

STATE SCHOOL LAND  
RECONNAISSANCE REPORT\*

1. Reconnaissance Date July 10, 1978
2. Legal Description: Sec. 36 Twp. 12N R. 72W
3. Geographic Location: County Larimer Other 2 miles south of  
the Wyoming State Line west of highway 287.
4. Acreage: Forest 385 Other (describe) 100 acre rock  
outcroppings, brush and rangeland.
5. Physical Features (boundaries, fences, section corners, roads, streams,  
water developments, etc.)  
The section itself is unfenced and only the NW section corner  
was located. The road is passable by 2WD pick-up. No water  
developments were located. See map for additional details.
6. Water for Fire Control Fish Creek and Georges Gulch (both flowing  
at the time of inspection)
7. Major Forest Type(s) Ponderosa pine, Douglas-fir
8. Estimated Volumes 3-5 MBF/A
9. Growth Data low to medium vigor
10. General Stand or Range Condition Fair condition - stable range  
trend.
11. Insects & Disease Mountain Pine Beetle is prevalent throughout  
the area. Groups of 10 to 50 bit trees may be found in scattered  
locations.

\* Upon completing report, send copy to state lands staff forester,  
Land Board forester, and Land Board. Report due within seven days  
following reconnaissance.

Additional Notes for S36 T12N R72W

General Stand Description

Most of this section is covered with fairly open grown Ponderosa pine, with volumes running from 3 to 5 MBF/A and heights in the 30 foot class, and DBH's under 12". Many of the sites appear poor with shallow rocky soils. Some Douglas-fir does occur on the northern aspects but usually on slopes exceeding 30%.

Some thinning should be done in the dense patches of Ponderosa pine and Douglas-fir where slopes permit. Also the mature and over-mature pine as well as the beetle killed trees should be harvested. These may be as much as 250 MBF of small sawlog material scattered along the bottoms and along the edges of the stands. There are several hundred beetle killed trees in the SW $\frac{1}{4}$  which could be harvested for firewood with perhaps a few house logs.

RPJkrp

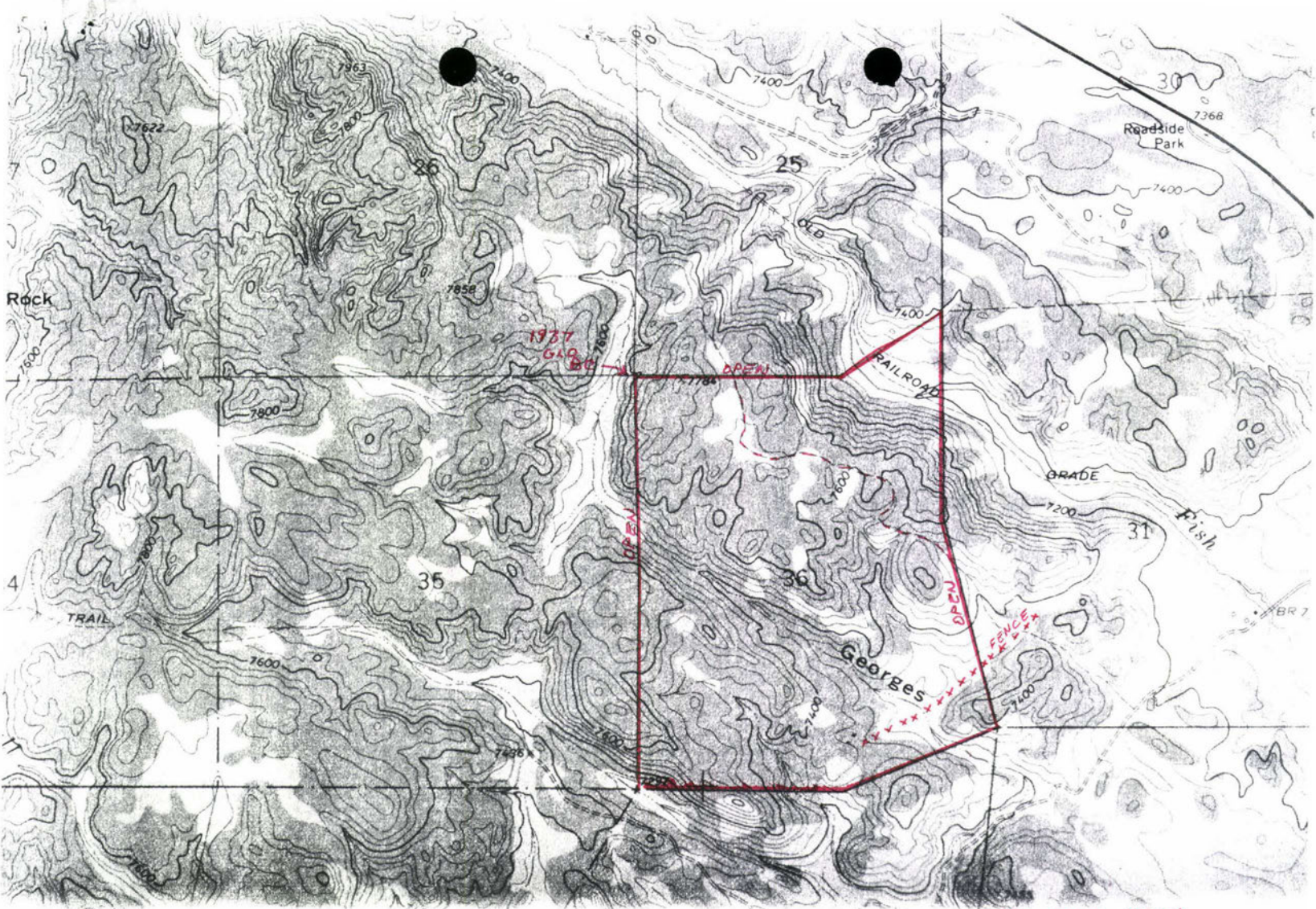
12. Available Forest Products Firewood, small sawlogs, a few posts  
and poles, and some Douglas-fir Xmas Trees.
13. Potential Markets Laramie or Fort Collins area
14. Cutting Recommendations See additional notes
15. Subdivision Potential Some suitable sites available in the open  
meadows, however, any brushy areas or steep areas must be avoided.
16. Recreation Potential No specific attraction here some hunting  
or hiking possible
17. Priority for Management Work: High \_\_\_\_\_ Medium \_\_\_\_\_ Low X
18. Management & Protection Goals Cut the mature and overmature  
Ponderosa and the beetle kills to increase the vigor of the  
stand and reduce fire hazard.
19. Lessee's Name John Clark Moen Virginia Dale, CO 80548
20. Watershed Condition or Erosion Some erosion occurring along the  
road bed at teh east section line.
21. Should State Retain or Dispose (give reasons) Grazing lease and  
moderate timber value.

(Attach copys of topog or sketch map)

Forester in Charge Jarvis Date September 5, 1978

Quad - Cherokee Park  
Photos - 774-54 (F.L. 56)  
Color 1975  
Fort Collins CSFS District





S36 T12N R72W



## S E R V I C E   A G R E E M E N T

THIS AGREEMENT, made this 17th day of July 1995, by and between State Board of Agriculture, on behalf of the Colorado State Forest Service, Colorado State University, Ft. Collins, CO 80523, hereinafter referred to as CSFS, and Woodland Management Consultants, P O Box 10, Ft Collins, CO 80522, hereinafter referred to as the CONTRACTOR; and

WHEREAS, the CONTRACTOR has the expertise to provide forest practice services; and

WHEREAS, the CSFS desires to implement forest practices described in this agreement.

NOW, THEREFORE, it is hereby agreed that:

1. CSFS warrants that they have authority from the State Board of Land Commissioners (SLB) pursuant to agreement dated July 1, 1991, as amended January 1, 1993 to grant all rights to the CONTRACTOR provided for in this Agreement. The property is described as follows:

S16 T1S R79W in Grand County  
S36 T3N R77W in Grand County  
S36 T7N R78W in Jackson County  
\*S36 T12N R72W in Larimer County  
S36 T1N R85W in Routt County


2. CSFS grants to CONTRACTOR the right of access to the above described property for the following purposes: develop and implement approved forest management plans, consistent with CSFS and SLB statutes, rules, regulations and standards.
3. CONTRACTOR agrees to provide the services specified in Paragraph 2 of this Agreement in consideration for: the following percentages of revenue generated from the sale of forest products as specified in CSFS and SLB approved forest management plans and annual work plans.

S16 T1S R79W	24 percent
S36 T3N R77W	26 percent
S36 T7N R78W	28 percent
S36 T12N R72W	25 percent
S36 T1N R85W	28 percent

4. It is understood between the CSFS and the CONTRACTOR that this Agreement shall begin on the date first above written, and shall remain in force five years dependent on satisfactory performance.
5. This Agreement may be terminated by either party thirty (30) days following written notice to the other party.

6. CONTRACTOR may assign rights provided for in this agreement to a subcontractor of its choice with the approval of the CSFS.
7. The CONTRACTOR shall maintain during the life of this agreement such liability & other insurance as is required by Colorado law.
8. This agreement may be extended due to inability of the CONTRACTOR to perform the work due to circumstances beyond its control or as mutually agreed to by the CSFS and CONTRACTOR. All extensions will be written and become a part of this Agreement.
9. Financial obligations of CSFS payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted and otherwise made available.
10. The CONTRACTOR agrees as part of this agreement that it will comply with all applicable laws regarding discrimination on the basis of race, creed, color, sex, or handicap including but not limited to Executive Order 11246 as amended or as may be further amended hereafter.
11. The laws of the state of Colorado and rules and regulations issued pursuant thereto shall be applied in the interpretation, execution and enforcement of this Agreement.
12. The signatories hereto aver that they are familiar with 18-8-301, et. seq., (Bribery and Corrupt Influences) and 18-8-401, et. seq., (Abuse of Public Office), C.R.S. 1973, as amended, and that no violation of such provision is present.
13. The signatories aver that to their knowledge no CSFS employee has any personal or beneficial interest whatsoever in the services or property described herein.

IN WITNESS WHEREOF the parties hereto have executed this agreement on the day first above written.

  
\_\_\_\_\_  
WOODLAND MANAGEMENT  
CONSULTANTS

  
\_\_\_\_\_  
COLORADO STATE FOREST SERVICE



Parcel # 22360-00-928

FOREST MANAGEMENT PLAN

Legal Description: Section 36, T. 12 N., R. 72 W.

Prepared by : Bill Gherardi; Woodland Management Consultants  
PO Box 10, Fort Collins, Co., 970-221-1336

Date : February 26, 1996

# TABLE OF CONTENTS

	<u>Page #</u>
I. Objectives	1
II. General Description	
A. Location	1
B. Topographic & Climatic Conditions	1
C. Economic Condition	1
D. Management Units	2
E. Current & Historical Land Use	2
F. Desired Condition	2
G. Impacts	2
III. Inventory	
A. Vegetation	3
B. Insects & Disease	4
C. Fire Hazard	4
D. Soil Types	4
E. Access Roads	4
F. Water Features	4
G. Cultural Features	5
H. Noxious Weeds	5
I. Wildlife Species	5
J. Endangered Species	5
K. Scenic Qualities	5
L. Archeological Sites	5
IV. Prescriptions	
A. Recommendations	5/6
B. Harvest Schedule	6
C. Special Requirements	6
D. Roads	7
E. Standards	7
F. Implementation Priority	7
G. Estimated Costs & Returns	7/8
V. Implementation Plan	8
VI. Appendices	8



## I. Objectives

- a. The State Land Board owns and operates this parcel as a trust. Thus, the long term health and productivity of the natural resources are important to the overall management emphasis. Furthermore, revenue generation is mandated by law.
- b. Mitigate future loss from mountain pine beetle.
- c. Promote healthy regeneration.
- d. Enhance the range resource.
- e. Maintain options for future land use.

## II. General Description

- A. Location- refer to Exhibit A. This section is located 2 miles south of the state line and 1 mile west of Highway 287.

- B. Topographic & Climatic Conditions

This section is divided from the west to the southeast by 2 intermittent streams. Slopes range from 5- 40% on all aspects. Scattered rock outcrops occur on the sidehills of intermittent drainages. Interspersed meadows occur throughout the section. Mean elevation is 7600 feet.

Local climate is characterized by 11.5 inches of rainfall, with 75% falling between April thru September. The average snowfall is 50 inches. Temperatures average 60 degrees in the summer. The average growing season is 86 days. Prevailing winds are from the west.

- C. Economic Condition

The surrounding private land is used for summer pasture for cattle. Changing ownerships of large parcels of private land has resulted in 35 acre subdivisions for vacation homes.

Current market conditions for wood products are good since federal ownerships have scaled back all wood sales. The Front Range has a variety of wood processors which use everything from sawlogs to firewood.

D. Management Units- refer to Exhibit B.

Management Units correspond to existing vegetation types on similar aspects.

E. Current & Historical Land Use

Current land use is for summer cattle range. Forest Moen owns the majority of surrounding land to this parcel and also has leased the grazing rights to this section for the last 40 years.

During the late '70's mountain pine beetle invaded the ponderosa pine, some selective logging was done in the most accessible areas. Spruce budworm invaded the douglas fir in the mid- '80's. Scattered individual trees were later attacked by douglas fir bark beetle and killed.

Historical land use has been for cattle range, and selective logging for railraod ties.

F. Desired Conditon

Forest management will create a healthy, fully stocked forest that utilizes the site potential. Maintain mountain pine beetle at endemic levels.

G. Impacts

Due to the topography and type of forest management proposed no visual impacts will be apparent. Further, since Forest Moen controls the only access there is no other available road access.

Timber harvest will improve domestic and big game habitat, since forest stands will be opened up, providing an oppurtunity for new grass and forb production.



### III. Inventory

#### A. Vegetation- refer to Exhibit B.

Meadow occupies 97 acres. The meadow is composed of native grasses; i.e. Idaho fescue, mountain muhly, Parry oatgrass and needlegrass. Normal growing season produces 500 - 900 pounds per acre of forage.

Non commercial forest occupies 89 acres. It is composed of scattered ponderosa pine poletimber, the average tree is 5 inch dbh, 26 feet tall with stocking levels of 35 square feet of basal area. Slopes are 40%+ with extensive rock outcrops and large surface boulders.

The remaining 324 acres is composed of 3 management units.

Management Unit #1 is 196 acres of open grown ponderosa pine sawtimber on a ridge and southeast facing slopes of less than 20%. The average tree is 10 inch dbh, 46 feet tall, 75 years old with a site index of 55, refer to Table 1. Scattered clumps of pine seedlings occur on edge openings. Individual douglas fir sawtimber trees are scattered throughout the stand. No evidence of mistletoe was found. Defects in the form of crook and forks occur on 5% of stems.

Management Unit #2 is 21 acres of douglas fir poletimber on northeast facing slopes of 30%. The average tree is 5 inch dbh, 34 feet tall, 60 years old with a site index of 45, refer to Table 1. Large diameter (12+ inch dbh) douglas fir occurs as individuals in the stand. All these trees are dead from bark beetle, with the majority blown over. The dead is not salvable.

Management Unit #3 is 107 acres of ponderosa pine sawtimber on east and south facing slopes of 10- 30%. The average tree is 11 inch dbh, 42 feet tall, 55 years old with a site index of 55, refer to Table 1. There is no mistletoe.

#### B. Insects & Disease

Mountain pine beetle occurs in endemic populations , isolated individuals have died in the last 3 years. Douglas fir beetle has killed isolated sawtimber trees from past spruce budworm defoliations ( 1982- 1986).

No mistletoe was noted in the pine. Large diameter pine (12+ inch dbh) have fire scars on 10% of the stems. The last known wildfire occurred prior to 1910 when the surrounding land was declared a national forest.

#### C. Fire Hazard

Using the criteria for wildfire hazard identification developed by the Colorado State Forest Service, the area has a derived hazard class of B. The area is characterized by medium density conifer (35 - 55% crown coverage) with litter as a surface fuel.

The risk to this section is a reoccurrence of epidemic mountain pine beetle which will create large patches of dead trees. Due to topography, access and lack of available water control of a wildfire would be difficult.

#### D. Soil Types- refer to Exhibit C.

Each soil type is described, as well as the capability and woodland suitability classes for each occurring soil type.

#### E. Access Roads

Existing roads are unimproved single land roads, refer to Exhibit D. The northeast corner of the section is bisected by an abandoned railroad line.

#### F. Water

All streams are intermittent. Flows are commensurate with snowmelt. All snowmelt drains to Georges Gulch.



#### G. Cultural Features

The east line of the section is fenced. Brass caps are on the southeast and southwest section corners.

#### H. Noxious Weeds

None found. Canada thistle and leafy spurge are known to occur in the county.

#### I. Wildlife Species

Blue grouse, Stellars jay, woodpeckers, thrushes, vireos, western meadowlark, golden eagle, snowshoe hare, jackrabbit, bobcat, red fox, mountain lion, mule deer, elk, pronghorn antelope, black bear and coyote are known to occur in this type of vegetation.

Most bird species are migratory, thus use is in the spring and summer. Available food for small mammals and big game is limited to meadows and intermittent stream bottoms.

#### J. Endangered Species

None found or known to exist.

#### K. Scenic Qualities

Existing meadows will be maintained. Tree canopy levels will be maintained by partial cutting.

#### L. Archeological Sites

None found.

### IV. Prescriptions

#### A. Recommendations

No management is scheduled in the meadow or non commercial forest.

Management Unit #1 will be managed with a 3 step shelterwood. The first entry will remove 30% of the basal area and 30% of the stems. Leave trees will have a crown of 40%+ with no visible signs of defect. This entry will thin out trees, particularly where they occur in overstocked groups, and stimulate grass production in the understory.

Subsequent entries will be in 20 - 30 years. The second entry will remove 40% of the basal area and 50% of the stems. The final entry will remove the remaining overstory to release the understory of saplings.

Management Unit #2 contains steep topography with the prescence of numerous surface rock and small tree size preventing an economic entry.

Management Unit #3 will be managed per the prescription for Unit #1.

#### B. Harvest Schedule

The following table contains the volume to be removed per the prescriptions:

Unit #	Entry #	Year	Type of Harvest	Removals mbf
1	1	1996	Shelterwood	300
	2	2016	Shelterwood	490
	3	2036	Overstory Removal	300
3	1	1996	Shelterwood	400
	2	2016	Shelterwood	375
	3	2036	Overstory Removal	200

#### C. Special Requirements

The access road will be left in place for use as fire access and future management. Slash will be confined to landings, piled and burned when there is enough snow on the ground to minimize wildfire loss.

Annual walk thru inspections will be performed to monitor regeneration and insect and disease incidence.

D. Roads are shown in Exhibit D.

Access is thru Moen property, an agreement is attached to Exhibit D. The existing roads can be used with improvements. Road surfaces need to be graded and culverts installed at stream crossings.

A short section of new road, 1500 feet, will be built along Georges Gulch to access Section 35. This road will be a 8 foot width, constructed of native material with a culvert installed at the stream crossing.

E. Standards

Mechanical logging will provide a good seedbed for regeneration. Slash will be piled in landings and burned when weather conditions permit. Specific parameters for timber harvest are detailed in Exhibit G.

Normal operating season is November 1 to March 1.

Personal contact was made with the grazing leasee, who also owns the surrounding land to the section. He had no opposition to forest management. Exhibit H depicts a sample letter to various agencies.

F. Implementation Priority

The first harvest entry will be completed within 2 years per Exhibit I.

G. Estimated Costs & Returns

Costs

road reconstruction- 3.5 miles	\$ 9000
new road construction-1500 feet	4000
Install 3 culverts	1500
road fee	1400

Total \$15900.



Returns

50 mbf dead @ \$5	\$ 250
700 mbf green @ \$30	21000
Total	<hr/> \$21250.

V. Implementation Plan

Exhibit E details all accomplishments.

VI. Appendices

Exhibit A- Location.

Exhibit B- Management Units.

Exhibit C- Soil Types.

Exhibit D- Road Access.

Exhibit E- Accomplishment Record

Exhibit F- Glossary of Terms.

Exhibit G- Sample Timber Sale Contract.

Exhibit H- Letter to Agencies.

Exhibit I- Annual Work Plan.

Table 1- Management Unit Stand & Stock Table.

Bibliography

ANNEX A

LOCATION - T.12 N; R.72 W -

7560

24

Mud

7413

Creek

7424

(287)

