

TIMBER SALE REPORT
And
APPRAISAL SUMMARY

Stars# 23398

Sale # 002

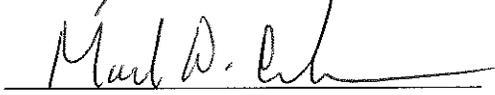
BOURBON SALVAGE TIMBER SALE

Hahns Peak/Bears Ears Ranger District

Medicine Bow-Routt National Forests


Prepared By (Signature)

2-6-14
Date


Reviewed By (Signature)

2/6/14
Date


Approved By: (Signature)

2/6/14
Date

Certification

I hereby certify that the requirements of the Secretary's Regulation 36 CFR 223.30 have been met by this timber sale.


ACTING-District Ranger

2/6/14
Date

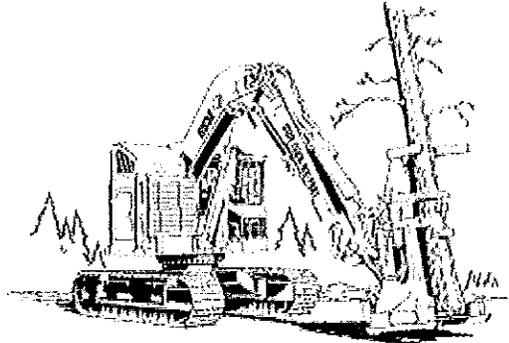


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Environmental Coordination and Certification

1. Environmental Assessment(EA): Little Snake North Timber Sale and Fuels Reduction Project authorizes the harvest and removal of timber products in the Bourbon Salvage Timber Sale. The Decision Notice(DN) was approved on: 12/16/2009 : by Jamie Kingbury in accordance with the management requirements and constraints identified in the Environmental Assessment and specifically that: (Ref. FSM 2432.04b)

- a. Silvicultural treatments were prescribed or reviewed by a certified Silviculturist and are appropriate to the management objective of the area.
- b. The designation of individual trees and cutting units represents proper application of the silvicultural prescriptions.
- c. The selected logging system provides the most economical method of harvesting timber that will accomplish the desired result and produce a quality land management job.
- d. Measures prescribed for coordination with other resources and the protection of the area have been incorporated in the layout and in the contract where appropriate. Documentation of how the mitigation measures for this sale were incorporated to the field design and contract, as specified in the environmental documentation, are attached to this appraisal.
- e. The timber for this sale has been cruised by the procedures and standards in the National Forest Cruising Handbook (FSH 2409.12) and that the cruising meets the sampling error standards of FSH 2409.12, Chapter 41.1. Records of the cruise and check-cruise are on file at the District Office.

2. Silvicultural Prescriptions:

Prepared and Approved By:

<u>Andrew Orlemann</u>	<u>Forester</u>	Date: <u>11/28/2012</u>
<u>David Keefe</u>	<u>R4 Certified Silviculturist</u>	Date: <u>11/23/2012</u>
<u>Jack Lewis</u>	<u>District Ranger</u>	Date: <u>1/29/2013</u>

DESCRIPTION OF SALE:

All referenced documentation, plans, spreadsheets, information and data processed can be found in the corporate database at:

O:\NFS\MBRTB\Program\2400TimberMgmt\2430CommercialTimberSales\HPBE\BourbonSalvageTS

The Bourbon Salvage Timber Sale, STARS# 23398 is located on the Hahns Peak/Bears Ears Ranger District of the Medicine Bow-Routt National Forests in Routt County, Colorado. The sale is approximately 40 miles north of Steamboat Spring, CO near the Wyoming/Colorado state line.

Access is available from County Road 129 to National Forest System Road (NFSR) 550.1. The legal description is as follows: T12N, R85W, sections 14, 15, 22 and 23: 6th P.M., surveyed, Routt County, Colorado. Gross sale area boundary is 735 acres harvest acres is 169.21. Unit of

measure for the sale is hundred cubic feet (CCF). Total Net live and dead sawtimber is 3542.93 CCF.

There are a total of 4 harvest units to be treated. For all units the cutting designation is designation by species (DxSPP). Silvicultural prescriptions for all units are Sanitation/Salvage.

The sale has a road construction package included in the contract. A required 1.06 miles of reconstruction are needed to access units.

LAYOUT & DESIGNATION

See marking guides for specifics of all marking within the sale.

All units are marked with tracer paint.

All boundaries, wildlife exclusions and wildlife reserve trees were marked with Orange paint batches AO898 & XO191.

Individual tree marking (ITM) with Blue paint batch XO159.

ITM Cruise trees were marked with Green paint batch XO469.

Plot Cruise trees were marked with Green paint batch XO469.

Corrections were made with Black paint batch BO672.

Unit layout and marking was completed by 07/30/2012.

