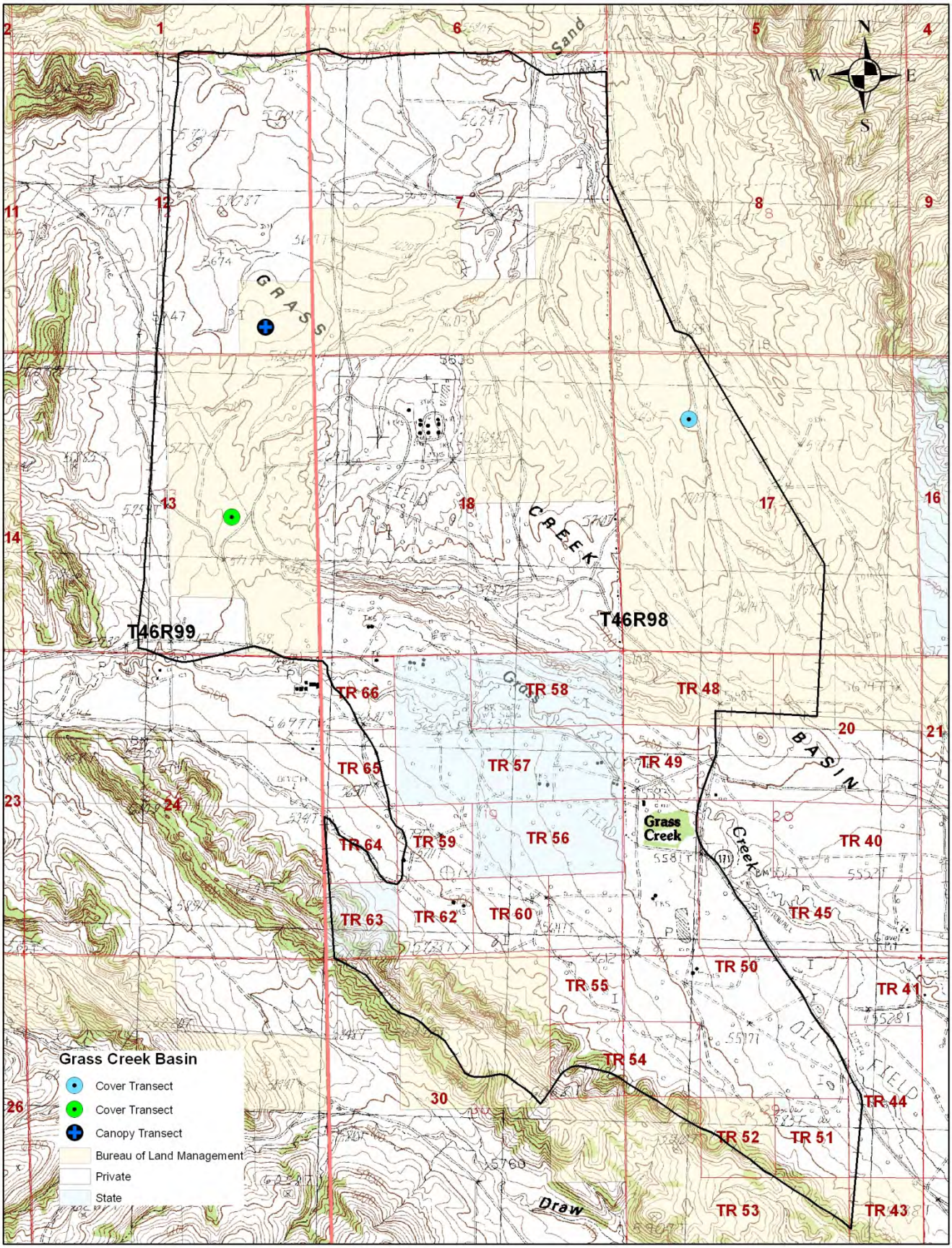
Person Consulted	Agency/Tribe/Organization
Rod Graves	*Graves Land and Livestock LLC*

LIST OF PREPARERS
The following Worland Field Office personnel reviewed or have been contacted with regard to this EA.
List of Reviewers

Resource	Name	Title
Cultural Resources	Marit Bovee	Archaeologist
Wildlife, T&E Animal	Tim Stephens	Wildlife Biologist
Recreation/VRM/Travel Management/Special Designations	Paul Rau	Recreation/Visual Specialist
Livestock Grazing/Vegetation	John Elliott	Range Management Specialist
T&E Plants	Karen Hepp	Range Management Specialist (T&E/Sensitive Plants)
Engineering	Monica Geopferd	Civil Engineer
Soils/Haz. Mat.	Steve Kiracofe	Soils Scientist
Invasive Species	CJ Grimes	NRS/Weeds
Water resources	Jared Dalebout	Hydrologist
Paleontology	Marit Bovee	Archaeologist
Geology	Pam French	Geologist
Lands	Carol Sheaff	Realty Specialist
Fuels	Eve Warren	NRS
Forestry	Jim Gates	Forester

Preparer(s): John Elliott, Rangeland Management Specialist, BLM
Date: September 14, 2012

Map 1: Allotment Map



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Grass Creek Basin Allotment 4/16/2010
SE Section 12, Canopy Transect (Artr)
looking northeast along 300' transect