7400

25

Roadside  
Park

7368

X 7408

7400

OLD

Mud

7400

RAILROAD

X 7784

GRADE

7200

BM  
7112

Fish

Mud

36

31

BR 7120

Georges

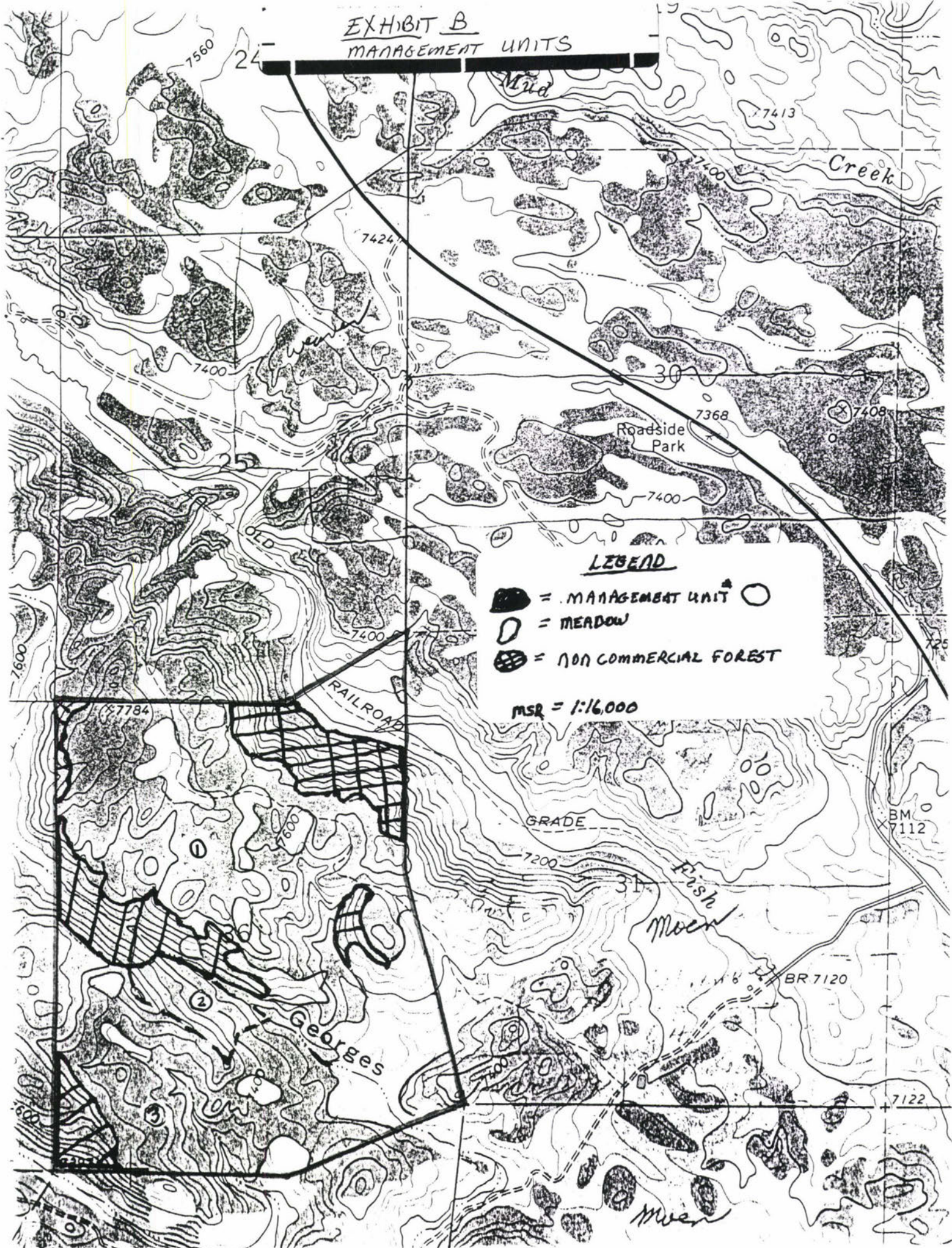
7122

7297




Mud



EXHIBIT B  
MANAGEMENT UNITS



LEGEND

-  = MANAGEMENT UNIT
-  = MEADOW
-  = NON COMMERCIAL FOREST

MSR = 1:16,000



SOIL TYPES

MING

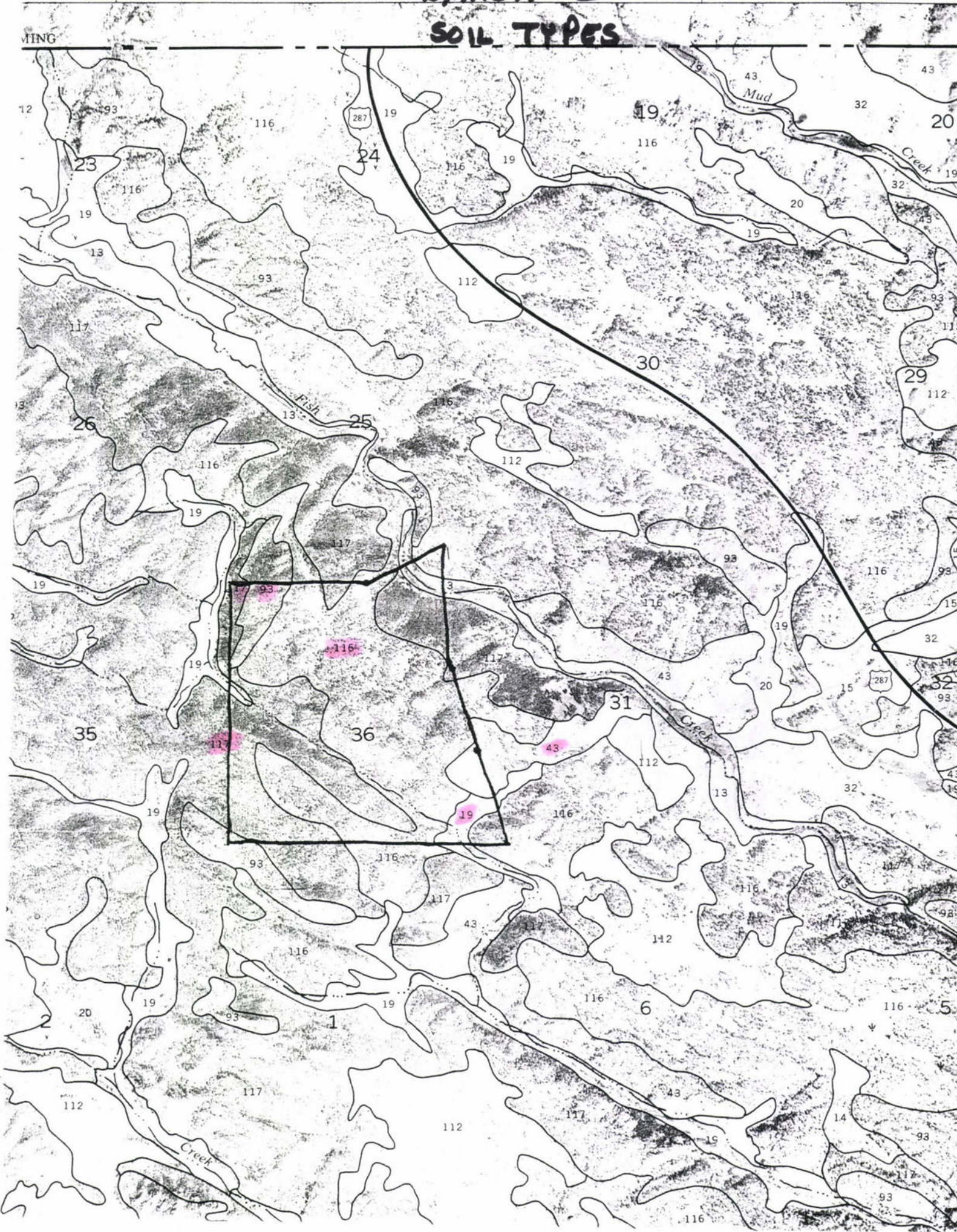




EXHIBIT C  
2044T J102

ish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable; 10 to 15 percent gravel; neutral; gradual wavy boundary.

A12—18 to 36 inches; dark grayish brown (10YR 4/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; soft, very friable; 25 percent gravel; neutral; gradual wavy boundary.

C—36 to 60 inches; brown (10YR 5/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable; 25 percent gravel; neutral.

The A horizon is sandy loam 20 to 55 inches thick. The C horizon is loamy sand or sandy loam. Reaction is slightly acid or neutral. Content of rock fragments, mainly fine granitic gravel, ranges from 0 to 35 percent.

**18—Breece coarse sandy loam, 0 to 3 percent slopes.** This nearly level soil is on terraces and in valleys. This soil has a profile similar to the one described as representative of the series, but the surface layer is slightly thicker.

Included with this soil in mapping are a few small areas of soils in which bedrock or a gravelly layer is at a depth of 40 to 60 inches. Some areas have more gravel or cobbles throughout the profile.

Runoff is slow, and the hazard of erosion is slight to moderate.

This soil is well suited to pasture and native grasses. A few small areas that can be irrigated are used for hay. Capability unit IVc-1, dryland; Loamy Park range site; not assigned to a windbreak suitability group.

**19—Breece coarse sandy loam, 3 to 9 percent slopes.** This gently sloping to strongly sloping soil is on terraces and in valleys. This soil has a profile similar to the one described as representative of the series, but the dark surface layer is about 40 inches thick.

Included with this soil in mapping are small areas of soils in which bedrock is at a depth of 40 to 60 inches and a few small areas of soils in which gravel is at a depth of 40 to 60 inches. Also included are a few scattered areas of Rock outcrop on steeper areas.

Runoff is medium, and the hazard of erosion is moderate.

This soil is suited to native grasses. Capability unit IVe-6, dryland; Loamy Park range site; not assigned to a windbreak suitability group.

**20—Breece coarse sandy loam, 9 to 30 percent slopes.** This strongly sloping to steep soil is on terraces and valleysides. This soil has the profile described as representative of the series.

Included with this soil in mapping are small areas of soils that are more sloping or less sloping. Also included are areas of soils in which bedrock or a gravelly layer is at a depth of 20 to 60 inches and a few small areas of Rock outcrop.

Runoff is medium to rapid, and the hazard of erosion is severe.

This soil is suited to native grasses. Capability unit VIe-6, dryland; Loamy Park range site; not assigned to a windbreak suitability group.

## Carnero Series

The Carnero series consists of moderately deep, well drained soils that formed in material weathered from sandstone. These soils are on upland ridges and are underlain by sandstone at a depth of 20 to 40 inches. Elevation ranges from 5,600 to 6,400 feet. Slopes are 3 to 30 percent. The native vegetation is mainly blue grama, western wheatgrass, some forbs and shrubs, and scattered ponderosa pine. Mean annual precipitation ranges from 15 to 18 inches, mean annual air temperature ranges from 47° to 49° F, and the frost-free season ranges from 135 to 150 days.

In a representative profile the surface layer is dark grayish brown loam about 10 inches thick. The subsoil is brown clay loam and heavy clay loam about 20 inches thick. Below this is hard sandstone.

Permeability is moderately slow, and the available water capacity is medium. Reaction is neutral.

These soils are used mainly for native grasses. A few areas are used for dryfarmed crops.

Representative profile of Carnero loam, 3 to 9 percent slopes, in native grass, about 1,000 feet south and 2,200 feet east of the northwest corner of sec. 29, T. 7 N., R. 69 W.:

A1—0 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky and moderate fine granular structure; soft, very friable; neutral; clear wavy boundary.

B21t—10 to 15 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; weak medium prismatic structure parting to weak to moderate medium subangular blocky; slightly hard, friable; thin patchy clay films on peds; neutral; clear smooth boundary.

B22t—15 to 30 inches; brown (7.5YR 4/4) heavy clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky structure; hard, firm; thin nearly continuous clay films on peds; neutral; abrupt wavy boundary.

R—30 inches; hard sandstone.

The A horizon is loam or fine sandy loam 7 to 11 inches thick. The B21t horizon is clay loam or heavy loam 5 to 9 inches thick. The B22t horizon is heavy clay loam or clay 10 to 20 inches thick. Reaction is neutral to mildly alkaline. The soil is generally non-calcareous, but some profiles have thin zones of lime accumulation immediately above the sandstone.

**21—Carnero loam, 3 to 9 percent slopes.** This gently sloping or strongly sloping soil is on uplands and valleysides.

Included with this soil in mapping are some small areas of soils in which bedrock is at a depth of 40 to 60 inches or less. Also included are some small areas of soils that have a subsoil of loam or light clay loam.

Runoff is medium, and the hazard of water erosion is moderate.

If irrigated, this soil is suited to barley, wheat, and pasture and, to some extent, alfalfa. Under dryland



3/4) moist; massive; hard, very friable; violently effervescent; streaks and small specks of calcium carbonate; moderately alkaline.

Thickness of the mollic epipedon is 20 to 40 inches. The A horizon is loam, fine sandy loam, or sandy loam 5 to 12 inches thick. The B horizon is loam, light clay loam, or sandy clay loam. The A and B horizons range from neutral to mildly alkaline. They are leached of lime but are slightly effervescent in many places because of additions of lime by irrigation water. A sand and gravel substratum is below a depth of 40 inches in some places.

**40—Garrett loam, 0 to 1 percent slopes.** This level soil is on terraces and fans (fig. 6).

Included with this soil in mapping are a few small areas of soils that have gravel on the surface and a few areas of soils in which gravel is at a depth of 40 to 60 inches. Also included are small areas of Harlan, Otero, Connerton, and Barnum soils.

Runoff is slow. The hazard of erosion is slight, but some areas near stream channels have been cut in places. Lower areas near the channels are flooded at times in spring or early summer.

If irrigated, this soil is suited to corn, sugar beets, beans, barley, alfalfa, and wheat. It is also well suited to pasture. Under dryland management it is suited to wheat and barley and it is well suited to pasture and native grasses. Capability units IIw-1, irrigated, and IIIe-6, dryland; Overflow range site; windbreak suitability group 5.

**41—Garrett loam, 1 to 3 percent slopes.** This nearly level soil is on terraces and fans. This soil has the profile described as representative of the series.

Included with this soil in mapping are a few small areas of Harlan, Otero, Connerton, and Barnum soils. Also included are a few areas of soils in which gravel is on the surface and at a depth of 40 to 60 inches.

Runoff is medium, and the hazard of erosion is slight or moderate. Areas near the stream channel receive overflow at times and cutting occurs in places.

If irrigated, this soil is suited to corn, sugar beets, beans, barley, alfalfa, and wheat. Under dryland management it is suited to wheat and barley. It is also suited to pasture and native grasses (fig. 7). Capability units IIe-1, irrigated, and IIIe-6, dryland; Overflow range site; windbreak suitability group 1.

### Gravel Pits

**42—Gravel pits.** This unit consists of areas where the soil and underlying gravel deposits have been removed. These areas have no value for farming and little value for grazing. Some areas are filled with water and provide habitat for fish and wildlife. Some areas are used for sanitary landfills. Also included are borrow pits and areas where material was removed in road construction, mainly along Interstate Highway 25. Capability unit VIIIs-1, dryland; not assigned to a range site or windbreak suitability group.

### Haploborolls-Rock Outcrop Complex, Steep

**43—Haploborolls-Rock outcrop complex, steep.** This complex consists of steep and very steep, cool soils and

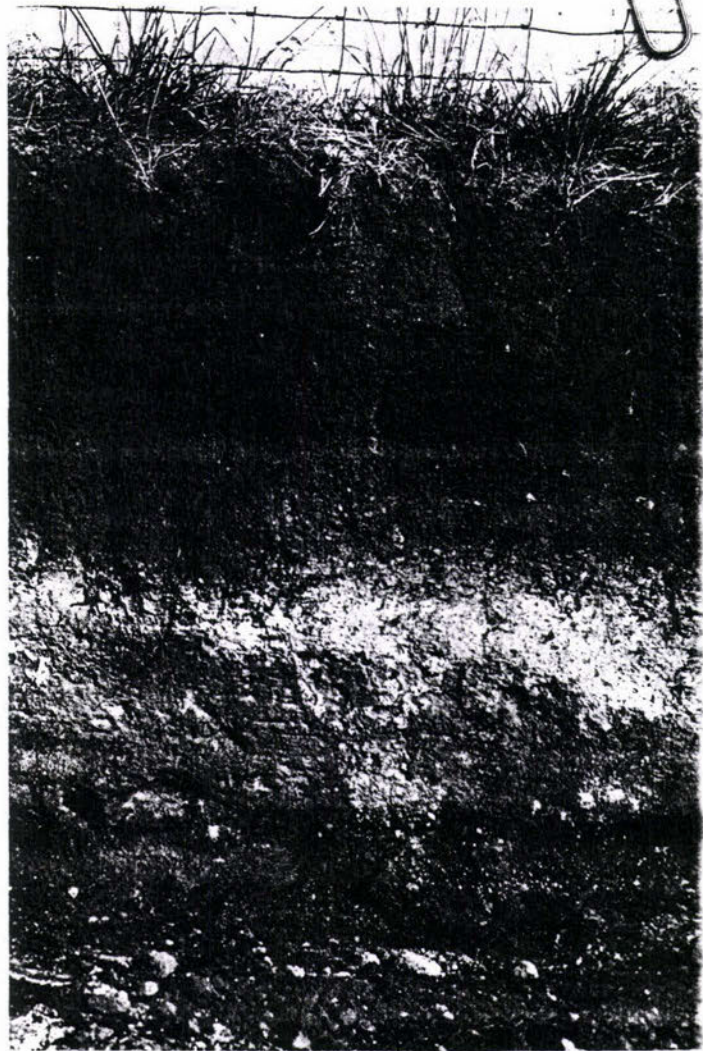


Figure 6.—Profile of Garrett loam, 0 to 1 percent slopes.

Rock outcrop on mountainsides and fans (fig. 8). The soils are extremely variable; about 50 to 70 percent of the unit, however, is stony and cobbly, dark colored soils that range from shallow to deep. These soils mainly have a surface layer and subsurface layer of sandy loam or loam that contain 10 to 25 percent cobbles and 20 to 35 percent stones. Stones that are on the surface are mainly boulders of granite, gneiss, and schist. About 30 to 50 percent of the mapped area is Rock outcrop. It is mainly on the steeper parts of the area, but it is scattered throughout.

Runoff is rapid, and the hazard of water erosion is severe.

These soils are used for a limited amount of grazing and are also used for wildlife habitat and watershed. Capability unit VIIe-1, dryland; Haploborolls in Stony Loam range site and Rock outcrop not assigned to a range site; not assigned to a windbreak suitability group.

### Haplustolls, Hilly

**44—Haplustolls, hilly.** These strongly sloping to



to a lesser extent, wheat, barley, beans, and corn. Under dryland management it is suited to pasture and native grasses and, to a lesser extent, wheat and barley. Capability units IIIe-1, irrigated, and IVe-3, dryland; Clayey Plains range site; windbreak suitability group 3.

**90—Renohill clay loam, 3 to 9 percent slopes.** This gently sloping to strongly sloping soil is on uplands. This soil has the profile described as representative of the series.

Included with this soil in mapping are some small areas of soils that are more sloping or less sloping and some small areas of soils that have a gravelly surface layer. Also included are small areas of Ulm, Heldt, Midway, and Thedalund soils.

Runoff is rapid, and the hazard of water erosion is severe.

If irrigated, this soil is suited to pasture and, to a lesser extent, wheat, barley, and alfalfa. Under dryland management it is suited to pasture and native grasses. Capability units IVe-1, irrigated, and VIe-1, dryland; Clayey Plains range site; windbreak suitability group 3.

**91—Renohill-Midway clay loams, 3 to 15 percent slopes.** This complex consists of gently sloping to moderately steep soils on uplands and ridges. It is about 55 percent Renohill clay loam and about 30 percent Midway clay loam. Renohill clay loam is smoother near the base of the slope, and Midway clay loam is steeper near ridgetops.

Included with these soils in mapping are about 15 percent areas of Ulm and Heldt soils, Shale outcrop, and gravel knobs.

Runoff is rapid, and the hazard of water erosion is severe.

These soils are suited to pasture or native grasses. Capability unit VIe-1, dryland; Renohill soil in Clayey Plains range site and Midway soil in Shaly Plains range site; both soils in windbreak suitability group 3.

### Riverwash

**92—Riverwash.** This unit is highly variable, mixed, water-washed sand and gravel deposits, commonly next to stream channels. These areas are flooded each year, generally in spring or summer. In some places willow trees protect the soil against erosion along the streambanks. Forage production is little and there is little value for grazing. These areas provide some shelter and habitat for wildlife. Capability unit VIIIw-1, dryland; not assigned to a range site or windbreak suitability group.

### Rock Outcrop

**93—Rock outcrop.** This mapping unit is bare or nearly bare rock. Included in mapping are areas of shallow and very shallow soils, mainly around the edges of the mapped areas.

Runoff is rapid. The hazard of water erosion is severe on the included soils and in adjacent areas that receive runoff.

This unit is used mainly for wildlife habitat and esthetic purposes. Capability unit VIIIs-1, dryland;

not assigned to a range site or windbreak suitability group.

### Satanta Series

The Satanta series consists of deep, well drained soils that formed in mixed alluvial and wind-deposited material. These soils are on uplands and high terraces. Elevation ranges from 4,800 to 5,600 feet. Slopes are 0 to 9 percent. The native vegetation is mainly blue grama, buffalograss, western wheatgrass, and cactus. Mean annual precipitation ranges from 13 to 15 inches, mean annual air temperature ranges from 48° to 50° F, and the frost-free season ranges from 135 to 150 days.

In a representative profile the surface layer is dark grayish brown loam about 7 inches thick. The subsoil is brown clay loam and pale brown loam about 16 inches thick. The underlying material is very pale brown loam about 21 inches thick over very pale brown fine sandy loam.

Permeability is moderate, and the available water capacity is high. Reaction is mildly alkaline above a depth of 18 inches and moderately alkaline below that depth.

These soils are used mainly for irrigated and dry-farmed crops and for pasture.

Representative profile of Satanta loam, 1 to 3 percent slopes, in cropland, about 50 feet west and 50 feet north of the southeast corner of sec. 4, T. 5 N., R. 69 W.:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable; mildly alkaline; clear smooth boundary.

B1—7 to 12 inches; brown (10YR 5/3) heavy loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable; mildly alkaline; clear smooth boundary.

B2t—12 to 18 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, firm; thin patchy clay films on peds; mildly alkaline; clear smooth boundary.

B3ca—18 to 23 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; soft, friable; fine thin patchy clay films; effervescent; visible secondary calcium carbonate as soft masses and spots; moderately alkaline; clear smooth boundary.

Clca—23 to 44 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable; violently effervescent; visible secondary calcium carbonate as spots and seams; moderately alkaline; gradual smooth boundary.



O1—2 inches to 0; partly decomposed needles, leaves, and twigs.

A1—0 to 2 inches; dark gray (10YR 4/1) gravelly sandy loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable; 15 percent fine granitic gravel; slightly acid; abrupt smooth boundary.

A2—2 to 5 inches; pinkish gray (7.5YR 6/2) gravelly loamy sand, dark brown (7.5YR 4/2) moist; weak thin platy structure; soft, very friable; about 15 percent fine granitic gravel; slightly acid; gradual wavy boundary.

B2t—5 to 16 inches; pinkish gray (7.5YR 6/2) gravelly loamy sand, dark brown (7.5YR 4/2) moist; massive; slightly hard, very friable; seams and nodules of brown (7.5YR 4/3) light sandy clay loam embedded in material similar to that of the A2 horizon; some clay films bridging sand grains and on peds of sandy clay loam material; 40 percent gravel and stones; slightly acid; clear wavy boundary.

R—16 inches; granite bedrock.

The A horizon is sandy loam or loamy sand 0 to 3 inches thick. The B2t horizon is heavy sandy loam or sandy clay loam. It consists of lamellae about  $\frac{1}{4}$  to  $\frac{3}{4}$  inch thick imbedded in a matrix of loamy sand or light sandy loam. Content of rock fragments ranges from 35 to 60 percent in the B2t horizon. Depth to bedrock ranges from 8 to 20 inches. Reaction ranges from slightly acid to neutral.

**116—Wetmore-Boyle-Moen complex, 5 to 40 percent slopes.** This complex consists of strongly sloping to steep soils on mountainsides and ridges. It is about 35 percent Wetmore gravelly sandy loam, about 25 percent Boyle gravelly sandy loam, and about 25 percent Moen loam. The Wetmore soil is in forest. The Boyle soil is more sloping in grassed areas. The Moen soil is flatter in grassed areas.

Included with these soils in mapping is about 15 percent areas of Ratake and Trag soils and Rock outcrop.

Runoff is rapid, and the hazard of erosion is severe.

These soils are suited to native grasses and woodland. They are also used for recreation. Capability unit VII<sub>s</sub>-1, dryland; Wetmore soil not assigned to a range site, Boyle soil in Rocky Loam range site, and Moen soil in Loamy Park range site; woodland suitability group 6d1; not assigned to a windbreak suitability group.

**117—Wetmore-Boyle-Rock outcrop complex, 5 to 60 percent slopes.** This complex consists of strongly sloping to very steep soils on mountainsides and ridges (fig. 13). It is about 35 percent Wetmore gravelly sandy loam, about 30 percent Boyle gravelly sandy loam, and about 25 percent Rock outcrop. Wetmore gravelly sandy loam is in forest, Boyle gravelly sandy loam is in open grassed areas, and Rock outcrop occurs throughout but is commonly near ridgetops and is steeper. The Wetmore soil has the profile described as representative of the Wetmore series. The Boyle soil

has a profile similar to the one described as representative of the Boyle series.

Included with these soils in mapping are minor areas of Redfeather and Schofield soils.

Runoff is rapid, and the hazard of erosion is severe.

These soils are suited to woodland or native grasses. They are also used for recreation, as sites for summer homes, and for wildlife habitat. Capability unit VII<sub>s</sub>-1, dryland; Wetmore soil and Rock outcrop not assigned to a range site, and Boyle soil in Rocky Loam range site; woodland suitability group 6x1; not assigned to a windbreak suitability group.

## Wiley Series

The Wiley series consists of deep, well drained soils that formed in uniform, silty, wind-deposited material. These soils are on uplands. Elevation ranges from 4,800 to 5,600 feet. Slopes are 1 to 9 percent. The native vegetation is mainly blue grama, western wheatgrass, and cactus. Mean annual precipitation ranges from 13 to 15 inches, mean annual air temperature ranges from 48° to 50° F, and the frost-free season ranges from 135 to 150 days.

In a representative profile the surface layer is brown silt loam about 6 inches thick. The upper part of the subsoil is brown and pale brown silty clay loam about 9 inches thick, and the lower part is pale brown silt loam about 8 inches thick. The underlying material is pale brown silt loam.

Permeability is moderate, and the available water capacity is high. Reaction is mildly alkaline above a depth of 10 inches and moderately alkaline below that depth.

These soils are used for irrigated and dryfarmed crops and for pasture and native grasses.

Representative profile of Wiley silt loam, 3 to 5 percent slopes, in cropland, about 50 feet north and 670 feet east of the southwest corner of sec. 23, T. 6 N., R. 68 W.:

Ap—0 to 6 inches; brown (10YR 5/3) silt loam, dark brown (10YR 4/3) moist; weak very fine granular structure; slightly hard, friable; calcareous; mildly alkaline; abrupt smooth boundary.

B21t—6 to 10 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 4/3) moist; weak to moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, friable; thin continuous clay films on soil aggregates; calcareous; mildly alkaline; clear smooth boundary.

B22tca—10 to 15 inches; pale brown (10YR 6/3) silty clay loam, dark brown (10YR 4/3) moist; weak to moderate medium subangular blocky structure; hard, friable; very thin patchy clay films on vertical and horizontal faces of soil aggregates; visible secondary calcium carbonate as soft spots; calcareous; moderately alkaline; gradual smooth boundary.

B3ca—15 to 23 inches; pale brown (10YR 6/3) heavy silt loam, brown (10YR 4/3)



irrigation water. On some soils chemical amendments are helpful. Salt-tolerant crops, such as barley sugar beets, can be grown until leaching is accomplished.

**Erosion control.**—To help to control erosion, close-wing crops should be grown on steeper slopes. Irrigating on the contour, or across the slope, and careful application of irrigation water help to prevent excessive erosion. Installation of concrete lined ditches pipelines helps to prevent erosion and also conserve water.

**Cropping systems.**—Use of cropping systems that include crops grown in rotation helps to maintain soil health and fertility and aids in the control of insects, diseases, and weeds. The use of alfalfa or another soil building crop aids in maintaining soil tilth and good permeability. Applying fertilizer according to soil tests necessary for continued high production. Applications of barnyard manure are also helpful in maintaining organic-matter content and are particularly helpful in restoring tilth on land-leveling cut areas.

### Management of Dryfarmed Soils<sup>3</sup>

About 35,000 acres in Larimer County Area is used for dryfarmed crops. Although there are dryfarmed areas scattered throughout the survey area, most of the dryfarmed soils are along the edge of the foothills.

The average annual precipitation of most of the dryfarmed areas ranges from 13 to 15 inches, but areas near or in the foothills receive as much as 17 inches per year. Most of this precipitation comes in spring and early in summer.

Because annual rainfall is so low, the conservation of moisture is important. Summer fallow helps to store soil moisture in sufficient quantities for crop production. Soils generally are summer fallowed one year and planted the next year.

As a result of summer fallowing, there is a hazard of wind and water erosion. Water erosion can be controlled to some degree by the use of terraces, either conventional channel types or flat channel terraces. These terrace systems, if supported by contour planting, generally reduce water erosion to a tolerable level. Grassed waterways can be used to carry off excess water.

Wind erosion is a hazard, particularly in winter and spring. Stubble mulch or crop residue on the soil surface helps to control wind and water erosion. It also aids moisture penetration and helps to maintain good tilth. Subsurface tillage with such implements as blades and sweeps helps to keep residue on the surface and controls weeds. Minimum tillage also helps to keep residue on the surface.

Stripcropping to control wind erosion is common in the Area. Alternate strips of crops and fallow are planted at right angles in the direction of the prevailing winds. Contour stripcropping helps to control water erosion and aids in the storage of moisture in winter.

If there is not enough stubble to protect the soil

from blowing, emergency tillage is necessary at times. Implements are used that bring clods to the surface, which helps to reduce soil losses.

### Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when used for field crops, the risk of damage when they are used, and the way they respond to treatment (4). The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, forest trees, or engineering.

In the capability system, the kinds of soil are grouped at three levels: the capability class, the subclass, and the unit. These are discussed in the following paragraphs.

CAPABILITY CLASSES, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V soils are not likely to erode, but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife habitat.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, range, woodland, or wildlife habitat.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture, range, woodland, or wildlife habitat.

Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat water supply, or esthetic purposes.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of

<sup>3</sup> ALBERT YOXALL, soil conservationist, Soil Conservation Service, helped prepare this section.



## CAPABILITY UNIT VI-6, DRYLAND

This unit consists of deep and moderately deep, well drained soils that have a surface layer of loamy fine sand to fine sandy loam and a subsoil or subsurface layer of loamy fine sand to clay. The underlying material is gravelly loamy sand to sandy loam in the deep soils and sandstone or granite in the moderately deep soils. One of the soils is shallow and is underlain by granite. Slopes are 1 to 25 percent. The annual precipitation is 13 to 20 inches, and the frost-free season is 60 to 100 days. Permeability is mainly moderate to rapid, and the available water capacity is mainly low to medium. One of the soils is slowly permeable in the subsoil, and one has a high available water capacity. The hazard of erosion is moderate to severe. Runoff is mainly medium to rapid. One of the soils has slow runoff and a slight hazard of erosion.

These soils are suited to native grasses or woodland.

Planned grazing systems help to maintain desirable grass species and, as a result, help to control erosion and increase the forage value. Reseeding can be helpful on some soils.

## CAPABILITY UNIT VI-2, DRYLAND

Longmont clay, 0 to 3 percent slopes, is the only soil in this unit. It is a deep, poorly drained soil that has a surface layer, subsurface layer, and underlying material of clay. The annual precipitation is 13 to 15 inches, and the frost-free season is 135 to 150 days. Permeability is slow, and the available water capacity is high. The hazard of erosion is slight. Runoff is slow. The soil is moderately alkaline to strongly alkaline. A water table is at or near the surface most of the year.

This soil is suited to native grasses.

If the soil is extremely wet, grazing should be limited to avoid compacting and trampling the grass. Reseeding is difficult because the soils are hard to work and are wet much of the time. Suitable grasses can be planted in the drier areas.

## CAPABILITY UNIT VII-1, DRYLAND

This unit consists of shallow to deep, well drained or excessively well drained soils that generally have a surface layer of gravelly sandy loam to clay loam and a subsurface layer or subsoil of clay to gravelly loamy sand. The underlying material ranges from clean sand and gravel to bedrock. Slopes are 5 to 60 percent. The annual precipitation is 13 to 18 inches. The frost-free season is mainly 60 to 100 days, but it is as much as 150 days in places. Permeability is mainly moderate or rapid, and the available water capacity is low. One of the soils is slowly permeable and has a low to medium available water capacity. The hazard of erosion is moderate to severe. Runoff is medium to rapid.

These soils are suited to native grasses.

Maintaining plant cover is important to control erosion. Planned grazing systems maintain plant cover. Reseeding is extremely difficult because of the slope and the content of coarse fragments in the soil.

## CAPABILITY UNIT VII-1, DRYLAND

This unit consists of shallow to deep, well drained or excessively drained soils that have a surface layer and subsoil of sandy loam to loam and a subsurface

layer of clay to loamy sand. The underlying material is clay loam to loam in the deep soils and sandstone, granite, or schist in the moderately deep and shallow soils. Some of the soils are gravelly, channery, stony. Slopes are 1 to 60 percent. The annual precipitation is 12 to 20 inches, and the frost-free season is 60 to 150 days. Permeability is mainly moderate to rapid, and the available water capacity is mainly low. Some of the soils are slowly permeable and have medium available water capacity. The hazard of erosion is moderate to severe on most of the soils. Runoff is medium to rapid. Some of the soils, however, have slow runoff and a slight hazard of erosion.

These soils are suited to native grasses or woodland.

Reseeding is very difficult or impossible because of the slope and the content of coarse fragments. As a result, planned grazing systems are necessary to obtain maximum use without depleting the plant cover. If trees are cut, logging roads should be designed and constructed with a minimum amount of disturbance to the vegetation. Use of equipment should be limited on the steep slopes to avoid gullying.

## CAPABILITY UNIT VIII-1, DRYLAND

Only Rock outcrop is in this unit. There is little or no plant cover. Rock outcrop has little value for farming or grazing. This land type is used mainly for wildlife habitat, watershed, and recreation.

## CAPABILITY UNIT VIII-1, DRYLAND

Riverwash and Aquepts, ponded, are in this unit. They have a small amount of vegetation, mainly grasses, sedges, and rushes. They have little or no value for farming or grazing. They are used for wildlife habitat and recreation and should be protected from burning and trampling by livestock.

## Estimated Yields

The average yields per acre that can be expected for the principal crops grown in the survey area under a high level of management are shown in table 2. In any given year, yields can be higher or lower than those indicated because of seasonal variations in rainfall and other climatic factors. Absence of a yield estimate indicates that the crop is not suited to or not commonly grown on the soil or that irrigation of a given crop is not commonly practiced on the soil.

The predicted yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Results of field trials and demonstrations and available yield data from nearby counties were also considered.

The latest soil and crop management practices used by many farmers in the county are assumed in predicting the yields. Hay and pasture yields are predicted for varieties of grasses and legumes suited to the soil. A few farmers may be using more advanced practices and obtaining average yields higher than those shown in the table.

The management needed to achieve the indicated yields of the various crops depends upon the kind of soil and the crop. Such management provides drainage, erosion control, and protection from flooding; proper planting and seeding rates; suitable high-yield crop



grows, mainly in small groves or as scattered trees. One small isolated grove of pinyon, northwest of the city of Fort Collins, is unique in that it is the most northwestern location in the United States for this tree.

The woodland areas are about equally divided between private and government ownership. Most of the government-administered land is national forest, but some is State and county owned.

Much of this woodland was logged by early settlers. Little of the privately owned woodland is managed for timber production, although it is used for poles, fenceposts, and firewood. Almost all of the area is used for grazing, recreation, and wildlife habitat. In recent years much of the privately owned woodland has been used as sites for summer and year-round homes.

### **Woodland suitability groups**

The soils in the mountainous part of Larimer County Area have been placed in woodland suitability groups to assist owners in planning the use of their soils for wood crops. Each group is made up of soils that are suited to the same kinds of trees, that need about the same management, and that have the same potential production.

Each woodland group is identified by a three-part symbol, for example, 601. The potential productivity of the soils in the group is indicated by the first numeral in the symbol: 1 is very high; 2, high; 3, moderately high; 4, moderate; 5, moderately low; and 6, low. These ratings are based on field determination of average site index. Site index of a given soil is the height, in feet, that the taller trees of a given species reach in a natural, essentially unmanaged stand in a stated number of years.

The second part of the symbol is a small letter. In this survey, *x*, *d*, and *o* are used. The small letter indicates an important soil property that imposes a hazard or limitation in managing the soils for trees. The letter *x* indicates that the soil has major limitations because of rockiness or stoniness. The letter *d* indicates that the soil has a restricted rooting depth. The letter *o* shows that the soils have few limitations that restrict their use for trees.

The third part of the symbol, another numeral, differentiates groups that have the same first and second parts in their identifying symbols.

Soils that have not been placed in a woodland suitability group are not suited to or are not used for woodland. The woodland suitability group is shown at the end of the mapping unit description for applicable soils.

The woodland suitability groups in the survey area are briefly described in the following paragraphs.

*Woodland suitability group 601.*—The soils in this group are suited to the production of ponderosa pine. They are capable of producing about 2,020 cubic feet per acre, or 7,800 board feet, in a managed, even-aged stand of 100-year-old trees. There are no major limitations to the use of the soils for woodland.

*Woodland suitability group 6x1.*—The soils in this group are suited to the production of ponderosa pine. They are capable of producing about 1,610 cubic feet per acre, or 5,300 board feet, in a managed, even-aged

stand of 100-year-old trees. The hazard of erosion is high, and equipment limitations and seedling mortality are moderate.

*Woodland suitability group 6x2.*—The soils in this group are suited to the production of Engelmann spruce. They are capable of producing about 3,000 cubic feet per acre, or 9,000 board feet, in a managed, even-aged stand of 90-year-old trees. Seedling mortality is severe, and the equipment limitations and windthrow hazard are moderate.

*Woodland suitability group 6d1.*—The soils in this group are suited to the production of ponderosa pine. They are capable of producing about 1,610 cubic feet per acre, or 5,300 board feet, in a managed, even-aged stand of 100-year-old trees. Seedling mortality is severe, and the hazard of erosion, equipment limitations, and windthrow hazard are moderate.

*Woodland suitability group 6d2.*—The soils in this group are suited to the production of lodgepole pine. They are capable of producing about 2,490 cubic feet per acre, or 4,900 board feet, in a managed, even-aged stand of 90-year-old trees. Seedling mortality is severe, and the hazard of erosion, equipment limitations, and windthrow hazard are moderate.

### **Windbreaks<sup>6</sup>**

The native vegetation on the plains in Larimer County Area is grass. Early settlers planted trees for beautification and protection, mainly around farmsteads. Many of these trees still survive, although most of them, mainly cottonwood and willows, in the plains are along the streams and drainageways.

Windbreaks and tree plantings can be very beneficial to landowners. They help to reduce home heating costs by reducing winds. They help to protect livestock from winter storms and drifting snow. They provide habitat for wildlife and birds and enhance the beauty and value of homesteads.

If windbreaks are planted, care is needed in establishing them. Evergreens are among the most desirable trees because they are long lived and resist damage from wind, snow, and disease. They provide protection from winds, which occur before deciduous trees leaf out. Evergreens grow much more slowly than deciduous trees for the first few years and should, therefore, be planted in rows separate from the faster growing short-lived broadleaf trees.

Climatic conditions limit the kinds of trees and shrubs that can be grown, and careful selection, therefore, is necessary. Cultivation reduces competition from weeds and grass and also the hazard of destructive fires.

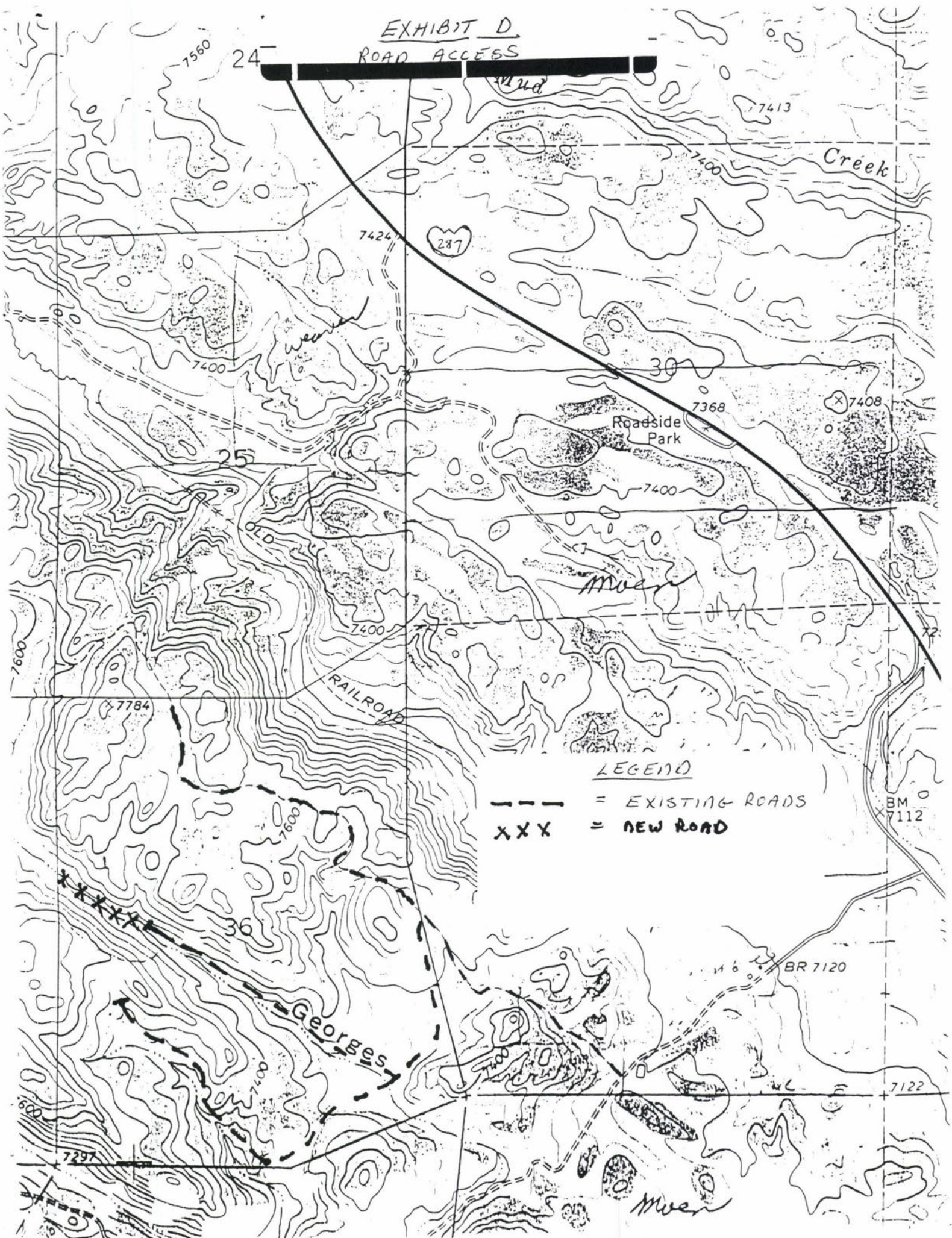
Replacing trees lost in the first years to develop a continuous, uniform wind barrier. Pruning should be limited to the removal of dead branches.

Protection of newly planted trees from livestock and other animals is important. Rabbits, mice, deer, and antelope can damage trees. Repellants can be applied in fall to help protect the young trees. Providing supplemental water to newly planted trees is beneficial and increases survival. Adequate water should be

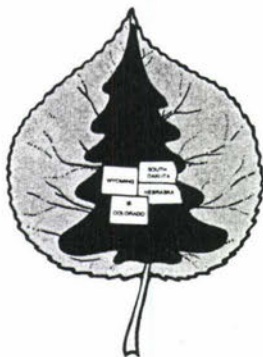
<sup>6</sup> SHERMAN J. FINCH, woodland conservationist, Soil Conservation Service, helped to prepare this section.



## ROAD ACCESS







Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(303) 221-1336

January 12, 1996

Forest Moen  
729 County Rd. 45 E  
Virginia Dale, CO 80548

Dear Mr. Moen,

This letter will serve as an understanding between Woodland Management Consultants and Forest Moen.

Forest Moen grants Woodland Management Consultants and its designated timber purchaser ingress and egress on the existing road as shown on Exhibit A.

*TIMBER HARVESTING WILL OCCUR FROM NOVEMBER 1 TO MARCH 1 OF EACH YEAR.*

Woodland Management Consultants agrees to;

1. Pay Forest Moen a fee of \$ 10 per truckload of logs hauled on said road. This road will be maintained in a serviceable condition during the term of this agreement.
2. Build a truck road as designated on Exhibit A with the necessary culverts to prevent stream erosion.

This letter of understanding will start on January 12, 1996 and terminate on July 1, ~~2000~~ 1998.

--- Forest Moen 1/29/96

Forest Moen

Date

Bill Gherardi 1/13/96

Bill Gherardi

Date



## ACCOMPLISHMENT LOG

[illegible]

# EXHIBIT E - GLOSSARY

## Glossary of terms

basal area	; A measure of density. It is the square footage of stump tops that would be exposed on an acre if all the trees were cut off at 4.5 feet above the ground.
blowdown	; Trees uprooted by the wind.
board foot	; A board foot equals 1 inch by 1 inch by 12 inches.
pole	; That portion of a tree composed of the main stem.
clearcut	; removal of the entire standing crop of trees.
commercial timber	; Trees that can be sold.
commercial land	; A tract of land capable of growing 20 cubic feet of wood per acre per year.
cubic foot	; A block of wood measuring 12 inches by 12 inches by 12 inches.
cord	; A measure of wood, equivalent to 128 cubic feet of stacked wood. One cord has 80 cubic feet of solid wood.
dbh	; A measure of tree diameter at 4.5 feet above the ground.
dwarf mistletoe	; A parasitic disease of pine trees which thrives off the food and water of its host, resulting in slow death of the host.
dwarf mistletoe rating system	; A system to evaluate trees for the severity of infection, by the presence of fruiting bodies and brooms. Based on a 6 point system. A rating of 3 or more means at least 90% of all trees are infected.
Forest type	; An area of similar tree species, e.g. ponderosa pine.
ips beetle	; A bark beetle which attacks pine trees, usually a secondary invader, after trees have been weakened by another pathogen.
mbf	; One thousand board feet.
Mountain pine beetle	; A bark beetle which attacks pine trees, notably ponderosa and is a primary invader.
Noncommercial timber	; Trees which cannot be sold.
Noncommercial land	; Land not capable of growing 20 cubic feet per acre per year.
Overstory	; Layer of foliage in a forest canopy including the trees in a timber stand.
patch cut	; A small clearcut, usually 5 to 8 times tree height.
post & poles	; Stand containing a majority of trees in 5 to 8.9 dbh class.
sawtimber	; Stand containing a majority of trees greater than 9.0 dbh.
seedlings	; Live trees with a diameter less than 1.0 inch.
serotinous cones	; characteristic of lodgepole pine which keeps viable seed encased until cone comes in contact with extreme heat.
silviculture	; phase of forestry dealing with the development and care of forests.
site	; An area considered in terms of its environment. vegetation, soil, aspect and slope are functions of a site.



site index ; measure of the productivity of an area. It is the height of a tree at 100 years of age. On trees less than 100, graphs are used to extrapolate to base age.

slash ; residue left after felling of timber, or accumulations from storms fire or insect infestations.

spruce budworm ; defoliating insect which attacks douglas fir and spruce. 3 to 5 years of defoliation will result in tree death.

stocking ; The number of trees on an area, usually an acre.

suckering ; The ability of aspen to regenerate from its root system.

thinning ; removal of some of the trees in a stand to improve the form and growth of the remaining trees.

understory ; The foliage layer beneath the forest canopy, usually composed of shrubs and grasses.

western gall rust ; A tree disease characterized by knobs of moon shaped deformities on branches or bole. structurally weakens tree.

**Mechanical harvesting**—Cutting with mechanized equipment, such as the carrier-mounted shear or feller-buncher, instead of by hand with a power saw (9).

**Mechanized logging**—Logging in which most or all of the hand labor is replaced by machines; requires a large outlay of capital (17).

**Shelterwood logging**—Method of harvesting timber so that selected trees remain scattered throughout the tract to provide seeds for regeneration and shelter for seedlings (12).

**Shelterwood system**—Even-aged silvicultural system in which a new stand is established under the protection of a partial canopy of trees. The mature stand is generally removed in a series of two or more cuts, the last of which is when the new even-aged stand is well developed (20).

EXHIBIT C

## TIMBER SALE CONTRACT

Agreement entered into this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_ between \_\_\_\_\_  
(Address) (Post Office) (State)  
hereinafter is called the seller, and \_\_\_\_\_ of \_\_\_\_\_  
(Name of Purchaser) (Address)  
(Post Office) (State), hereinafter called the purchaser.

Witnesseth:

The seller being the legal owner, or the lawful authorized agent, agrees to sell; and, the purchaser agrees to buy the following described timber upon the terms and conditions hereinafter stated.

### I. Location and Description

The cruise volume of the marked or designated timber is estimated at \_\_\_\_\_ from approximately \_\_\_\_\_ acres designated on-the-ground by the seller (see Exhibit A) prior to cutting and located in:

Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_

The timber has been designated for sale on the basis of \_\_\_\_\_ tree marking. All \_\_\_\_\_ trees are to be cut and paid for as outlined in Section III. The \_\_\_\_\_ trees are not to be cut and remain the property of the seller. The marking will consist of: \_\_\_\_\_

Sale boundaries are marked in the following manner: \_\_\_\_\_

### II. Contract

It is agreed upon between the seller and the purchaser that this contract begins \_\_\_\_\_, 19\_\_\_\_ and terminates on \_\_\_\_\_, 19\_\_\_\_. (Merchantable material, cut and left in the woods; and/or designated trees left uncut shall be paid for as specified in Section III. Any timber and/or other products left in the woods after the termination date will revert to the landowner. Undesignated trees which are cut and/or removed without the consent of the seller constitutes an illegal trespass).

### III. Payment

The purchaser agrees to pay the seller for the timber defined as follows:

SPECIES & PRODUCT	ESTIMATED QUANTITY & UNIT	MINIMUM SPECIFICATIONS					PAYMENT RATE PER UNIT OF MEASURE
		TREES		PIECE REQUIRED TO BE REMOVED			
		DBH (INCHES)	NO. OF MIN. PIECES	LENGTH (FEET)	DIB (INCHES)	PERCENT SOUND	

Payment is to be made prior to entry of each block, per Exhibit B. The scaling and measurement shall be handled and recorded as follows: \_\_\_\_\_

The title for the timber and other products remain in the seller's name until paid for by the purchaser.

### IV. Performance Bond

The purchaser shall furnish a performance bond in the amount of \_\_\_\_\_ or cash in lieu thereof to be deposited in escrow at \_\_\_\_\_. [Upon satisfactory completion of all contract requirements, in performance bond or cash + interest will be returned to the purchaser. Upon unsatisfactory completion of the contract requirements the performance bond or cash + interest will be turned over to the seller. (Forfeiture of bond by the contractor may limit eligibility on future contracts.)]

### V. Other Provisions [See Reserve Side for Continuation of Provisions]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



OTHER PROVISIONS CONTINUED:

TIMBER SALE CONTRACT

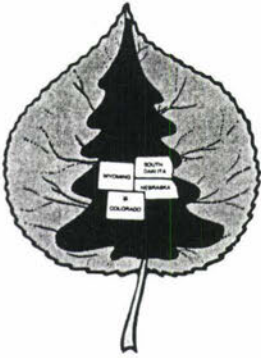
The PURCHASER agrees to cut and remove said timber in strict accordance with the following conditions:

- a. Stumps will not exceed 6 inches in height on the uphill side.
- b. PURCHASER will use existing roads, and they shall be kept free of logs, brush and debris resulting from the PURCHASER's operations.  
Any road used by the PURCHASER in connection with this sale that is damaged or injured beyond ordinary wear and tear through such use shall be restored by him to its original condition. All roads will be given proper closing maintenance before they are accepted as completed for closure.
- c. New roads for the sale will be designated on the ground by \_\_\_\_\_  
Purchaser agrees to cut all merchantable trees (as defined in Section III) in road right-of-way, dispose of stumps by \_\_\_\_\_  
and to lop and scatter all slash from cut trees within the clearing limits, outside of the road right-of-way: \_\_\_\_\_
- d. Procurement of rights-of-way affecting timber or lands outside the sale area shall be handled by the PURCHASER.
- e. PURCHASER shall protect property such as fields, fences, telephone, light, and power lines, building, ditches, bridges, etc., against unnecessary damage, and shall repair damage caused by him by restoring them immediately to the condition found prior to damage.
- f. As far as practical, all logging and hauling operations shall be in an orderly and progressive manner, exercising all possible protection to young growth and shall give due consideration to disturbances which will affect soil movement or impair and aggravate water movement.
- g. Slash disposal is the responsibility of the PURCHASER. All slash is to be lopped and scattered not to exceed a depth of 18" above the ground level with limbs not to exceed 8 feet in length. All slash created by spur road or skid trail or landing construction shall either be piled or shall be uniformly scattered off of the construction site. Slash is to be disposed of as the sale progresses. The PURCHASER agrees to comply with all local fire laws.
- h. No witness trees shall be cut in this timber sale.
- i. In the event of fire killed trees or insect infested trees, the Seller agrees to sell, and Buyer agrees to buy, the wood that is salvageable and merchantable at a stumpage value as negotiated between the seller and the buyer at the signing of the contract at the time the salvageable wood is processed on the sale area or removed from the sale area in tree length form.
- j. All trash & refuse generated by PURCHASER during his operation will be removed prior to contract termination.

VI. General Description

- a. This agreement, or any interest therein, may not be assigned by the PURCHASER without prior consent to the SELLER.
- b. This agreement shall be binding upon the heirs, administrators, executors, successors, or assigns of both parties.
- c. PURCHASER agrees to indemnify and hold harmless the SELLER from any and all damages, claims, or demands upon the part of third parties on account of any action by PURCHASER, his agents, servants, or employees, under this agreement, and furthermore, to respect and protect all right-of-way, easements, and servitudes belonging to any other party or parties, and enjoin not injure, damage, or waste the same in any way whatsoever, and does hereby indemnify and hold harmless the SELLER therefrom.
- d. In the event of dispute we agree to accept the decision of an arbitration board of three members; one to be selected by the SELLER, one by the PURCHASER, and the third to be selected by the first two.  
The arbiters must reach an agreement within 30 days.
- e. Purchaser agrees that all necessary licenses, permits, liability and workmen's compensation insurance will be his responsibility to insure compliance with all government laws, rules, and regulations.

EXHIBIT H



Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(303) 221-1336

February 26, 1996

Beverly Rove  
Colorado State Land Board  
PO Box 1094  
Craig, Co 81625

Dear Beverly,

I am proposing a timber sale in Section 36, T. 12 N., R. 72 W. The sale will remove 700 mbf of ponderosa pine from 300 acres. All slash will be piled and burned, when weather conditions permit. Sale access is thru private land, and is the only road access.

My purpose in writing you is to learn if you have any specific concerns pertaining to this action.

Sincerely,

Bill Gherardi  
Forester, Woodland Management Consultants

CC. LARIMER COUNTY COMMISSIONERS  
DIVISION OF WILDLIFE  
SCS  
DOUBLE BAR 7 RANCH



Exhibit I  
Annual Work Plan

Legal	; T.12 N., R. 72 W., Section 36.
Common Name	; Georges Gulch.
Prescription	; Shelterwood.
Practice Size	; 313 acres.
Species	; Ponderosa pine & douglas fir.
Products	; Firewood and sawtimber.
Volume	; 50 mbf dead, 700 mbf green sawtimber.
Direct Cost	; ?
Value	;\$21250.
Duration	; 2 years.
Other Benefits	; Promote regeneration. Improve range.
Why	; Prevent catastrophic loss from mountain pine beetle. Utilize site potential in thrifty leave trees.
Submitted by	; Bill Gherardi; Woodland Management Consultants.

TABLE 1  
MANAGEMENT UNIT STAND TABLE

MGT. UNIT #	ACRES	SPECIES / SIZE CLASS	AVG. DBH	AVG. HT.	AGE	BASAL AREA PER ACRE	TREES PER ACRE	VOLUME PER ACRE	SITE INDEX
1	196	PONDEROSA PINE SAWTIMBER	10	46	75	80	140	5330 BOARD FEET	55
2	21	DOUGLAS FIR POLETIMBER	5	34	60	110	450	9 CORDS	45
3	107	PONDEROSA PINE SAWTIMBER	11	42	55	140	230	7400 BOARD FEET	55

UNIT #	# PLOTS	BAF	SE
1	19	20	± 14
2	3	20	± 18
3	10	20	± 15

Initials	Date
Prepared By	
Approved By	





# DEPARTMENT OF HEALTH AND ENVIRONMENT

Environmental Health Division  
1525 Blue Spruce Drive  
Fort Collins, CO 80524-2004  
(970) 498-6775

Larimer County Emergency Services .....498-5302  
Poudre Fire Authority.....221-6570  
Loveland Fire Dept.....962-2537  
Berthoud Fire Department.....532-2264

## APPLICATION TO OBTAIN A BURNING PERMIT

I, BILL GHERARDI Phone # 970-481-4471  
(Name of Applicant) Home Daytime

do hereby request a burning permit for the date and time as follows:

NOV/DEC AS SNOW DEPTH PERMITS

Location of Proposed Burn: (Address of burn site; include directions to property and specific burn location on property.)

SECTION 36, 12 NORTH, 72 WEST 2 HWY 287 NORTH TO  
MOEN RANCH, GO WEST 1 1/2 MILES TO SLASH PILES,

Mailing Address (if different from street address above):

STATE LAND BOARD  
C/O COLORADO STATE FOREST SERVICE  
FOOTHILLS CAMPUS  
FT. COLLINS, CO 80525

Type of Material to be Burned: SLASH IN PILES Amount: 10 PILES - 100 FT<sup>3</sup> EACH  
(Acres or Cu. Ft. etc.)

Signature of Applicant: [Signature] Date: 11/3/03

Approved, Disapproved [Signature] Date: 11-3-03  
Signature of LCDHE Authority

Special Instructions: No trash or stumps

Approved, Disapproved [Signature] Date: 11/4/03  
Signature of FPD Authority

Livermore FPD Phone # 472-5592  
Name of Fire Protection District

Reason for Denial: \_\_\_\_\_

Special Instructions: ALL ATTACHED REGULATIONS SHALL APPLY

On day of burn, please notify the following: ☒ Larimer County Communications Center: 416-1985  
☒ Fire Protection District Listed Above

THIS PERMIT NOT VALID UNLESS SIGNED BY ALL APPROPRIATE AUTHORITIES

This permit invalid after 4-1-04

Route: White - Owner, Yellow - Fire Dept., Pink - Health Dept.



**PURCHASING DEPARTMENT**  
FORT COLLINS, CO 80523-6010  
PHONE (970) 491-5105 FAX (970) 491-5523

DATE

PURCHASE ORDER

11/06/96

P513911

**PURCHASE ORDER**

TERMS

F.O.B.

QUOTE NO./QUOTE DATE

EXPECTED DELIVERY DATE

N

NOT APPLICABLE

B900290

PURCH. CONTACT

PHONE

DEPT. NO.

JOHN C. TYLER

(970) 491-5107

Q208511 5060

V0000170050

V  
E  
N  
D  
O  
R

WOODLAND MGMT CONSULTANTS  
P O BOX 10  
FORT COLLINS CO 80522

S  
H  
I  
P  
  
T  
O

REFERENCE P.O. P513911

*Mike Babler*

ACCOUNT NUMBER			PERCENT	AMOUNT	ACCOUNT NUMBER			PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION				UNIT PRICE		EXTENSION
			SERVICE AGREEMENT						
001			PROVIDE FOREST MANAGEMENT SERVICES AS PER REQUEST FOR PROPOSAL B900290 TERMS, CONDITIONS AND SPECIFICATIONS:						
002			PAYMENT PROCESSED AGAINST THIS PURCHASE ORDER ARE TO COMPENSATE THE VENDOR FOR WORK COMPLETED ON BEHALF OF COLORADO STATE FOREST SERVICE. PAYMENT AMOUNT IS A PERCENTAGE OF THE REVENUE DERIVED FROM THE SALE OF FOREST PRODUCTS FROM INDIVIDUAL PARCELS OF LAND. PAYMENTS ARE ONLY MADE AFTER REVENUE IS DEPOSITED IN CSU/CSFS ACCOUNTS.						
003			SECTION 36, TOWNSHIP 03 NORTH, RANGE 77 WEST @ 26% SECTION 16, TOWNSHIP 07 NORTH, RANGE 78 WEST @ 28% SECTION 36, TOWNSHIP 12 NORTH, RANGE 72 WEST @ 25%  REVENUE FROM THIS SALE IS ON DEPOSIT AT						

TOTAL

CONTINUED

PAYMENTS					PAYMENTS				
C <sub>PF</sub>	DIS CODE	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	C <sub>PF</sub>	DIS CODE	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT

\$ \_\_\_\_\_  
DATE \_\_\_\_\_  
INITIALS \_\_\_\_\_

DEPARTMENT





**PURCHASING DEPARTMENT**  
FORT COLLINS, CO 80523-6010  
PHONE (970) 491-5105 FAX (970) 491-5523

DATE  
11/06/96

PURCHASE ORDER

P513911

**PURCHASE ORDER**

TERMS

F.O.B.

QUOTE NO./QUOTE DATE

EXPECTED DELIVERY DATE

PURCH. CONTACT

PHONE

DEPT. NO.

V0000170050

V  
E  
N  
D  
O  
R

WOODLAND MGMT CONSULTANTS  
\*\*\* PO CONTINUATION \*\*\*  
\*\*\* PAGE NUMBER BELOW \*\*\*

S  
H  
I  
P  
T  
O

REFERENCE P.O. P513911

ACCOUNT NUMBER			PERCENT	AMOUNT	ACCOUNT NUMBER			PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION			UNIT PRICE		EXTENSION	
			CSU AT THIS TIME.						
			NOT TO EXCEED \$165,000.00						
004	1.00	LOT	SPLIT FUNDING			15,000.0000		15,000.00	
			1-92550-4550						
005	1.00	LOT	SPLIT FUNDING			100,000.00		100,000.00	
			1-92560-4550						
006	1.00	LOT	SPLIT FUNDING			50,000.0000		50,000.00	
			1-92600-4550						
			192610						
			SB						
			CLOSE OUT CHECK LIST						
			Rcvg C PO to <u>Wilson</u> Date <u>11-14-96</u>						
			FY+ <u>Wattles</u>						
			Rcvg C Rtd, Dtd _____						
			CSU Rcvg Rpt, to Pchg _____						
			Memo to Pchg _____						
			Memo to CR _____						
			Inv to A/P (keep copy) _____						

TOTAL \$ 165,000.00

PAYMENTS				PAYMENTS				APPROVED FOR PAYMEN
CP	DIS	INVOICE NUMBER	INVOICE DATE	CP	DIS	INVOICE NUMBER	INVOICE DATE	
								\$ _____
								DATE _____
								INITIALS _____

DEPARTMENT

To: John Tyler@Agent@Purchasing  
Cc: Barbara Berg@admin@CSFS  
Bcc:  
From: Thomas Ostermann@Admin@CSFS  
Subject:  
Date: Monday, October 28, 1996 11:31:50 MST  
Attach:  
Certify: N  
Forwarded by:

-----

John:

The purchase order requests for Western Bionomics and Woodland Managment Consultants were based on RFP B900290. The responses to this RFP were for compensation, for work to be completed on behalf of the Colorado State Forest Service, to be a percentage of the revenue to be dirived from the sale of forest products from individual parcels of land.

In the case of Western Bionomics the percentage is twenty (20%) for Section 16, Township 01 south, Range 81 west; and twenty seven (27%) for Section 16, Twonship 05 north, Range 78 west.

For Woodland Management Consultants the compensation peercentage rate is twenty six (26%) for Section 36, Township 03 north, Range 77 west; twenty eight (28%) for Section 36, Township 07 north, Range 78 west; and twenty five (25%) for Section 36, Township 12 north, Range 72 west.

The requested amount for the purchase orders is based on the estimated value of the percentage from sales in approved work plans for the fiscal year. The purchase order only obligates CSFS/CSU to pay the percentage fo revenue that these consultants bring in. Payment is only made AFTER the total revenue is deposited in CSU accounts. Total payments can not exceed the authorized amount from the purchase orders.

The requested \$30,000.00 for Western Bionomics is for one sale that CSFs currently owes \$25,764.40 for a sale on S16,T05 N, R78W. The revenue has already be deposited.

For Woodland Managment Consultants the request amount is to pay the percentage for "anticipate" revenue to come in during the fiscal year.

Once the purchase orders are issued CSFS request payment based on that purchase order for the amount for which revenue has been collected.

If you need additional information, please let me know.

Thanks for your help!





Colorado State University  
Fort Collins, Colorado 80523  
(303) 491-6303  
FAX: (303) 491-7736

October 15, 1996

Bill Gherardi  
Woodland Management Consultants  
P O Box 10  
Ft Collins, Co 80522

Dear Bill:

By this letter it is mutually agreed that the Service Agreement dated July 17, 1995 is canceled.

The provisions of the Service Agreement, along with the provision of the Requests for Proposal #B900290, dated April 3, 1995 will be referenced in a purchase order to be issued to you by Colorado State University.

A handwritten signature in dark ink, appearing to read "Thomas W. Ostermann", written over a horizontal line.

Thomas W. Ostermann  
Supervisor  
Forest Management Division

A handwritten signature in dark ink, appearing to read "Bill Gherardi", written over a horizontal line.

Bill Gherardi  
Owner  
Woodland Management Consultants

To: Gary Kraft@Agent@Purchasing  
Pat Griego@Agent@Purchasing  
John Tyler@Agent@Purchasing, Barbara Berg@Admin@CSFS  
Thomas Ostermann@Admin@CSFS  
Cc: Judy Schmidt@Legal@CSUS\_FC  
Dennis Shackelford@Admin Svcs@VPAdmin  
John Schneider@Admin@Purchasing  
Bcc:  
From: Cathy Clark@Admin Svcs@VPAdmin  
Subject:  
Date: Monday, September 30, 1996 14:34:38 MDT  
Attach:  
Certify: N  
Forwarded by:

---

As we've been discussing, there is a problem with the dates on the purchase requisitions and contract authorizations related to the files on Western Bionomics and Woodland Management. Legal is unable to approve agreements that indicate that a consultant has been performing (and should be paid for such performance) before proper University approvals are made for that performance. We must take proper steps so that consultants are not performing before contract authorization.

In the meantime, these two consultants need to get paid, so I am sending the files back to purchasing to coordinate documents that allow the consultants to be paid while staying within applicable rules and regs. Please let me know if there is another way to make these deals "right" and how I might be able to do that. Otherwise, I must continue to turn these files back so that the proper documentation is in place.

In my conversations with some of you, there seems to be agreement that we need to have better information about the process so that this date problem doesn't happen. I would welcome your thoughts on these types of issues. If I can meet with you to gain more understanding, I would appreciate that opportunity as well. Please let me know.



To: TOstermann  
Cc: JTyler@Agent@Purchasing  
Bcc:  
From: Barbara Berg@Admin@CSFS  
Subject: Certificate of Insurance  
Date: Wednesday, August 21, 1996 9:20:47 MDT  
Attach:  
Certify: N  
Forwarded by:

-----  
Need your assistance please - need certificate of insurance from Western Bionomics LLC and Woodland Management Consultants to be included with Purchase Orders. There should be a statement such as "State of Colorado, State Board of Agriculture and/or Colorado State University are listed as additional insured."

Please have both vendors fax a copy to John Tyler at 970-491-5523.

Thanks  
Barbara

STATE OF COLORADO REQUIRED CONTRACT PROVISIONS\*  
ACQUISITION OF GOODS AND SERVICES  
CONTRACT ACCEPTANCE

RE: AGREEMENT BETWEEN:

the Colorado State Board of Agriculture by and through Colorado State University for the use and benefit of College/Department of Colorado State Forest Service

(hereinafter: "CSU") AND Woodland Management Consultants  
(hereinafter: "Vendor").

CONCERNING: Forest practices per old agreement and consisting of:  
SPECIAL PROVISIONS, 2 pgs.; PURCHASE ORDER TERMS AND CONDITIONS; if checked here ☒, INDEPENDENT CONTRACTOR PROVISIONS, 1 pg.; and the Vendor's contract consisting of \_\_\_\_\_ pages (the "Vendor Contract"), collectively referred to as the "Agreement".

THE ATTACHED Vendor Contract is hereby accepted by CSU subject to and conditional upon the following:

- 1. By this reference, the attached SPECIAL PROVISIONS, PURCHASE ORDER TERMS AND CONDITIONS, and INDEPENDENT CONTRACTOR PROVISIONS are incorporated into and made a part of the Agreement. Any conflict among the various components that constitute the Agreement shall be resolved by reference to such components in the following order of priority: (1). Contract Acceptance form; (2) Special Provisions; (3) Purchase Orders Terms and Conditions, and (4) Vendor Contract.
- 2. As a State funded commitment, CSU is authorized to expend only the sums shown on the CSU Purchase Order accompanying the Agreement for the services and/or products to be provided thereunder. Financial obligations of the State and CSU payable after the current State fiscal year for goods and services to be provided under the Agreement are contingent upon funds for that purpose being appropriated, budgeted and otherwise made available as evidenced by the issuance of another CSU Purchase Order. If the Agreement involves a lease-purchase transaction; (i) any re-appropriation must be evidenced by the issuance of a new CSU purchase order for each succeeding fiscal year during the term of the Agreement; (ii) an event of non-appropriation shall not be deemed a default under the Agreement; and (iii) in the event of non-appropriation, CSU shall have no further obligation to the Vendor and Vendor's recourse shall be expressly limited to the equipment that is the subject of its purchase money security interest.
- 3. Except as provided in paragraph •2. above, any provision(s) in the Vendor Contract imposing financial liability upon the State or CSU, whether such liability be conditional, contingent, indemnity, or otherwise, shall be considered null, void and unenforceable.
- 4. CSU, as an entity of the State of Colorado, and its employees are self-insured (\$150,000/\$600,000) through the State and are entitled by law to certain immunities. Any provision of the Agreement imposing insurance requirements upon CSU and/or the State shall be considered satisfied by said self-insurance. No provision contained in the Vendor Contract shall be deemed to or result in any waiver of any governmental immunities provided by law.
- 5. A party will be considered in default of its obligations under the Agreement if such party should fail to observe, to comply with, or to perform any term, condition, or covenant contained in the Agreement and such failure continues for ten (10) days after the non-defaulting party gives the defaulting party written notice thereof. In the event of default, the non-defaulting party, upon written notice to the defaulting party, may terminate the Agreement effective the date specified in the notice, and may seek such other and further relief as may be available at law or in equity.
- 6. Any legal proceeding arising from the Agreement shall be filed in the City and County of Denver, State of Colorado.
- 7. The Agreement is intended as the complete integration of all understandings between the parties. No prior or contemporaneous addition, deletion, or other amendment hereto shall have any force or effect whatsoever, unless embodied herein in writing. No subsequent novation, renewal, addition, deletion, or other amendment hereto shall have any force or effect unless embodied in a written contract executed and approved by CSU and the State Controller. The article and other headings contained in the Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of the Agreement.

EXECUTED AND APPROVED as of the date(s) shown.

Vendor  
(Full Legal Name) \_\_\_\_\_

State Board of Agriculture by and through  
Colorado State University:

By: ☒ \_\_\_\_\_

By: ☒ \_\_\_\_\_

Title \_\_\_\_\_

Director of Purchasing

Date: \_\_\_\_\_

Date: \_\_\_\_\_

APPROVALS:

Clifford W. Hall, State Controller

By: Barbara L. Berg 8-16-96  
Dean/Department Head

By: \_\_\_\_\_  
Name: \_\_\_\_\_

By: \_\_\_\_\_  
For legal sufficiency \*\*

By: \_\_\_\_\_  
University Contracts Advisor\*\*

By: \_\_\_\_\_  
Director of Personnel

First (Cover) page to this Agreement

\*For use with "non-standard" agreements (see below) to meet requirements of the State Fiscal Rules, (4/96, V.P. Administrative Services).

\*\*Not required for CSU Purchase Order expenditures of under \$10,000.

INSTRUCTIONS

This Contract Acceptance form should be added and used as the first (cover) page to any agreement to be signed by both parties (i.e.: CSU and the Vendor) which is in addition to the CSU Purchase Order. Fill in blank spaces. Only this Contract Acceptance page should be signed by CSU. Any portion of this agreement providing for signature by CSU should be lined out. The Vendor must also sign this Contract Acceptance page. Any questions concerning the use of this document, as well as any questions concerning an agreement/contract itself, should be directed to the University Contracts Advisor, Office of Vice President for Administrative Services at (303) 481-5690. Reference CSU FPI 34.00.

VENDOR SIGN HERE  
Beginning of performance by Vendor pursuant to the Purchase Order shall be acceptance by Vendor of these provisions.

CSU SIGN HERE



## S E R V I C E   A G R E E M E N T

THIS AGREEMENT, made this 17th day of July 1995, by and between State Board of Agriculture, on behalf of the Colorado State Forest Service, Colorado State University, Ft. Collins, CO 80523, hereinafter referred to as CSFS, and Woodland Management Consultants, P O Box 10, Ft Collins, CO 80522, hereinafter referred to as the CONTRACTOR; and

WHEREAS, the CONTRACTOR has the expertise to provide forest practice services; and

WHEREAS, the CSFS desires to implement forest practices described in this agreement.

NOW, THEREFORE, it is hereby agreed that:

1. CSFS warrants that they have authority from the State Board of Land Commissioners (SLB) pursuant to agreement dated July 1, 1991, as amended January 1, 1993 to grant all rights to the CONTRACTOR provided for in this Agreement. The property is described as follows:

~~SW~~ ~~S16 T1S R79W in Grand County~~      No Access  
S36 T3N R77W in Grand County  
S36 T7N R78W in Jackson County  
S36 T12N R72W in Larimer County  
~~SW~~ ~~S36 T1N R85W in Routt County~~      No Access

2. CSFS grants to CONTRACTOR the right of access to the above described property for the following purposes: develop and implement approved forest management plans, consistent with CSFS and SLB statutes, rules, regulations and standards.
3. CONTRACTOR agrees to provide the services specified in Paragraph 2 of this Agreement in consideration for: the following percentages of revenue generated from the sale of forest products as specified in CSFS and SLB approved forest management plans and annual work plans.

~~SW~~ ~~S16 T1S R79W~~      ~~24 percent~~  
S36 T3N R77W      26 percent  
S36 T7N R78W      28 percent  
S36 T12N R72W      25 percent  
~~SW~~ ~~S36 T1N R85W~~      ~~28 percent~~

4. It is understood between the CSFS and the CONTRACTOR that this Agreement shall begin on the date first above written, and shall remain in force five years dependent on satisfactory performance.
5. This Agreement may be terminated by either party thirty (30) days following written notice to the other party.

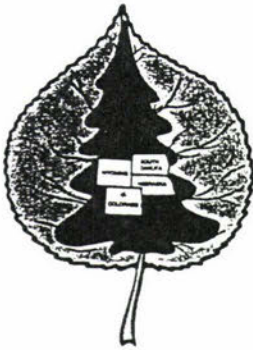
6. CONTRACTOR may assign rights provided for in this agreement to a subcontractor of its choice with the approval of the CSFS.
7. The CONTRACTOR shall maintain during the life of this agreement such liability & other insurance as is required by Colorado law.
8. This agreement may be extended due to inability of the CONTRACTOR to perform the work due to circumstances beyond its control or as mutually agreed to by the CSFS and CONTRACTOR. All extensions will be written and become a part of this Agreement.
9. Financial obligations of CSFS payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted and otherwise made available.
10. The CONTRACTOR agrees as part of this agreement that it will comply with all applicable laws regarding discrimination on the basis of race, creed, color, sex, or handicap including but not limited to Executive Order 11246 as amended or as may be further amended hereafter.
11. The laws of the state of Colorado and rules and regulations issued pursuant thereto shall be applied in the interpretation, execution and enforcement of this Agreement.
12. The signatories hereto aver that they are familiar with 18-8-301, et. seq., (Bribery and Corrupt Influences) and 18-8-401, et. seq., (Abuse of Public Office), C.R.S. 1973, as amended, and that no violation of such provision is present.
13. The signatories aver that to their knowledge no CSFS employee has any personal or beneficial interest whatsoever in the services or property described herein.

IN WITNESS WHEREOF the parties hereto have executed this agreement on the day first above written.

  
WOODLAND MANAGEMENT  
CONSULTANTS

  
COLORADO STATE FOREST SERVICE





Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(303) 221-1336

July 17, 1995

Tom Ostermann  
Colorado State Forest Service  
Colorado State University  
Ft. Collins, CO 80523

Dear Tom,

Reference RFP B900290;

1. Section 16, 1S., 79W., Grand County, the grazing lease is held by Terry Barnhardt as well as the road access. He has "personal reasons" for not allowing timber harvest. There is no other available access.
2. Section 36, 1N., 85W., Routt County, road access is thru BLM lands. They have closed all vehicle access on King Mountain for 3 years to protect a pair of nesting goshawks. There is no other logical access.

Woodland Management Consultants has no further interest in these two sections.

Sincerely,

Bill Gherardi

Forester, Woodland Management Consultants

COMMON POLICY DECLARATIONS

POLICY NO. TYP050011  
RENEWAL OF: CDP4678

CONTINENTAL DIVIDE INSURANCE CO.

RIEDMAN-FT COLLINS  
CD1131

BILL GHERARDI DBA: WOODLAND  
MANAGEMENT CONSULTANTS  
PO BOX 10  
FORT COLLINS, CO 80522

POLICY PERIOD: From 05/15/96 To 05/15/97 at \*  
12:01 A.M. Standard Time at your mailing address shown above.

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS OF THIS  
POLICY, WE AGREE WITH YOU TO PROVIDE THE INSURANCE AS STATED IN THIS POLICY.

THIS POLICY CONSISTS OF THE FOLLOWING COVERAGE PARTS  
FOR WHICH A PREMIUM IS INDICATED. THIS PREMIUM MAY  
BE SUBJECT TO ADJUSTMENT.

Commercial General Liability Coverage Part	\$536
Commercial Automobile	
Commercial Crime Coverage Part	
Commercial Inland Marine Coverage Part	
Commercial Property Coverage Part	

Workers Compensation

TOTAL \$536

Premium shown is payable: \$536 at inception.

Forms applicable to all Coverage Parts: SEE ATTACHED SCHEDULE

\* See the PAYMENT SCHEDULE on form number ILM 00 36 11 95

COUNTERSIGNED

4-23-96

BY

Tyler B Allen  
Authorized Representative

CD24 08/87

ORIGINAL



THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## LIMITS OF INSURANCE

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM.

It is hereby agreed that the Declaration Page Limits of Insurance (GL51D 2-86) is replaced in its entirety by the following:

### Limits of Insurance

General Aggregate Limit	\$1,000,000.
Personal & Advertising Injury Limit	600,000.
Each Occurrence Limit:	
1) For any "bodily injury," "property damage," "personal injury," or "advertising injury" to one person in any single occurrence.	150,000.
2) For any "bodily injury," "property damage," "personal injury," or "advertising injury" to two or more persons in any single occurrence, except no one person may recover in excess of \$150,000.	600,000.
Fire Damage Limit	50,000. Any One Fire
Medical Expense Limit	5,000. Any One Person



# DEPARTMENT OF HEALTH AND ENVIRONMENT

1525 Blue Spruce Drive  
Fort Collins, CO 80524-2004

Environmental Health Division ..... 498-6775  
Berthoud Fire Dept. .... 532-2264  
Larimer County Emergency Mgt. .... 498-5301  
Loveland Fire Dept. .... 962-2518  
Poudre Fire Authority ..... 221-6570

## APPLICATION TO OBTAIN A BURNING PERMIT

I, BILL GHERARDI, Located at 1413 ASH DR FT COLLINS 80521  
(Name of Applicant) (Street Address, City, Zip Code)

Phone # 970-221-1336, as an applicant do hereby request a burning permit  
for the date and time as follows:

NOV/DEC AS SNOW PERMITS

LOCATION OF PROPOSED BURNING: (Address of burn site, include directions to property  
and specific location on property.)

SECTION 36 11 NORTH 77 WEST Larimer River Valley

SECTION 36 12 NORTH 72 WEST Livermore

STATE LAND BOARD

C/O CSFS

FOOTHILLS CAMPUS

FT. COLLINS CO 80525

Name, Street Address, City & Phone

Number of Property Owner, IF

DIFFERENT THAN ABOVE

TYPE OF MATERIAL TO BE BURNED: SLASH in PILES AMOUNT: 3 ACRES  
Acres/or Cu.Ft. etc.

SIGNATURE OF APPLICANT: Bill Gherardi DATE: 9/10/01

\*\*\*\*\*  
☒ Approved, ☐ Disapproved DB Date: 10/15/01

Larimer County Health Department

Reason for Denial: \_\_\_\_\_

Special Instructions: No trash or stumps

\*\*\*\*\*  
☒ Approved, ☐ Disapproved David Morin Date: 10/17/01

Fire Authority

Reason for Denial: \_\_\_\_\_

Special Instructions: ALL ATTACHED REGULATIONS SHALL APPLY

THIS PERMIT NOT VALID UNLESS SIGNED BY ALL APPROPRIATE AUTHORITIES

This permit invalid after April 1, 2002





# LARIMER COUNTY SHERIFF'S OFFICE

2501 Midpoint Drive  
Fort Collins, CO. 80525

Jim Alderden, Sheriff

## GUIDELINES FOR BURNING

The guidelines attached will provide information and requirements that must be followed for burning in Larimer County. These guidelines were prepared by the Larimer County Sheriff's Department Emergency Operations Section and the Colorado State Forest Service to assist you in completing a safe and well managed burn. To summarize the information attached, the following requirements must be followed:

1. Piles of debris to be burned must be in open areas away from standing timber and structures.
2. There must be at least 3 inches of snow cover around the piles being burned.
3. Winds should be less than 7 mph or not strong enough to blow burning debris away from the burn area, or make control of the fire difficult.
4. Someone must remain with the fire at all times.
5. All burning must be completed and extinguished by nightfall.
6. Before starting your burn, you must advise Larimer County Communications Center at (970) 416-1985

In the Berthoud, Loveland, and Fort Collins area, you must also notify the appropriate fire department.

Failure to notify the appropriate agency will result in the fire departments responding to your location due to smoke reports that our Communications Center may receive.

7. You must have a copy of your burning permit with you when burning.

If these guidelines are not followed, your permit may be revoked and the fires will be extinguished. Please remember that the control and safety of the burn is your responsibility and if at any time your fire damages another person's property, you can be held criminally and civilly liable for damages.

James A. Alderden, Sheriff  
Larimer County, Colorado

## FOREST SLASH BURNING COTILLIONS FOR LARIMER COUNTY

This handout is designed to be used by forest landowners, land managers, and fire department personnel in Larimer County in planning and conducting safe and effective forest slash burning in woodland situations. It cannot guarantee safety from accidents, unforeseen circumstances, changing burning conditions, or negligent actions of the individual(s) burning slash. By following the intent of these guidelines and common sense, the landowner or forest manager can reduce forest slash accumulations, improve the appearance of their forest land, and reduce wildfire risk on their properties.

### Definitions

Slash: The accumulation of limbs, tops, and miscellaneous residue left by forest management activities, such as thinning, pruning, and timber harvesting.

Piling and burning: The treatment of slash by piling the limbs and tops into manageable piles. Piles are burned during safe burning conditions, generally during the winter following cutting.

Broadcast burning: The treatment of slash by burning the limbs and tops as they lie on the ground after cutting. The slash must be distributed continuously throughout the burn area to be burned effectively. Burning is generally done during very wet periods or with light snow cover in late fall or early spring.

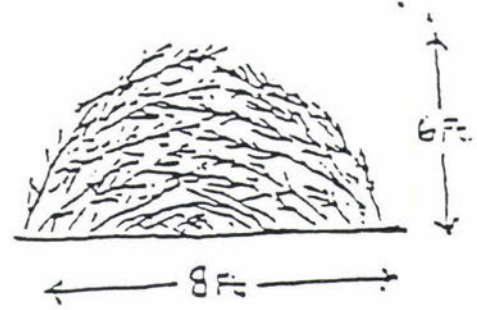
Mop-up: The final check of the burned slash to identify and extinguish still burning coals or materials. Extinguishment is usually accomplished by covering and mixing snow, water, or soil with the burning fuels.

### CONSTRUCTION OF PILES

Pile slash immediately after cutting (while still green), and before winter snowfall. Remove all wood products such as firewood prior to piling. Pile branches and tops with the butt ends towards the outside of the pile, and overlapping so as to form a series of dense layers piled upon each other. Use a mixture of sizes and fuels throughout the pile. This prevents snow from filtering into the pile and extinguishing the fire while it is starting. Piles should be approximately 8 feet across in diameter and 6 feet in height, again to prevent drifting snow from entering the pile. Piles should be kept compact, with no long extensions, to reduce snow filtration and improve ignition. Do not place large stumps and sections of logs in the piles, as they will burn for extended periods and will frequently need to be mopped-up.



Do not include garbage or debris in the pile. Locate piles in meadows, rock outcrops, or openings in forest stands. Do not pile slash over stumps where possible, as these areas will also need to be mopped-up. Piles may be situated within forest stands, if they are at least 5 feet away from adjacent tree trunks and tree crowns do not hang over the piles.



## PLANNING YOUR BURNING EFFORT

Landowners must complete the following steps before burning slash:

1. Obtain and have approved a burning permit from the Larimer County Health Department, 363 Jefferson Street, Fort Collins, CO 80524 (9303) 498-6788.
2. Signed authorization and approval from the legally constituted Fire Protection District for your area of Larimer county, or from the Larimer County Sheriff's Department, Emergency Services Section located in the basement of the Larimer County Courthouse.

Burning permits consist of 3 parts, and require the completion of information about the proposed burning. Upon completion of the permit and approval of the Health Department, approval from the responsible fire authorities is required. Upon their approval, the white copy of the permit is retained by the landowner, the yellow copy is given to the responsible fire protection agency, and the pink copy is returned to the Health Department.

The landowner must notify the responsible fire protection agency the day burning is planned (see attached list). Notification of the Larimer County Sheriff's Department, at (970) 416-1985 is also mandatory and should include the dates, times, and an exact legal description of the burn location. Neighbors should be informed prior to burning as well.

Burning must be done during suitable weather conditions. Periods of snow or light rain, with light winds (for smoke dispersal) and a minimum of 3 inches of snow cover are ideal. Do not burn during periods of high winds, low humidity or drying conditions, temperature inversions, and lack of snow cover or when these conditions are expected to develop after starting. Control of burning slash must be maintained at all times to reduce wildfire hazard and damage to residual trees. If snow cover becomes sparse during the burning period, additional water sources must be provided for wildfire control and mopping-up efforts. Persons conducting the burning should have at a minimum; leather gloves; shovels and mattocks; leather work boots; work clothing; masks or bandannas for covering the mouth and nose; and proper eye protection.

## BURNING SLASH PILES

Piles may be ignited by several means. If the needles and fine fuels within the pile have dried

out throughout the summer, then ignition can be easily started with a large ball of newspaper placed within the bottom of the pile. If fuels are still partially green , or the pile is wet from rain or melting snow, then a hotter and longer burning source may be necessary. Sawdust, saturated with diesel fuel and placed within the bottom of the pile, can be used. Flares used for highway emergencies can also be utilized to ignite the piles. Do not use gasoline for this purpose!

One pile should be burned first as a test pile to see how it burns and at what rate prior to igniting other piles. If suitable burning conditions exist, then additional piles may be started. Ignite only those piles that can be watched with the available manpower until the piles have burned down. Depending on weather conditions, pile size, and moisture content of the fuels, piles should burn down in 20 to 35 minutes. As a general rule, 3 to 6 piles per person is a manageable rate if piles are closely situated.

After the piles have burned down, re-pile any unburned slash and large wood chunks (called "chunking-in") into the beds of coals before starting any new groups of piles. Do not start any new piles after 2:00 p.m. Piles started after this time may continue to burn into the evening.

If landowners have questions about possible problems with burning slash, they should contact the Larimer County Sheriff's Department, Emergency Services Section at 498-5302 or the Colorado State Forest Service, Fort Collins District Office at 491-8660. Information about wildfire hazard reduction for forest land is available from the Fort Collins District, CSFS at 491-8660.

---

Prepared by the Larimer County Sheriff's Department, Emergency Services Section and the Colorado State Forest Service, Fort Collins District, November 1, 1993.





Colorado State University  
Fort Collins, Colorado 80523-5060  
(970) 491-6303  
FAX: (970) 491-7736

MB  
DF  
JL  
KP  
please  
return

July 8, 1999

Bill Gherardi  
Woodland Management Consultants  
P.O. Box 10  
Fort Collins, CO 80522

Dear Bill:

I hope you are well into a productive summer. This letter serves as a reminder that our service agreement for the following state land parcels will end July 17, 2000, five years from its initiation.

S36 T3N R77W, Grand County  
S36 T7N R78W, Jackson County  
S36 T12N R72W, Larimer County - *Georges Gulch*

Teaming up with you and other consultants to manage state lands was a new approach for the CSFS. Over the next few months I will be evaluating whether to continue this activity. In the mean time, I encourage you to work with our Steamboat Springs, Granby and Fort Collins districts to complete projects by the agreement ending date. This is especially important in the case of bonds, since the CSFS does not release bonds until after final project inspection.

Upon reviewing revenue activity of this service agreement, I discovered that on at least two occasions you personally purchased transplants from the Jackson County property in addition to securing a 28% commission for the sale. While such practice is not expressly prohibited by our agreement, it could easily be construed by an auditor as a direct conflict with agreement intent. If you feel that this type of sale arrangement is fully justifiable due to market or other factors, please contact me so that we may discuss how to rectify the situation. Otherwise, please discontinue such practice.

Do not hesitate to contact me if you have any questions. I look forward to working with you in the future.

Sincerely,

Phillip H. Schwolert  
Forest Management Division Supervisor

cc Steamboat Springs District  
Granby District  
Fort Collins District



PHONE (970) 491-5105 FAX (970) 491-5523

## PURCHASE ORDER

F300651

## PURCHASE ORDER

START 07/91/99 END 06/30/00

Mike Hughes

WHEN YOU RECEIVE THE ABOVE ITEM(S)  
COMPLETE, SIGN, DATE & RETURN THIS  
COPY W/COPY OF PACKING SLIP TO S.O.

SIGNED \_\_\_\_\_  
DATE REC'D \_\_\_\_\_

DEPARTMENT





**PURCHASING DEPARTMENT**  
FORT COLLINS, CO 80523-6010  
PHONE (970) 491-5105 FAX (970) 491-5523

DATE	PURCHASE ORDER
07/14/99	P300651

**PURCHASE ORDER**

START 07/01/99 END 06/30/00

TERMS	F.O.B.	QUOTE NO./QUOTE DATE	EXPECTED DELIVERY DATE
PURCH. CONTACT	PHONE	DEPT. NO.	V0000170050-00

V  
E  
N  
D  
O  
R  
  
WOODLAND MGMT CONSULTANTS  
\*\*\* PO CONTINUATION \*\*\*  
\*\*\* PAGE NUMBER BELOW \*\*\*

S  
H  
I  
P  
T  
O  
  
COLORADO STATE UNIVERSITY  
200 WEST LAKE  
REFERENCE P.O. P300651  
FORT COLLINS CO 80523

ACCOUNT NUMBER			PERCENT	AMOUNT	ACCOUNT NUMBER			PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION				UNIT PRICE	EXTENSION	
			CRF 1-92850-4550						

TOTAL \$ 108,442.24

PAYMENTS					PAYMENTS				
Cp	DIS	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	Cp	DIS	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT

\$  
DATE  
INITIALS

DEPARTMENT

## Bibliography

- Soil Survey of Larimer County, Soil Conservation Service, 1975.
- Manual for Wildfire Hazard Identification and Ecosystem Mapping, Colorado State Forest Service, 1975.
- Glossary of Terms Used in Timber Harvesting & Forest Engineering, US Forest Service, General Technical Report, SO-73.
- Silvicultural Systems, Cutting Methods, & Cultural Practices for Black Hills Ponderosa Pine, US Forest Service, General Technical Report, RM-139.





**Woodland Management Consultants**

P.O. Box 10

Fort Collins, Colorado 80522

(970) 221-1336

April 15, 1999

Mike Hughes  
Colorado State Forest Service  
Foothills Campus  
Ft. Collins, CO 80523

Dear Mike,

Enclosed please find check #6749 for \$3400 from Dwight Clark.  
This is for volume removed from Section 36, 12N., R.72 W.. Dwight  
has completed the harvesting on this section.

The only remaining work item is to burn the slash piles. Due to  
our dry weather, this will not happen before next fall.

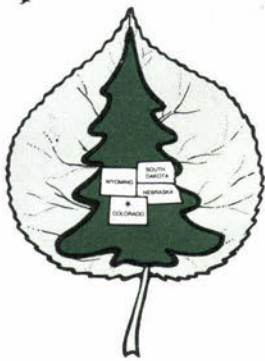
If you have any questions, please give me a call.

Sincerely,

Bill Gherardi

Forester, Woodland Management Consultants

Enclosures



Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(970) 221-1336

---

August 12, 1998

Mike Hughes  
Colorado State Forest Service  
Foothills Campus  
Ft. Collins, CO 80523-5075

Dear Mike,  
Enclosed please find the update annual work plan for Section 36.  
If you have any questions, please give me a call.

Sincerely,

Bill Gherardi  
Forester, Woodland Management Consultants

Enclosure





**Woodland Management Consultants**  
P.O. Box 10  
Fort Collins, Colorado 80522  
(970) 221-1336

---

August 12, 1998

Annual Work Plan

Legal ; T. 12 N., R. 72 W., Section 36.  
Common Name ; Georges Gulch.  
Prescription ; Shelterwood cut.  
Practice Size ; 313 acres.  
Species ; Ponderosa pine and Douglas fir.  
Products ; Firewood and sawtimber.  
Volume ; 50 mbf of dead, 300 cords of roundwood, 300 mbf  
sawtimber.  
Direct Cost ;  
Value ; \$ 8000.  
Duration ; 1 year.  
Other Benefits; Promote regeneration. Improve range.  
Why ; Prevent catastrophic loss from beetle. Utilize  
site potential.  
Submitted by ; Bill Gherardi  
Woodland Management Consultants.



Foothills Campus  
Colorado State University  
Fort Collins, Colorado 80523-5075  
(970) 491-8660  
FAX: (970) 491-8645

April 12, 1996

Woodland Management Consultants  
P.O. Box 10  
Fort Collins, CO 80522

ATTENTION: Bill Gherardi

Dear Bill:

This letter is to inform you that I have reviewed your management plan for the Moen state section. Everything looks fine and I appreciate the effort you put into it.

I was going to ask that you supply me with a copy of a recent aerial photo and fire hazard type map, but I will run down a copy of each myself.

I do ask that you let me know when you will be starting implementation work. I would like to review your recommendation on the site, since I have never been on this parcel. Please call me sometime after May 15th (planting season) and we can arrange a time to meet on the section.

Sincerely,

Michael M. Hughes, Asst. District Forester  
Fort Collins District





EXTENSION OF CONTRACT PERIOD

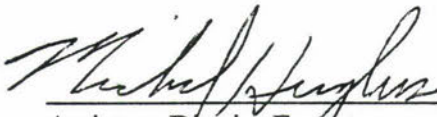
Per Clause 8 of the Service Agreement dated February 11, 1992, the termination date stated in Clause 4 is hereby extended to:

June 30, 1999.

In witness where of the parties to the original agreement hereto have executed this Amendment to that Agreement on June 12, 1998.

LANDOWNER

CONTRACTOR

  
Assistant District Forester

  
Woodland Management Consultants  
by William Glendon

Ref. Purchase Order 518399





DATE 07/01/97

P518399

PURCHASE ORDER

PURCHASING DEPARTMENT

FORT COLLINS, CO 80523-6010

PHONE (970) 491-5105 FAX (970) 491-5523

START 07/01/97 END 06/30/98

**PURCHASE ORDER**

TERMS

FOR

QUOTE NO./QUOTE DATE

EXPECTED DELIVERY DATE

N

B900290

PURCH CONTACT

PHONE

DEPT. NO.

JOHN C. TYLER

(970) 491-5107

Q213836

5060

V0000170050

WOODLAND MGMT CONSULTANTS  
P O BOX 10  
FORT COLLINS CO 80522

COLORADO STATE FOREST SERVICE  
FORESTRY 203  
REFERENCE P.O. P518399  
FORT COLLINS CO 80523

SHIP TO

ACCOUNT NUMBER	PERCENT	AMOUNT	ACCOUNT NUMBER	PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	EXTENSION
			SERVICE AGREEMENT		
001			RENEWAL OF SERVICE AGREEMENT TO CONTINUE TO DEVELOP AND IMPLEMENT MANAGEMENT PLANS PER PROPOSAL B900290 TERMS, CONDITIONS AND SPECIFICATIONS.  PERIOD: JULY 1, 1997 - JUNE 30, 1998  RENEWAL P513911		
002	1.00	LOT	1-93450-4550	14,928.7500	14,928.7
003	1.00	LOT	1-93490-4550	50,000.0000	50,000.0
			FINANCIAL OBLIGATIONS OF THE STATE AND CSU PAYABLE AFTER THE CURRENT STATE FISCAL YEAR (EXCEPT AS SHOWN ON THE SAID CSU PURCHASE ORDER) FOR SERVICES AND/OR PRODUCTS TO BE PROVIDED UNDER THE AGREEMENT ARE CONTINGENT UPON FUNDS FOR THAT PURPOSE BEING APPROPRIATED, BUDGETED AND OTHERWISE MADE AVAILABLE AS		

TOTAL

CONTINUED

PAYMENTS

PAYMENTS

INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	APPROVED FOR PAY ME
						S
						DATE
						INITIALS

DEPARTMENT



**Woodland Management Consultants**

P.O. Box 10

Fort Collins, Colorado 80522

(303) 221-1336

July 2, 1998

Mike Hughes  
Colorado State Forest Service  
Foothills Campus  
Ft. Collins, CO 80523-5075

Dear Mike,

Enclosed please find check #6464 for \$2100 from Dwight Clark. This is for volume removed from Section 36, 12 N., R. 72 W., thru June 25, 1998. Dwight will move back in the fall to complete the harvesting on this section.

Also enclosed is a copy of a letter to Dwight Clark extending the timber sale contract until May 1, 1999.

Finally, my invoice for this payment is also enclosed.

If you have any questions, please give me a call.

Sincerely,

Bill Gherardi

Forester, Woodland Management Consultants

Enclosures



Handwritten text at the top of the page, possibly a title or header.

Handwritten text in the upper right section of the page.

Handwritten text in the middle section of the page, consisting of several lines.

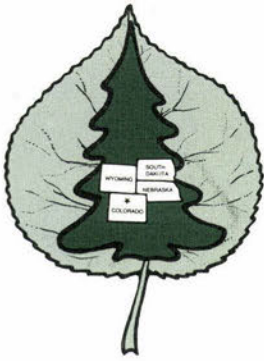
Handwritten text in the lower middle section of the page.

Handwritten text in the lower middle section of the page.

Handwritten text in the lower middle section of the page.

Handwritten text in the lower section of the page.

Handwritten text at the bottom right of the page.



**Woodland Management Consultants**

P.O. Box 10

Fort Collins, Colorado 80522

(303) 221-1336

July 24 1998

Dwight Clark  
5531 W. Cty. Rd. 20  
Loveland, CO 80537

Dear Dwight,

The Timber Sale Contract for Section 36, T. 12 N., R. 72 W., dated January 9, 1997 is hereby extended to May 1, 1999. All of the original provisions of the contract remain the same.

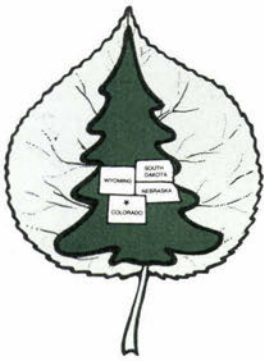
Sincerely,

Bill Gherardi

Forester, Woodland Management Consultants

cc: Mike Hughes





Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(970) 221-1336

MARCH 10, 1998

MIKE HUGHES  
COLORADO STATE FOREST SERVICE  
FOOTHILLS CAMPUS  
FT. COLLINS, CO 80523

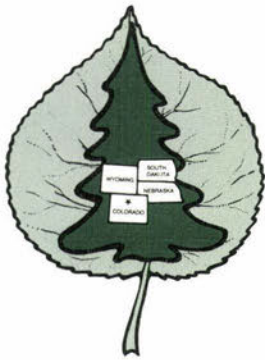
DEAR MIKE,  
ENCLOSED PLEASE FIND A CHECK FROM DWIGHT CLARK FOR \$2000.00,  
FOR THE TIMBER SALE ON SECTION 36, 12N, R 72W.  
ALSO ENCLOSED IS MY INVOICE.

IF YOU HAVE ANY QUESTIONS, PLEASE CALL ME.

SINCERELY,

Bill Shandi

ENCLOSURES



**Woodland Management Consultants**

P.O. Box 10

Fort Collins, Colorado 80522

(303) 221-1336

November 15, 1996

Work Plan

Legal ; T. 12 N., R. 72 W. Section 36.  
Common Name ; Gerges Gulch.  
Prescription ; Shelterwood cut.  
Practice size; 313 acres.  
Species ; Ponderosa pine and Douglas fir.  
Products ; Firewood and sawtimber.  
Volume ; 50 mbf dead, 700 mbf green sawtimber.  
Direct Cost ;  
Value ; \$21250.  
Duration ; 2 years.  
Other Benefits; Promote regeneration. Improve range.  
Why ; Prevent catastrophic loss from mountain pine  
beetle. Utilize site potential.  
Submitted by ; Bill Gherardi  
Woodland Management Consultants.





07/01/97

P518399

**PURCHASING DEPARTMENT**

FORT COLLINS, CO 80523-6010

PHONE (970) 491-5105 FAX (970) 491-5523

START 07/01/97 END 06/30/98

**PURCHASE ORDER**

TERMS

F.O.B.

QUOTE NO./QUOTE DATE

EXPECTED DELIVERY DATE

N

B900290

JOHN C. TYLER PURCH. CONTACT

(970) 491-5107

PHONE

Q213836

5060

DEPT. NO.

V0000170050

V  
E  
N  
D  
O  
R

WOODLAND MGMT CONSULTANTS  
P O BOX 10  
FORT COLLINS CO 80522

S  
H  
I  
P  
T  
O

COLORADO STATE FOREST SERVICE  
FORESTRY 203  
REFERENCE P.O. P518399  
FORT COLLINS CO 80523

*Fort Collins*

ACCOUNT NUMBER			PERCENT	AMOUNT	ACCOUNT NUMBER			PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION			UNIT PRICE		EXTENSION	
001			SERVICE AGREEMENT						
			RENEWAL OF SERVICE AGREEMENT TO CONTINUE TO DEVELOP AND IMPLEMENT MANAGEMENT PLANS PER PROPOSAL B900290 TERMS, CONDITIONS AND SPECIFICATIONS.						
			PERIOD: JULY 1, 1997 - JUNE 30, 1998						
			RENEWAL P513911						
002	1.00	LOT		1-93450-4550		14,928.7500		14,928.75	
003	1.00	LOT		1-93490-4550		50,000.0000		50,000.00	
			FINANCIAL OBLIGATIONS OF THE STATE AND CSU PAYABLE AFTER THE CURRENT STATE FISCAL YEAR (EXCEPT AS SHOWN ON THE SAID CSU PURCHASE ORDER) FOR SERVICES AND/OR PRODUCTS TO BE PROVIDED UNDER THE AGREEMENT ARE CONTINGENT UPON FUNDS FOR THAT PURPOSE BEING APPROPRIATED, BUDGETED AND OTHERWISE MADE AVAILABLE AS						

WHEN YOU RECEIVE THE ABOVE ITEM(S) COMPLETE, SIGN, DATE & RETURN THIS COPY W/ COPY OF PACKING SLIP TO S.O.  
SIGNED \_\_\_\_\_  
DATE REC'D \_\_\_\_\_

TOTAL

CONTINUED

PAYMENTS				PAYMENTS						
C <sub>P</sub> F	DIS CODE	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	C <sub>P</sub> F	DIS CODE	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	APPROVED FOR PAYMENT
										\$ _____
										DATE _____
										INITIALS _____
										1

DEPARTMENT



**PURCHASING DEPARTMENT**  
FORT COLLINS, CO 80523-6010  
PHONE (970) 491-5105 FAX (970) 491-5523

DATE

07/01/97

PURCHASE ORDER

P518399

**PURCHASE ORDER**

START 07/01/97 END 06/30/98

TERMS

F.O.B.

QUOTE NO./QUOTE DATE

EXPECTED DELIVERY DATE

PURCH. CONTACT

PHONE

DEPT. NO.

**V0000170050**

V  
E  
N  
D  
O  
R

WOODLAND MGMT CONSULTANTS  
\*\*\* PO CONTINUATION \*\*\*  
\*\*\* PAGE NUMBER BELOW \*\*\*

S  
H  
I  
P  
T  
O

COLORADO STATE FOREST SERVICE  
FORESTRY 203  
REFERENCE P.O. P518399  
FORT COLLINS CO 80523

ACCOUNT NUMBER			PERCENT	AMOUNT	ACCOUNT NUMBER			PERCENT	AMOUNT
NO.	QUANTITY	UNIT	DESCRIPTION				UNIT PRICE	EXTENSION	
			EVIDENCED BY THE ISSUANCE OF ANOTHER CSU PURCHASE ORDER. IN ADDITION, THE PARTIES RECOGNIZE THAT AS A RESULT OF THE 1992 PASSAGE OF "THE TAXPAYER'S BILL OF RIGHTS" AMENDMENT TO THE COLORADO CONSTITUTION, ALL STATE CONTRACTS ARE REQUIRED TO TERMINATE AT THE END OF EACH FISCAL YEAR WITH RENEWAL RIGHTS AT THE SOLE DISCRETION OF THE STATE. THEREFORE, ANY PROVISION OF THIS AGREEMENT NOTWITHSTANDING, THIS AGREEMENT SHALL TERMINATE ON JUNE 30 OF EACH YEAR, UNLESS RENEWED AT THAT TIME AT THE SOLE DISCRETION OF CSU.						
			F3 1-93460-4550						

**TOTAL \$ 164,928.75**

PAYMENTS					PAYMENTS				
Cp	DIS	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT	Cp	DIS	INVOICE NUMBER	INVOICE DATE	PAY AMOUNT

\$  
DATE  
INITIALS

DEPARTMENT



## EXTENSION OF CONTRACT PERIOD

Per Clause 8 of the Service Agreement dated February 11, 1992, the termination date stated in Clause 4 is hereby extended to:

June 30, 1998.

In witness where of the parties to the original agreement hereto have executed this Amendment to that Agreement on May 19, 1997.

LANDOWNER

  
Assistant District Forester

CONTRACTOR

  
Woodland Management Consultants

## S E R V I C E   A G R E E M E N T

THIS AGREEMENT, made this 17th day of July 1995, by and between State Board of Agriculture, on behalf of the Colorado State Forest Service, Colorado State University, Ft. Collins, CO 80523, hereinafter referred to as CSFS, and Woodland Management Consultants, P O Box 10, Ft Collins, CO 80522, hereinafter referred to as the CONTRACTOR; and

WHEREAS, the CONTRACTOR has the expertise to provide forest practice services; and

WHEREAS, the CSFS desires to implement forest practices described in this agreement.

NOW, THEREFORE, it is hereby agreed that:

1. CSFS warrants that they have authority from the State Board of Land Commissioners (SLB) pursuant to agreement dated July 1, 1991, as amended January 1, 1993 to grant all rights to the CONTRACTOR provided for in this Agreement. The property is described as follows:

~~AC~~ ~~S16 T1S R79W in Grand County~~      ~~20 Acres~~  
S36 T3N R77W in Grand County  
S36 T7N R78W in Jackson County  
S36 T12N R72W in Larimer County  
~~AC~~ ~~S36 T1N R85W in Routt County~~      ~~20 Acres~~

2. CSFS grants to CONTRACTOR the right of access to the above described property for the following purposes: develop and implement approved forest management plans, consistent with CSFS and SLB statutes, rules, regulations and standards.
3. CONTRACTOR agrees to provide the services specified in Paragraph 2 of this Agreement in consideration for: the following percentages of revenue generated from the sale of forest products as specified in CSFS and SLB approved forest management plans and annual work plans.

~~AC~~ ~~S16 T1S R79W~~      ~~24 percent~~  
S36 T3N R77W      26 percent  
S36 T7N R78W      28 percent  
S36 T12N R72W      25 percent  
~~AC~~ ~~S36 T1N R85W~~      ~~28 percent~~

4. It is understood between the CSFS and the CONTRACTOR that this Agreement shall begin on the date first above written, and shall remain in force five years dependent on satisfactory performance.
5. This Agreement may be terminated by either party thirty (30) days following written notice to the other party.



6. CONTRACTOR may assign rights provided for in this agreement to a subcontractor of its choice with the approval of the CSFS.
7. The CONTRACTOR shall maintain during the life of this agreement such liability & other insurance as is required by Colorado law.
8. This agreement may be extended due to inability of the CONTRACTOR to perform the work due to circumstances beyond its control or as mutually agreed to by the CSFS and CONTRACTOR. All extensions will be written and become a part of this Agreement.
9. Financial obligations of CSFS payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted and otherwise made available.
10. The CONTRACTOR agrees as part of this agreement that it will comply with all applicable laws regarding discrimination on the basis of race, creed, color, sex, or handicap including but not limited to Executive Order 11246 as amended or as may be further amended hereafter.
11. The laws of the state of Colorado and rules and regulations issued pursuant thereto shall be applied in the interpretation, execution and enforcement of this Agreement.
12. The signatories hereto aver that they are familiar with 18-8-301, et. seq., (Bribery and Corrupt Influences) and 18-8-401, et. seq., (Abuse of Public Office), C.R.S. 1973, as amended, and that no violation of such provision is present.
13. The signatories aver that to their knowledge no CSFS employee has any personal or beneficial interest whatsoever in the services or property described herein.

IN WITNESS WHEREOF the parties hereto have executed this agreement on the day first above written.



WOODLAND MANAGEMENT  
CONSULTANTS



COLORADO STATE FOREST SERVICE



Woodland Management Consultants  
P.O. Box 10  
Fort Collins, Colorado 80522  
(303) 221-1336

July 17, 1995

Tom Ostermann  
Colorado State Forest Service  
Colorado State University  
Ft. Collins, CO 80523

Dear Tom,  
Reference RFP B900290;

1. Section 16, 1S., 79W., Grand County, the grazing lease is held by Terry Barnhardt as well as the road access. He has "personal reasons" for not allowing timber harvest. There is no other available access.
2. Section 36, 1N., 85W., Routt County, road access is thru BLM lands. They have closed all vehicle access on King Mountain for 3 years to protect a pair of nesting goshawks. There is no other logical access.

Woodland Management Consultants has no further interest in these two sections.

Sincerely,

Bill Gherardi  
Forester, Woodland Management Consultants



COMMON POLICY DECLARATIONS

POLICY NO. TYP050011  
RENEWAL OF: CDP4678

CONTINENTAL DIVIDE INSURANCE CO.

RIEDMAN-FT COLLINS  
CD1131

BILL GHERARDI DBA: WOODLAND  
MANAGEMENT CONSULTANTS  
PO BOX 10  
FORT COLLINS, CO 80522

POLICY PERIOD: From 05/15/96 To 05/15/97 at \*  
12:01 A.M. Standard Time at your mailing address shown above.

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS OF THIS  
POLICY, WE AGREE WITH YOU TO PROVIDE THE INSURANCE AS STATED IN THIS POLICY.

THIS POLICY CONSISTS OF THE FOLLOWING COVERAGE PARTS  
FOR WHICH A PREMIUM IS INDICATED. THIS PREMIUM MAY  
BE SUBJECT TO ADJUSTMENT.

Commercial General Liability Coverage Part	\$536
Commercial Automobile	
Commercial Crime Coverage Part	
Commercial Inland Marine Coverage Part	
Commercial Property Coverage Part	

Workers Compensation

TOTAL \$536

Premium shown is payable: \$536 at inception.

Forms applicable to all Coverage Parts: SEE ATTACHED SCHEDULE

\* See the PAYMENT SCHEDULE on form number ILM 00 36 11 95.

COUNTERSIGNED

4-23-96

BY

Tyler B Allen  
Authorized Representative

CD24 08/87

ORIGINAL

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## LIMITS OF INSURANCE

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM.

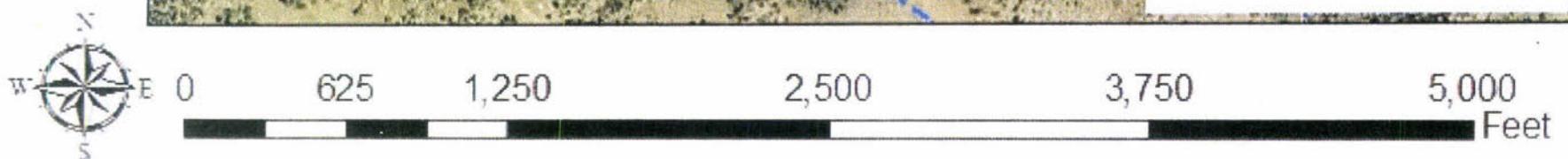
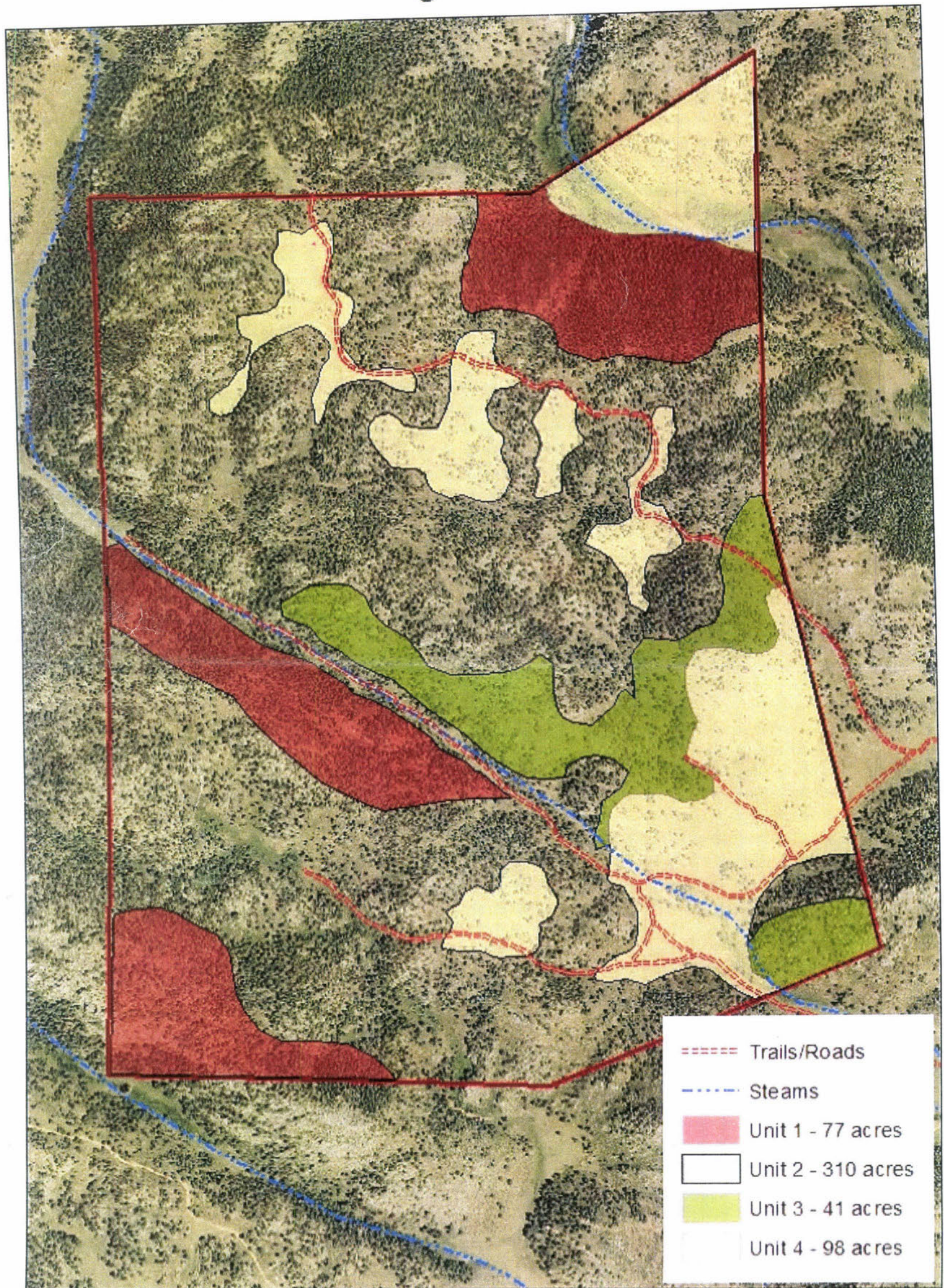
It is hereby agreed that the Declaration Page Limits of Insurance (GL51D 2-86) is replaced in its entirety by the following:

### Limits of Insurance

General Aggregate Limit	\$1,000,000.
Personal & Advertising Injury Limit	600,000.
Each Occurrence Limit:	
1) For any "bodily injury," "property damage," "personal injury," or "advertising injury" to one person in any single occurrence.	150,000.
2) For any "bodily injury," "property damage," "personal injury," or "advertising injury" to two or more persons in any single occurrence, except no one person may recover in excess of \$150,000.	600,000.
Fire Damage Limit	50,000. Any One Fire
Medical Expense Limit	5,000. Any One Person



# George's Gulch

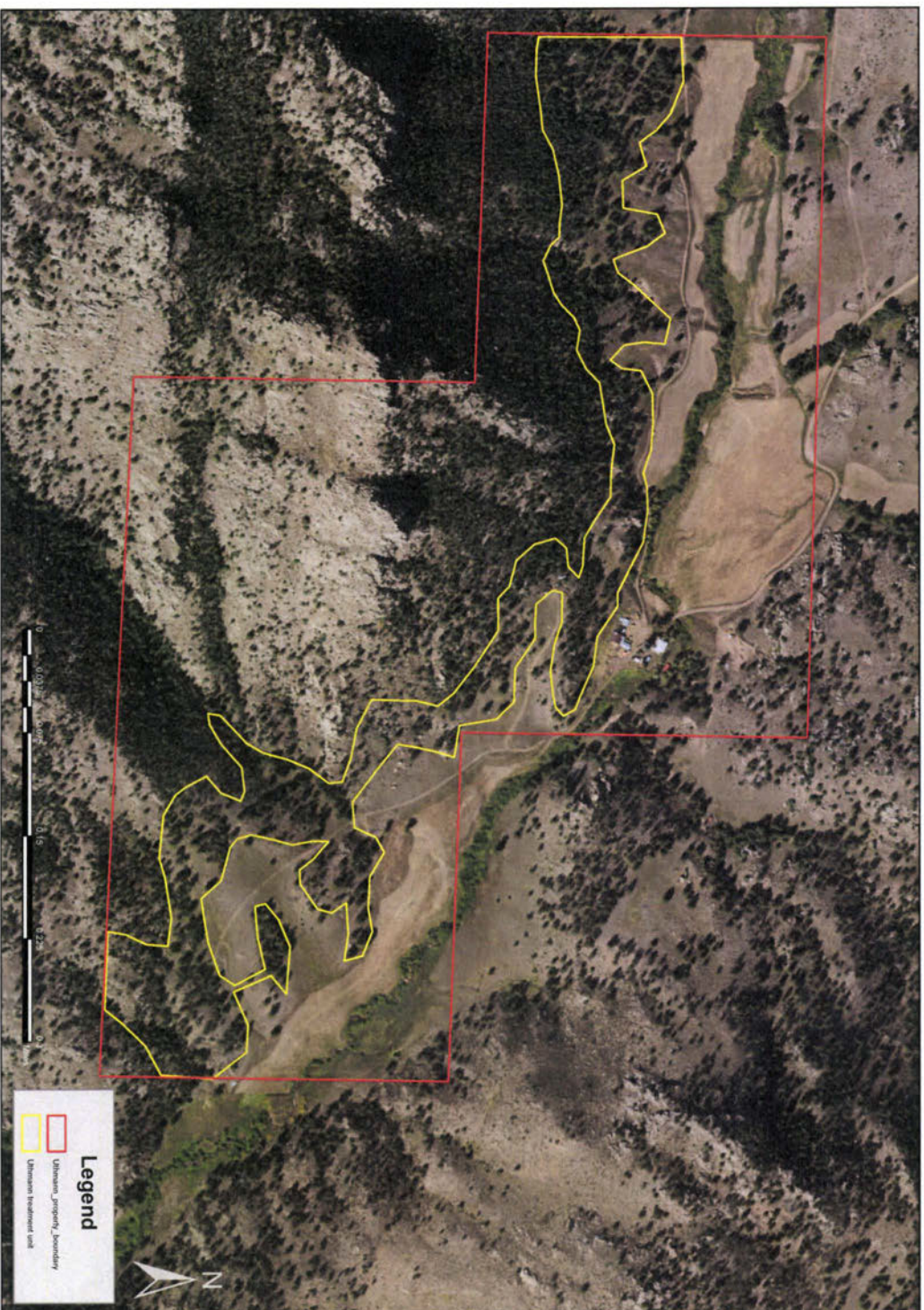








# Uthmann EQIP Treatment Units



## CSFS ACCOUNTING REQUEST

CSFS # 813

Revised 12/01/02

DATE: 8/25/05

TO: State Office Accounting

FROM:

*Kathy R. Porter*  
(signature of CSFS employee initiating request)

THIS IS A REQUEST FOR (CHECK ONE):

Please attach copies of all appropriate supporting documents.

## G JOURNAL ENTRY/ACCOUNT TRANSFER:

Transfer \$ 400- Reason for transfer: *Forfeiture of Bond due to non-completion of St Land Sale (slash burn).*

Document #: \_\_\_\_\_ Invoice #: 42348 FY 96-97

Vendor name: *Dwight Clark Logging*

Debit funding 999870 - 2060 Credit funding 999870 - 0641  
Account Subcode Account Subcode

Signature 999870 - 0641 Signature 223510 - 0641

*MA 6/5/06*

## G HOURLY PAYROLL/OVERTIME EXPENSE TRANSFER:

Transfer \$ \_\_\_\_\_ Reason for transfer:

Employee name: \_\_\_\_\_ PPE Date:

Debit funding \_\_\_\_\_ - \_\_\_\_\_ Credit funding ( \_\_\_\_\_ - \_\_\_\_\_ )  
Account Subcode Account Subcode

Signature \_\_\_\_\_ Signature \_\_\_\_\_

## G CUSTOMER PAYMENT REFUND:

Send refund in amount of \$ \_\_\_\_\_ to customer listed below.

Received on CSFS Invoice # \_\_\_\_\_ FY

Name:

Address:

Reason for refund:



To:

Invoice No. **42348**

DWIGHT CLARK LOGGING

5531 W CTY RD 20

LOVELAND CO 80537

**Colorado**  
**State**  
 FOREST  
 SERVICE
Date: 1/24/97

Item	Unit Cost	Total
1 FCSL 97-1 SEC 36, T12N, R72W, LARIMER COUNTY, COLO		
PERFORMANCE BOND (MOEN SECTION)		400.00
2 PERMIT APPLICATION FEE		25.00
3		
4		
5		
6		
7		
8		
9		
Tax Exempt No. _____	Sales Tax	

CSFS Originator

Payment Due By THANK YOU

Remit to:

Total	425.00
CK-CA-MO Amount Paid:	425.00
Amount Due	0
Ck# 5914	Dated 1/19/97
Rcv'd By KRP	F.Y. 96/97
Funding	Amount
0-19606	2060 400.00
1-93210	0646 25.00

Deposit No. 1-30.97 Date 40997

White-Customer copy; Yellow-State Office copy; Pink-Project copy

FYI - From Sarah G.

MH MB

KP KP

DW DW

WM WM

FM FM

SD SD

MS MS

Bye last

**Larimer County  
Smoke Field Visits  
2/20/06**

**George's Gulch Piles  
FCS-06-091  
CSFS Fort Collins District**

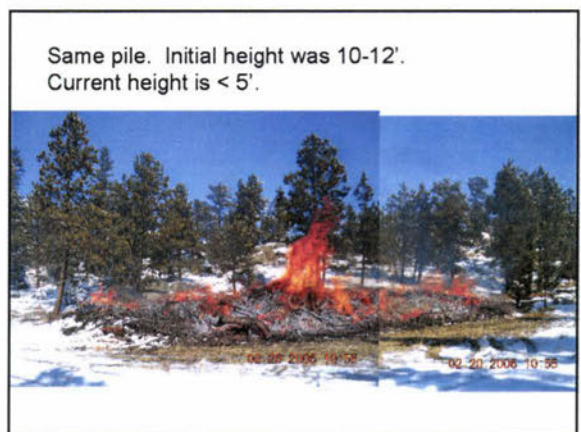
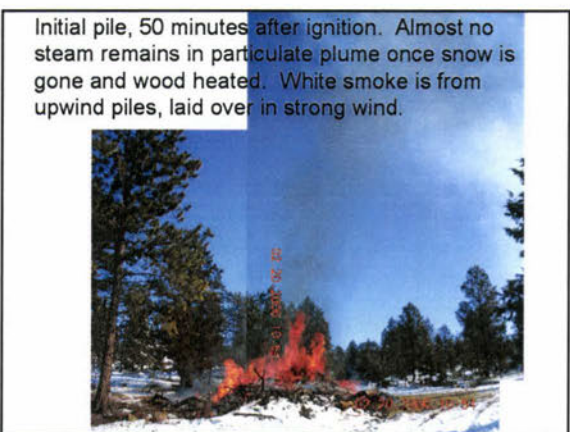
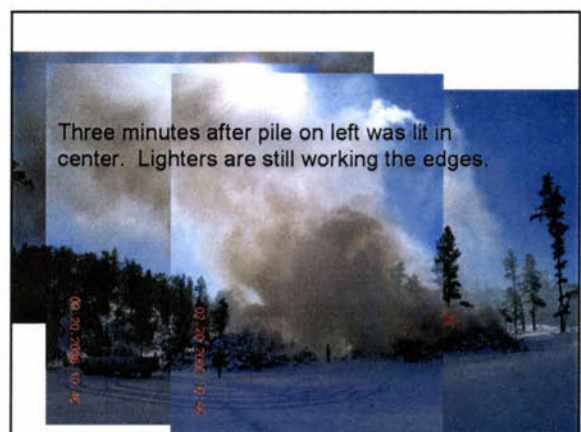
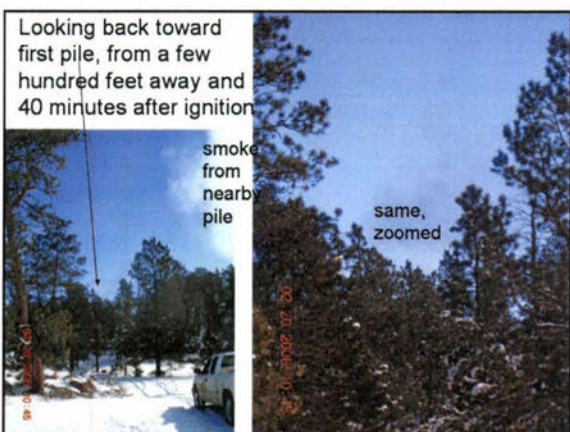
this and next 2  
slides: lighting pile  
by pouring some  
diesel in center then  
lighting with fussee.  
It built heat quickly.



3 minutes after first ignition. Lighters  
continue to ignite edges with drip torches.



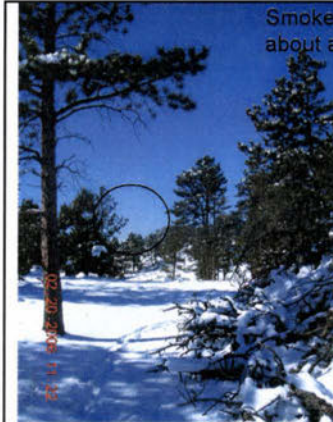




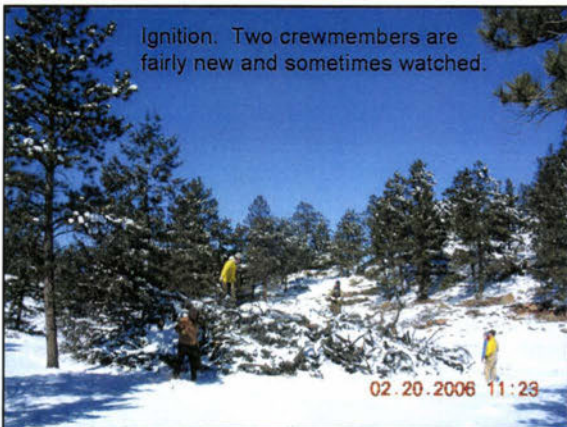
Circled smoke is 2 piles 10-15 minutes after ignition, about 300 yds away. Rest of smoke is from pile just lit to right of photo.



Smoke from first four piles, about a quarter mile away



Ignition. Two crewmembers are fairly new and sometimes watched.



The forecast was for 20' winds of 25 mph, and seemed accurate.



Heat building in newly-ignited pile

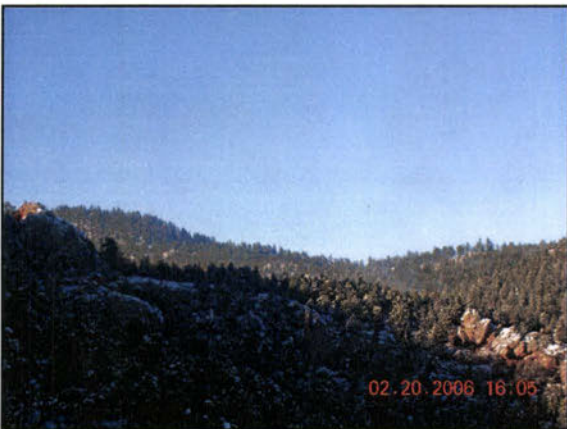
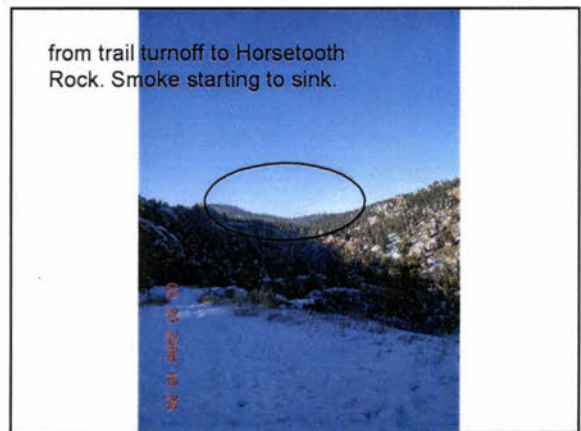
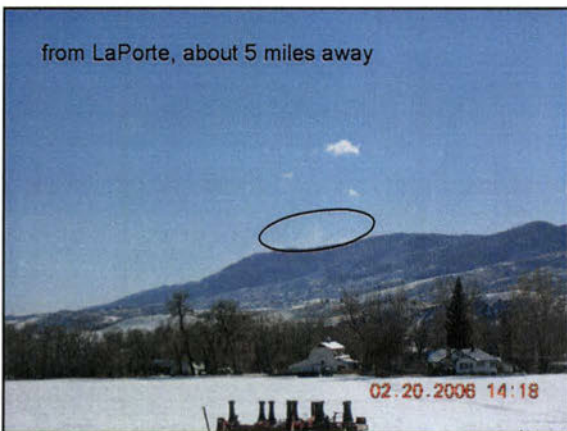
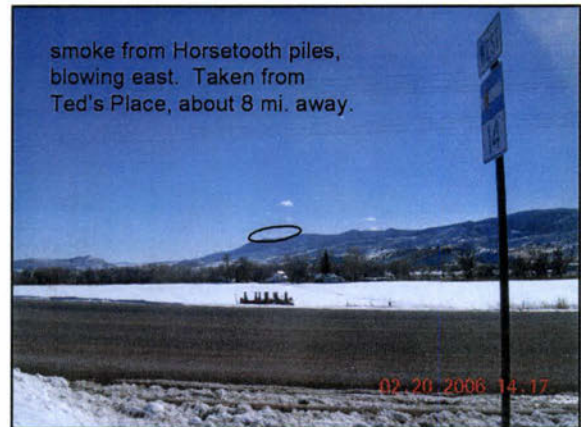


Lift was excellent when the wind gusts subsided.





Horsetooth Piles  
LRX-06-077  
Larimer Co. Emergency Svcs



**Form F****ANNUAL ACTUAL FIRE ACTIVITY, PILES AND BROADCAST**

Return by March 1, summarizing all fire activity for the prior calendar year. This form is in addition to Daily Activity Reports.

Burn Name: Georges Gulch Piles Permit Number: FCS-06-091

No fire was ignited at this location during the permit year. ☐  
If no burning, check here and sign below.

List of Burn Dates: 2/20/06 \_\_\_\_\_

If additional space needed, attach a list of burn dates.

Total Broadcast Actual Acres\* \_\_\_\_\_

\* Totals should equal sum of Daily Activity Forms SMP-E.

OR Total # of piles\* 16 Avg. ft<sup>3</sup> per pile 1500 consumed, avg. 95 %

**Piles:** Check all fuels that apply.

n/a

n/a

☐
☐
☒
☐
☐
**Fuel Types**

Unburned, any species

Grass

Sagebrush

Oak or Aspen

Pine or Other Conifer

Piñon/Juniper

Other: \_\_\_\_\_

Broadcast: % of Acres	Broadcast Fuel Load, t/ac	Broadcast % Consumed
	For mosaic, unburned area within black perimeter	
%		%
%		%
%		%
%		%
%		%
%		%
%		%
total = 100%		

Optional Comments:

SIGNATURE: Byrd O. Lebeda NAME: Byrd O. Lebeda DATE: 12/18/06

Submit to Air Pollution Control Division.

Fax to 303-782-5493 or 303-782-0278 or email to [coleen.campbell@state.co.us](mailto:coleen.campbell@state.co.us).

Please deliver this fax to Coleen Campbell, APCD.



**Form SMP-A**  
**OPEN BURNING PERMIT APPLICATION**  
**PRESCRIBED FIRE PROJECTS**

RECEIVED

DEC 23 2005

**BURN NAME:** Georges Gulch Piles **COUNTY:** Larimer

**RENEWAL?** No FCS-05-325 **LOCATION:** T12N, R72W, Sec. 36  
*Indicate Old Permit Number* *T, R, S or Lat/Long*

**ADMINISTRATIVE UNIT ID:** COS  
*See Info Sheet I for a list of IDs. Include all IDs for multiple agency burns. Private landowner use PVT.*

**CONTACT PERSON:** Boyd Lebeda **PHONE:** 970.491.8445

*Complete Address, Email Address, Fax and Cell Phone fields **ONLY** if this is your first submittal or info has changed.*

**ADDRESS:** 5075 Campus Deliver, CSU, Fort Collins, CO 80523-5075 **CELL:** 970.222.8693

**EMAIL ADDRESS:** blebeda@lamar.colostate.edu **FAX:** 970.491.8645

**BILLING INFORMATION:**  
*If multiple agencies to be billed, please indicate the percentage for each. Otherwise, the administrative unit listed above will be billed 100%.*

Agency	Percentage	Agency	Percentage

**LANDOWNER:** SLB ☒ YES  
*Complete **ONLY** if different than Agency to be billed* Does this Landowner/Agency own or manage  $\geq 10,000$  acres in Colorado? ☐ NO

**MANAGEMENT USE/TYPE OF PROJECT:**  
*Check appropriate use/uses*

NATURAL FUEL REDUCTION	<input type="checkbox"/>	SPECIES CONVERSION	<input type="checkbox"/>	SITE PREP	<input type="checkbox"/>
ACTIVITY FUEL REDUCTION	<input checked="" type="checkbox"/>	RANGE IMPROVEMENT	<input type="checkbox"/>	WILDLIFE	<input type="checkbox"/>
HAZARDOUS FUEL REDUCTION	<input type="checkbox"/>	PEST CONTROL	<input type="checkbox"/>	OTHER	<input type="checkbox"/>

**REQUESTED WIND DIRECTIONS:** any e.g.: any, N-E-SW, all but NW... *Precise to 2 letters.*

**REQUESTED SPECIAL CONDITIONS, if any:**  

SMOKE SENSITIVE AREAS	MILES FROM BURN	DIRECTION FROM BURN (compass direction or degrees)	MAIN CONCERN(S) Day=D, Night=N, Both=B
US Highway 287	2	NE	D
Co Rd 46E	1.5	E	D
Tie Siding, WY	10	N	D

**Permit Number:** FCS - 06 - 091

**Form SMP-A, cont.**  
**OPEN BURNING PERMIT APPLICATION**  
**PRESCRIBED FIRE PROJECTS**

**for BROADCAST BURNS only:**

PROPOSED BURN DATES: \_\_\_\_\_

*Month or season is sufficient, but dates must be in the same calendar year*

MAX. TOTAL ACREAGE: \_\_\_\_\_ **AND** MAX. DAILY ACREAGE: \_\_\_\_\_

PREDOMINANT NFDRS \_\_\_\_\_ BRIEF DESCRIPTION  
FUEL MODEL: \_\_\_\_\_ OF FUELS: \_\_\_\_\_

*Models A-U (See Info Sheet II for brief description.)*

IGNITION METHOD(S): \_\_\_\_\_ HAND ONLY \_\_\_\_\_ AERIAL ONLY \_\_\_\_\_ BOTH \_\_\_\_\_

SMOKE RISK RATING: *Attach Colorado Smoke Risk Rating Worksheet, Form SMP-B*

*For Categories III and IV, also attach map of expected lofted and drainage smoke flow.*

Category I \_\_\_\_\_ Category II \_\_\_\_\_ Category III \_\_\_\_\_ Category IV \_\_\_\_\_

FUEL MOISTURE PRESCRIPTIVE ELEMENT:

*This section to be completed for projects with Category III or IV Smoke Risk Rating.*

	Measurement Method <i>Indicate method to be used.</i>		Minimum Fuel Moisture (%)
3-8" diameter logs (1000-hr fuels)	Sampled		
	Calculated		

**for PILE BURNS only:**

YEAR REQUESTING PERMIT FOR: 2006

*Permits for pile burns will be valid from January 1 to December 31. Permits issued after January 1 will be effective on issue date. Submittal of Form SMP-B and modeling output with the application packet are no longer required. APCD may request modeling for specific projects.*

TOTAL NUMBER OF PILES: 12 AVERAGE VOLUME PER PILE (FT<sup>3</sup>): 1350

DAILY NUMBER OF PILES: 12 15x15x6

1000-hr+ FUEL AS % OF VOLUME: 30 *Can round to the nearest 10%, % of logs >3" in diameter.*

HAND PILES: \_\_\_\_\_ OR MACHINE PILES: X *Built entirely or partly by machine.*

DISTANCE TO NEAREST OCCUPIED RESIDENCE: 1.1 *Provide whole miles if distance ≥2, tenths if less.*

Applicant Signature: /s/ Boyd O. Lebeda

Date: December 21, 2005

**Summary  
Conditions:**

Maximum Smoke Dispersion Excellent

Minimum Smoke Dispersion Fair

Minimum Wind Direction Any

Maximum Wind Direction Any (Clockwise)

Approved by  
Colorado APCD:

Date:

Permit  
Number: FCS-06-091

Form SMP-A

Colorado Air Pollution Control Division

Updated November 18, 2004

Page 2 of 2

*End ignition no later than 3 hrs before sunset.*

*Complete 1<sup>st</sup> chunking no later than 2 hrs before sunset.*



**Form SMP-C**  
**EVALUATION OF NON-BURNING FUEL TREATMENTS AND**  
**SMOKE MITIGATION TECHNIQUES USED**

Burn name: Georges Gulch

**Non-Burning Fuel Treatments Utilized:**

Check all that apply

X **Burn is part of a project that includes non-burning fuel treatments. Alternative fuel treatments utilized:**

<u>        </u> Grazing	<u>        </u> Invasive/Exotic Species Management
<u>        </u> Other Biological Control except grazing (green stripping, methods to increase decomposition)	
<u>X</u> Timber Sale	<u>        </u> Mechanical Treatment
<u>        </u> Firewood Sales	<u>        </u> Other <u>  </u>

X **Non-burning fuel treatments were considered and are not available to meet resource objectives because:**

<u>        </u> Legislative/management restrictions	<u>        </u> Safety Concerns
<u>X</u> Fuel has no commercial value	<u>        </u> Access/physical barriers
<u>X</u> Not Economically Reasonably	<u>        </u> Other <u>  </u>

**Smoke and/or Emissions Minimization Techniques Planned:**

Check all that apply

<u>        </u> Burn before greenup	<u>        </u> Burn before large fuels cure (activity fuel only)
<u>        </u> Reduce target area	<u>        </u> Construct fire lines to halt fire spread
<u>        </u> Rapid Mop-Up	<u>        </u> Meteorological scheduling to reduce smoke impacts
<u>X</u> Burn fuels in piles or windrows	
<u>X</u> Piles dry, free of dirt, and small enough to manage smoke impacts	
<u>        </u> High fuel moisture content in large woody fuels minimizes consumption of large fuels	
<u>        </u> Moist litter/duff layer minimizes consumption of litter/duff	

## **Smoke and/or Emissions Minimization Techniques Planned:**

*Continued*

- \_\_\_\_\_ Firing technique used to maximize smoke dispersal and minimize pollutants
- \_\_\_\_\_ Hose lays & pumps to wet fuels and extinguish all or a portion of fire front
- \_\_\_\_\_ Other \_\_\_\_\_

## **Smoke Contingency Plan:**

*This section must answer two questions:*

- 1) *What actions will be taken in order to minimize the likelihood of unacceptable smoke impacts?*
- 2) *If unacceptable smoke impacts occur at smoke sensitive receptors anyway, what mitigation measures will be taken?*  
(Smoke Contingency Plan may be attached as a separate document.)

1. Monitor smoke production and dispersal of test burn
  2. Igniting piles in small groups
  3. Each group of piles will be monitored
  4. Piles are 5 plus years old
  5. We have already made contact with nearest resident (Forest Moen) about the project
  6. Individual piles may be extinguished and mopped up if directed by the burn boss
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_





Permit Number: FCS-06-091  
Burn Name: Georges Gulch Piles

### Permit Conditions - Piles

March 23, 2005

Air Pollution Control Division / Technical Services

#### General Permit Conditions:

Notify the public at least 24 hours but no more than 120 hours before each burn. Include a person that the public may contact regarding the burn.

Notify the Local Air Quality Contact (usually the local health department) before ignition.

Submit **Form SMP-D, Notification of Ignition**, 2-48 hours before ignition.

Submit **Form SMP-E, Daily Actual Fire Activity** by 10:00 a.m. the following day.

Whether or not fire activity occurs under this permit during the calendar year, submit **Form SMP-F, Annual Actual Fire Activity** by the following March 1.

Fire must be able to be extinguished if adverse smoke impacts develop at any smoke sensitive receptor. If this condition is not met and adverse impacts develop, APCD may rescind this permit immediately.

If the piles are in the Front Range area affected by red-blue days and open burning forecasts, those requirements must be met in addition to general pile burning weather conditions described below. See <http://apcd.state.co.us/smoke/prescribed/ppb.doc>.

For the maximum number of piles that may be burned and other conditions, see over.

Piles may be burned under this permit only if:

- Ignition occurs during a snowstorm (indicated by visibility of 1 mile or less) OR
- The National Weather Service forecasts the day's maximum dispersion adjective as fair or higher OR
- One-minute average on-site eye-level wind speeds are:
  - 4(+) mph measured before ignition AND
  - also 4(+) mph measured at least 15 minutes later, during which delay one test pile may be burned.

APCD may revise permit conditions at any time, as circumstances warrant.

Please call Coleen Campbell at 303-692-3224 if you have questions or comments on your permits.

Permit Number FCS-06-091

### Maximum Number of Piles To Burn At Once<sup>1</sup>

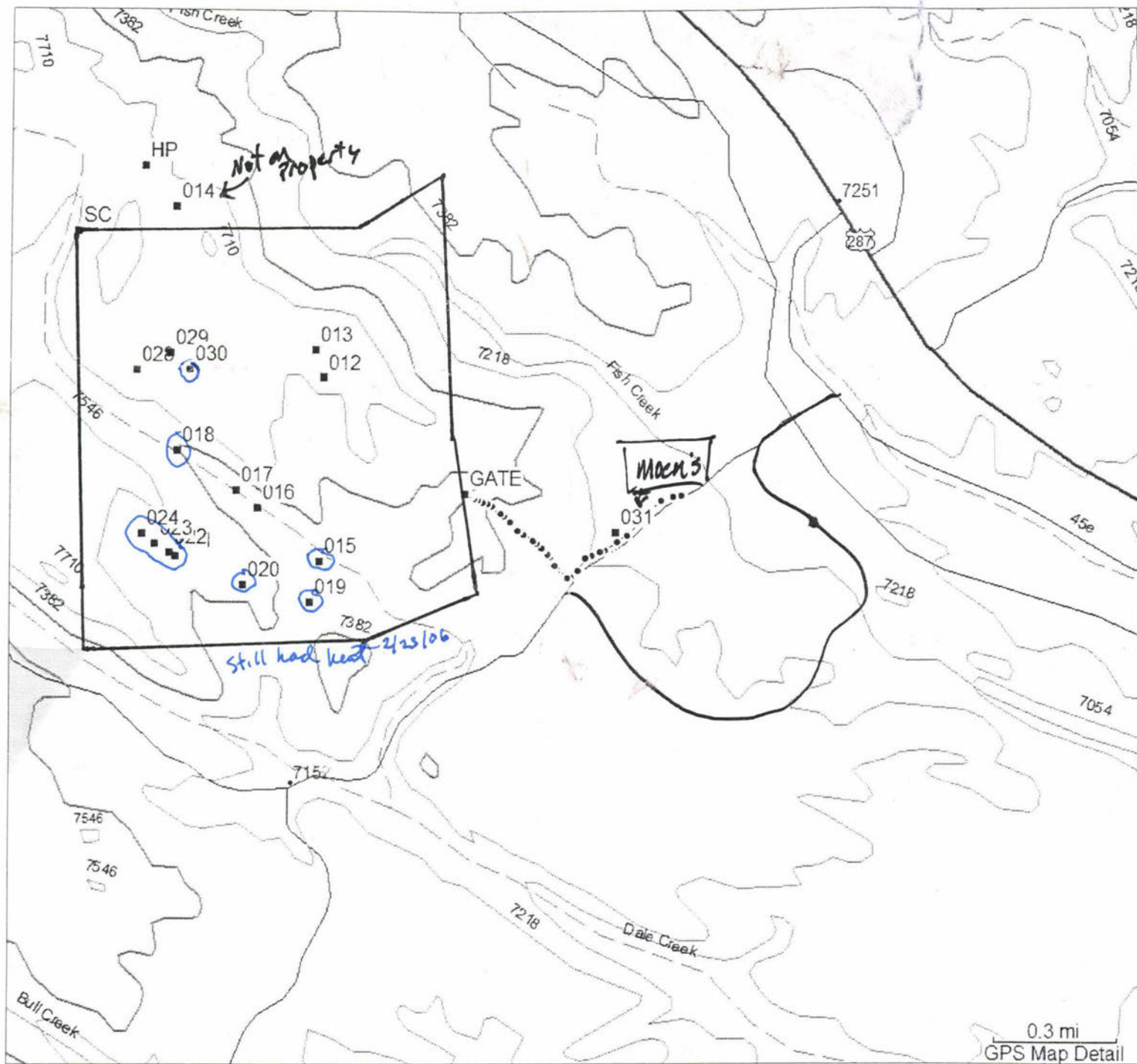
Greenest material in pile must be cut at least 12 months before ignition. Otherwise, see specific permit.

<u>volume per pile</u>	<u>if closest occupied<sup>2</sup> residence at least one mile away</u>	<u>if closest occupied residence &lt; 1 mile away</u>
$\leq 300 \text{ ft}^3$	100 piles	smaller of 75 piles or the number that people on site could extinguish within 2 hours  Also: Complete ignition at least 2 hours before sunset.  Also: Chunk each pile at least once. Complete first chunking at least 1 hour before sunset.
301 - 500 ft <sup>3</sup>	75 piles	smaller of 50 piles or the number that people on site could extinguish within 3 hours  Also: Complete ignition at least 3 hours before sunset.  Also: Chunk each pile at least once. Complete first chunking at least 1 hour before sunset.  Also: Any wind direction is approved during a snowstorm. Otherwise, any wind direction is approved unless marked: _____ through _____ to _____, clockwise.
501 - 9,999 ft <sup>3</sup>	12,000 ft <sup>3</sup> total; or 50,000 ft <sup>3</sup> if > 5 miles from homes	See specific permit.
10,000 (+)ft <sup>3</sup>	See specific permit.	

<sup>1</sup> The maximum number of piles that may be producing smoke at any one time (per 'wave').

<sup>2</sup> For piles > 300 ft<sup>3</sup> each, the home may not be occupied during either the day of burning or the following night. Only for piles  $\leq 300 \text{ ft}^3$  each, if a residence is vacant during the burn day it may be considered to be unoccupied. If there are so few residences within one mile that burners talk with every household in advance and none has unmitigated smoke concerns, those residences also may be considered 'unoccupied.'





Georges Gulch Fire Burn 2/20/06

T12N, R72W. Sec 36

40° 57.794'

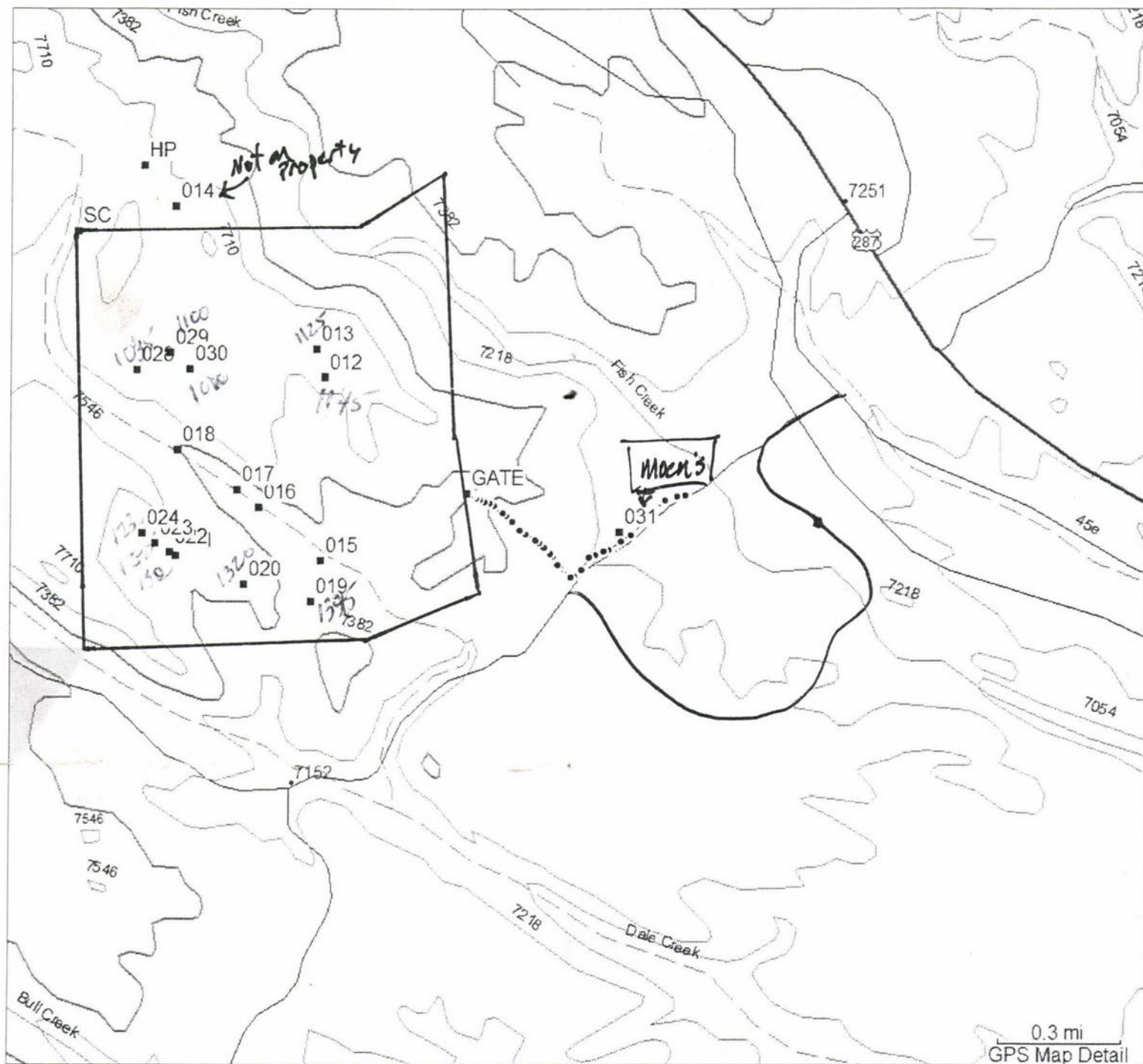
105° 24.712'

22, 23, 24 Still had heat on 2/27/06  
Dover Burns BL

NWS Red Bank  
Chin. + 17 mi







Georges Gulch Fire Burn 2/20/06

T12N, R72W. Sec 36

40° 57.794'

105° 24.712'

1100 21° 35' 10"  
 2-3-11 W  
 clear

Test 1010  
 2-2-1000 1035  
 3-2 " 1100

Strick + Scott  
 depart 1320

Mark Moore  
 Arrives 1325

1200 26° 32' 2"  
 3-5-6-10  
 clear west  
 variable

1300 28° 25'  
 clear 5-16-14  
 NW  
 variable

1415 29° 29'  
 clear 5-4-6-15  
 variable

1520 25° 27'  
 clear 3-6-10  
 variable





Permit Number: FCS-05-325

Burn Name: Georges Gulch Piles

## Permit Conditions - Piles

March 23, 2005

Air Pollution Control Division / Technical Services

### General Permit Conditions:

Notify the public at least 24 hours but no more than 120 hours before each burn. Include a person that the public may contact regarding the burn.

Notify the Local Air Quality Contact (usually the local health department) before ignition.

Submit **Form SMP-D, Notification of Ignition**, 2-48 hours before ignition.

Submit **Form SMP-E, Daily Actual Fire Activity** by 10:00 a.m. the following day.

Whether or not fire activity occurs under this permit during the calendar year, submit **Form SMP-F, Annual Actual Fire Activity** by the following March 1.

Fire must be able to be extinguished if adverse smoke impacts develop at any smoke sensitive receptor. If this condition is not met and adverse impacts develop, APCD may rescind this permit immediately.

If the piles are in the Front Range area affected by red-blue days and open burning forecasts, those requirements must be met in addition to general pile burning weather conditions described below. See <http://apcd.state.co.us/smoke/prescribed/ppb.doc>.

For the maximum number of piles that may be burned and other conditions, see over.

Piles may be burned under this permit only if:

- Ignition occurs during a snowstorm (indicated by visibility of 1 mile or less) OR
- The National Weather Service forecasts the day's maximum dispersion adjective as fair or higher OR
- One-minute average on-site eye-level wind speeds are:
  - 4(+) mph measured before ignition AND
  - also 4(+) mph measured at least 15 minutes later, during which delay one test pile may be burned.

APCD may revise permit conditions at any time, as circumstances warrant.

Please call Coleen Campbell at 303-692-3224 if you have questions or comments on your permits.

Permit Number \_\_\_\_\_

### Maximum Number of Piles To Burn At Once<sup>1</sup>

Greenest material in pile must be cut at least 12 months before ignition. Otherwise, see specific permit.

<u>volume per pile</u>	<u>if closest occupied<sup>2</sup> residence at least one mile away</u>	<u>if closest occupied residence &lt; 1 mile away</u>
$\leq 300 \text{ ft}^3$	100 piles	smaller of 75 piles or the number that people on site could extinguish within 2 hours  Also: Complete ignition at least 2 hours before sunset.  Also: Chunk each pile at least once. Complete first chunking at least 1 hour before sunset.
301 - 500 ft <sup>3</sup>	75 piles	smaller of 50 piles or the number that people on site could extinguish within 3 hours  Also: Complete ignition at least 3 hours before sunset.  Also: Chunk each pile at least once. Complete first chunking at least 1 hour before sunset.  Also: Any wind direction is approved during a snowstorm. Otherwise, any wind direction is approved unless marked: _____ through _____ to _____, clockwise.
501 - 9,999 ft <sup>3</sup>	12,000 ft <sup>3</sup> total; or 50,000 ft <sup>3</sup> if > 5 miles from homes	See specific permit.
10,000 (+)ft <sup>3</sup>	See specific permit.	

<sup>1</sup> The maximum number of piles that may be producing smoke at any one time (per 'wave').

<sup>2</sup> For piles > 300 ft<sup>3</sup> each, the home may not be occupied during either the day of burning or the following night. Only for piles  $\leq 300 \text{ ft}^3$  each, if a residence is vacant during the burn day it may be considered to be unoccupied. If there are so few residences within one mile that burners talk with every household in advance and none has unmitigated smoke concerns, those residences also may be considered 'unoccupied.'



**Form SMP-A**  
**OPEN BURNING PERMIT APPLICATION**  
**PRESCRIBED FIRE PROJECTS**

**BURN NAME:** Georges Gulch Piles **COUNTY:** Larimer

**RENEWAL?** No **LOCATION:** T12N, R72W, Sec. 36  
*Indicate Old Permit Number* *T, R, S or Lat/Long*

**ADMINISTRATIVE UNIT ID:** COS  
*See Info Sheet I for a list of IDs. Include all IDs for multiple agency burns. Private landowner use PVT.*

**CONTACT PERSON:** Boyd Lebeda **PHONE:** 970.491.8445

*Complete Address, Email Address, Fax and Cell Phone fields **ONLY** if this is your first submittal or info has changed.*

**ADDRESS:** 5075 Campus Deliver, CSU, Fort Collins, CO 80523-5075 **CELL:** 970.222.8693

**EMAIL ADDRESS:** blebeda@lamar.colostate.edu **FAX:** 970.491.8645

**BILLING INFORMATION:** *If multiple agencies to be billed, please indicate the percentage for each. Otherwise, the administrative unit listed above will be billed 100%.*

Agency	Percentage	Agency	Percentage

**LANDOWNER:** SLB **Does this Landowner/Agency own or manage  $\geq 10,000$  acres in Colorado?** X YES NO  
*Complete **ONLY** if different than Agency to be billed*

**MANAGEMENT USE/TYPE OF PROJECT:**  
*Check appropriate use/uses*

NATURAL FUEL REDUCTION	<u>    </u>	SPECIES CONVERSION	<u>    </u>	SITE PREP	<u>    </u>
ACTIVITY FUEL REDUCTION	<u>X</u>	RANGE IMPROVEMENT	<u>    </u>	WILDLIFE	<u>    </u>
HAZARDOUS FUEL REDUCTION	<u>    </u>	PEST CONTROL	<u>    </u>	OTHER	<u>    </u>

**REQUESTED WIND DIRECTIONS:** any *e.g.: any, N-E-SW, all but NW... Precise to 2 letters.*

**REQUESTED SPECIAL CONDITIONS, if any:**     

SMOKE SENSITIVE AREAS	MILES FROM BURN	DIRECTION FROM BURN (compass direction or degrees)	MAIN CONCERN(S) Day=D, Night=N, Both=B
US Highway 287	2	NE	D
Co Rd 46E	1.5	E	D
Tie Siding, WY	10	N	D

**Permit Number:** FCS — 05 — 325

**Form SMP-A, cont.**  
**OPEN BURNING PERMIT APPLICATION**  
**PRESCRIBED FIRE PROJECTS**

**for BROADCAST BURNS only:**

PROPOSED BURN DATES: \_\_\_\_\_

*Month or season is sufficient, but dates must be in the same calendar year*

MAX. TOTAL ACREAGE: \_\_\_\_\_ AND MAX. DAILY ACREAGE: \_\_\_\_\_

PREDOMINANT NFDRS

FUEL MODEL: \_\_\_\_\_

*Models A-U (See Info Sheet II for brief description.)*

BRIEF DESCRIPTION

OF FUELS: \_\_\_\_\_

IGNITION METHOD(S): HAND ONLY \_\_\_\_\_ AERIAL ONLY \_\_\_\_\_ BOTH \_\_\_\_\_

SMOKE RISK RATING: *Attach Colorado Smoke Risk Rating Worksheet, Form SMP-B*

*For Categories III and IV, also attach map of expected lofted and drainage smoke flow.*

Category I \_\_\_\_\_ Category II \_\_\_\_\_ Category III \_\_\_\_\_ Category IV \_\_\_\_\_

FUEL MOISTURE PRESCRIPTIVE ELEMENT:

*This section to be completed for projects with Category III or IV Smoke Risk Rating.*

	Measurement Method <i>Indicate method to be used.</i>		Minimum Fuel Moisture (%)
3-8" diameter logs (1000-hr fuels)	Sampled		
	Calculated		

**for PILE BURNS only:**

YEAR REQUESTING PERMIT FOR: 2005

*Permits for pile burns will be valid from January 1 to December 31. Permits issued after January 1 will be effective on issue date. Submittal of Form SMP-B and modeling output with the application packet are no longer required. APCD may request modeling for specific projects.*

TOTAL NUMBER OF PILES: 12 AVERAGE VOLUME PER PILE (FT<sup>3</sup>): 1350

DAILY NUMBER OF PILES: 12 15x15x6

1000-hr+ FUEL AS % OF VOLUME: 30 *Can round to the nearest 10%, % of logs >3" in diameter.*

HAND PILES: \_\_\_\_\_ OR MACHINE PILES: X *Built entirely or partly by machine.*

DISTANCE TO NEAREST OCCUPIED RESIDENCE: 1.1 *Provide whole miles if distance ≥2, tenths if less.*

Applicant Signature: /s/ Boyd O. Lebeda Date: October 31, 2005

**Summary**

Conditions:

Maximum Smoke Dispersion

Excellent

Minimum Smoke Dispersion

Fair

Minimum Wind Direction

Any

Maximum Wind Direction

Any

(Clockwise)

Approved by

Colorado APCD:

Date:

31 Oct 05

Permit

Number:

FCS-05.325

Form SMP-A

Colorado Air Pollution Control Division

*End ignition no later than 3 hrs before sunset.  
Complete 15' chunking no later than 2 hrs before sunset.*



**Form SMP-C**  
**EVALUATION OF NON-BURNING FUEL TREATMENTS AND**  
**SMOKE MITIGATION TECHNIQUES USED**

Burn name: Georges Gulch

**Non-Burning Fuel Treatments Utilized:**

Check all that apply

X **Burn is part of a project that includes non-burning fuel treatments. Alternative fuel treatments utilized:**

<u>        </u> Grazing	<u>        </u> Invasive/Exotic Species Management
<u>        </u> Other Biological Control except grazing (green stripping, methods to increase decomposition)	
<u>X</u> Timber Sale	<u>        </u> Mechanical Treatment
<u>        </u> Firewood Sales	<u>        </u> Other <u>  </u>

X **Non-burning fuel treatments were considered and are not available to meet resource objectives because:**

<u>        </u> Legislative/management restrictions	<u>        </u> Safety Concerns
<u>X</u> Fuel has no commercial value	<u>        </u> Access/physical barriers
<u>X</u> Not Economically Reasonably	<u>        </u> Other <u>  </u>

**Smoke and/or Emissions Minimization Techniques Planned:**

Check all that apply

<u>        </u> Burn before greenup	<u>        </u> Burn before large fuels cure (activity fuel only)
<u>        </u> Reduce target area	<u>        </u> Construct fire lines to halt fire spread
<u>        </u> Rapid Mop-Up	<u>        </u> Meteorological scheduling to reduce smoke impacts
<u>X</u> Burn fuels in piles or windrows	
<u>X</u> Piles dry, free of dirt, and small enough to manage smoke impacts	
<u>        </u> High fuel moisture content in large woody fuels minimizes consumption of large fuels	
<u>        </u> Moist litter/duff layer minimizes consumption of litter/duff	

## **Smoke and/or Emissions Minimization Techniques Planned:**

*Continued*

\_\_\_\_\_ Firing technique used to maximize smoke dispersal and minimize pollutants

\_\_\_\_\_ Hose lays & pumps to wet fuels and extinguish all or a portion of fire front

\_\_\_\_\_ Other \_\_\_\_\_

## **Smoke Contingency Plan:**

*This section must answer two questions:*

- 1) What actions will be taken in order to minimize the likelihood of unacceptable smoke impacts?*
- 2) If unacceptable smoke impacts occur at smoke sensitive receptors anyway, what mitigation measures will be taken?*  
*(Smoke Contingency Plan may be attached as a separate document.)*

1. Monitor smoke production and dispersal of test burn

2. Igniting piles in small groups

3. Each group of piles will be monitored

4. Piles are 5 plus years old

5. We have already made contact with nearest resident (Forest Moen) about the project

6. Individual piles may be extinguished and mopped up if directed by the burn boss



**Form SMP-F**  
**ANNUAL ACTUAL FIRE ACTIVITY**

*Summary of all fire activity for the year. In addition to this report, Category II, III and IV projects will have submitted Daily Activity Reports as burning was completed.*

PERMIT NUMBER: FCS-05-325 BURN NAME: Georges Gulch Piles

NO FIRE ACTIVITY AT THIS LOCATION DURING PERMIT PERIOD X  
*Check if no burning, sign below and return form by March 1<sup>st</sup>.*

List of Burn Dates: \_\_\_\_\_  
\_\_\_\_\_  
*If additional space needed, attach a list of burn dates.*

**FOR BROADCAST BURNS**

ACTUAL ACREAGE: \_\_\_\_\_ *Total acres for project. Must equal sum of Daily Activity Forms (Form SMP-E).*

FUEL TYPES	PERCENT OF ACTUAL ACREAGE (must total 100%)	FUEL LOADING (tons/acre)	PERCENT CONSUMPTION
GRASS			
SAGEBRUSH			
OAKBRUSH or ASPEN			
PINE/CONIFER			
PINON/JUNIPER			
OTHER			

**FOR PILE BURNS**

FUEL TYPES <i>(Check all that are applicable)</i>	
SAGEBRUSH	
OAKBRUSH or ASPEN	
PINE/CONIFER	
PINON/JUNIPER	
PILED SLASH	
OTHER	

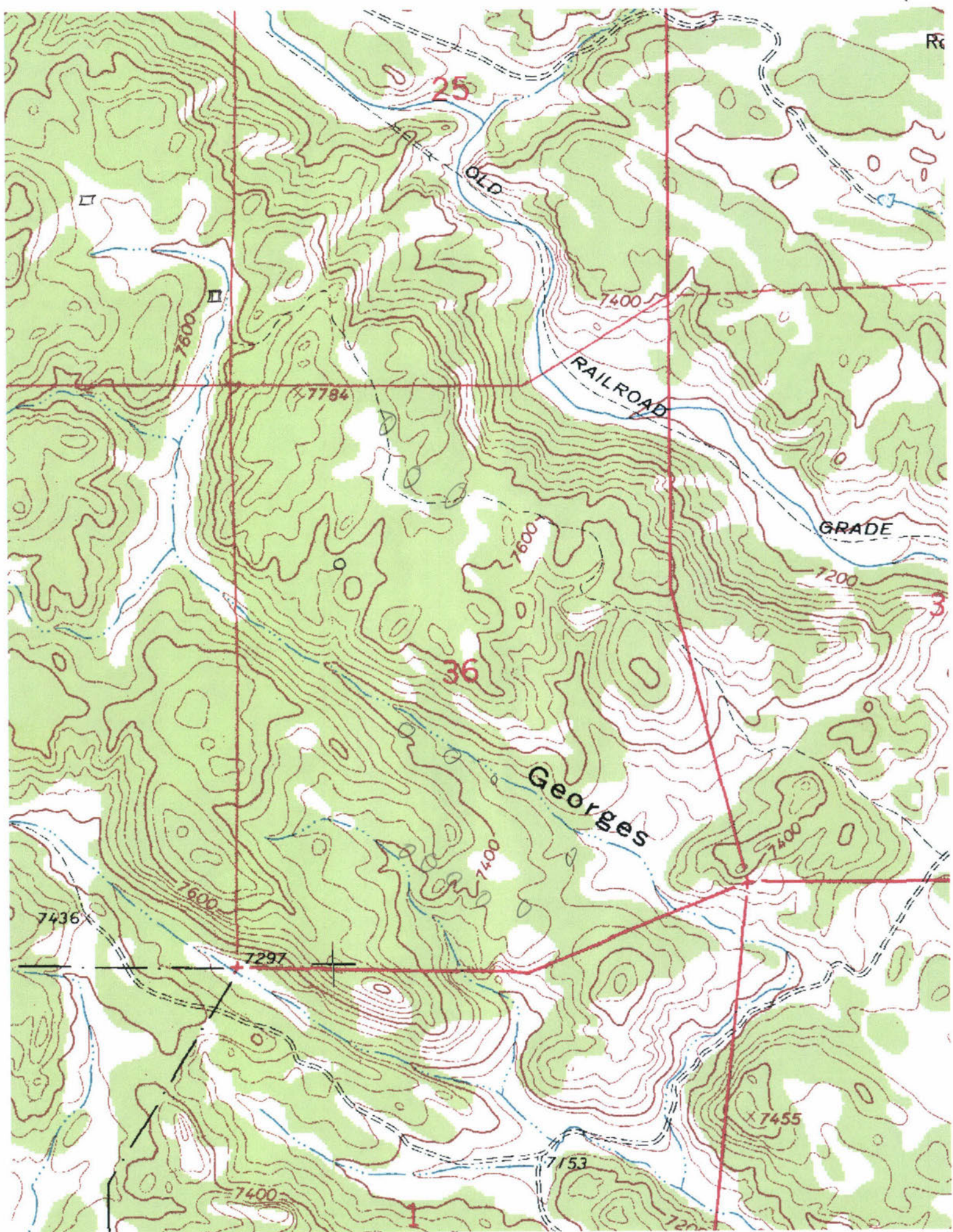
NUMBER OF PILES: \_\_\_\_\_

AVERAGE VOLUME PER PILE(FT<sup>3</sup>): \_\_\_\_\_

AVERAGE % CONSUMED: \_\_\_\_\_

PRINT NAME: Boyd O. Lebeda SIGNATURE: Boyd O. Lebeda DATE: 2/17/06





0 = approx. location of slash piles (12 slash piles total)