Designation	Acres	Units	Volume	Volume / Acre
DxLP 10" min. (C2.3521#)	16.89	3, 16, 31	350.67	20.77
DxLP 10" min. ITM (C2.3521#)	152.32	1	3192.26	20.96

CRUISE

Cruise designed and implementation has been completed pursuant with FSH 2409.12 Timber Cruising Handbook.

Cruise specifics can be found in the cruise plan and output files. In general, the sale volume was determined from variable plot and sample tree cruise methodologies.

The weighted standard error for net volume cruised is: +/-20.88%

Cruise designed by: Craig Kasten Date: 04/05/2012 Addendum: N/A

Cruise completed date: 10/29/2013

Successful check cruise by: Kim Hanson Date check cruise: 01/07/2014

Cruise output certification by: Kent Foster Acting DR Date: 01/31/2014

Members of Cruising Crew	Type of Certification	Expiration Date
Jeff Hartling	Qualified	Indefinite
Craig Kasten	Advanced	Indefinite

VOLUMES

Average Quadratic Mean Diameter for the sale is 14.2 inches and average height is 71.8 feet. For a further breakdown of tree defect, please see the cruise reports which display defect by strata, live or dead, and species.

Cruised Volume by Species, Live and Dead, Sawtimber only			
Species	Live	Fading	Dead
Lodgepole Pine	444.67		3068.40
Engelmann Spruce	12.52		17.34
Subalpine Fir	0		0

A2 - Volume Estimate and Utilization Standards							
Contract Species	Product	Volume	DBH	# pieces	Length	DIB	Merch Factor
Lodgepole Pine and Other Conifer	Sawtimber	3542.93	9.0	1	8	7	10.67
Timber Subject to Agreement C2.11#							
Lodgepole Pine and Other Conifer Topwood	Misc-Conv	unestimated	5.0	1	8	4	8.0

Cutting Unit Table				
Unit #	RX's	Acres	Volume CCF	Designation
1	Salvage/Sanitation	152.32	3192.26	DxLP10"min, ITM
3	Salvage/Sanitation	5.51	114.40	DxLP10"min
16	Salvage/Sanitation	3.82	79.31	DxLP10"min
31	Salvage/Sanitation	7.56	156.96	DxLP10"min
Total		169.21	3542.93	

CONTRACT PREPARATION INFORMATION

- A. Escalation: **Yes**
- B. Scaled or Tree Measurement: **Scaled**
- C. Specified Roads Present: **Yes**
- D. Value of Sale: **\$110,964.57**
- E. Contract Type: **2400-6**
- F. Advertised: **TBD** Bid Opening: **TBD** Termination: **09/30/2016**
- G. Bid Method: **Sealed Bid** Bid Form: **Total Value Bid**

- H. Periodic Payment Initial: **07/17/2015** Additional: **08/23/2015**
- I. Performance Bond: **\$12,000**
- J. Downpayment: **\$11,100**
- K. Appraisal Method: Transaction Evidence
- L. Normal Operating Season: **June 15 to October 15**
- M. Fire Precautionary Period: **May 1 to November 15**
- N. Required Deposits
1. Slash Treatment Deposit (BD Plan): **\$1.06**
 2. Surface Rock Replacement Deposit: **\$5.21**
 3. Blade Maintenance Deposit: **\$0.00**
 4. Engineering Services Deposit: **\$3750.00**

ROAD PACKAGE

See road package for full details of road construction and reconstruction.

Specified Roads								
Road	Termini	Work Class	Design Class	Survey	Design	Stake	Cost	Completion Date
412.1	0.79-0.80	Reconstruction	D15	FS	FS	FS-BC	\$2,081.90	10/15/2015
412.1B	0.00-0.73	Reconstruction	S5	FS	FS	FS-BC	\$5,634.77	10/15/2015
550.5A	0.00-0.32	Reconstruction	S5	FS	FS	PUR-BC	\$3,326.02	10/15/2015
Total							\$11,042.69	

Traffic Service Level: C

Maintenance Level: 1

Reconstruction Engineering Deposit: \$3750.00

ROAD MAINTENANCE AND HAUL COST

The Road Maintenance Spreadsheet shows what roads the Purchaser will maintain and the roads he will pay a deposit to the Forest Service to maintain.

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications									
	From	To		800	801	802	803	804	805	807	808		
412.1	0.00	0.79	0.79			P	P		P	P			

P = Purchaser Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications									
	From	To		800	801	802	803	804	805	807	808		
412.1	0.00	0.79	0.79		P	P	P	P	P	P	P		
412.1B	0.00	0.73	0.73		P	P	P	P	P	P	P		
550.5A	0.00	0.32	0.32		P	P	P	P	P	P	P		
550.1	13.74	40.09	26.35		P	P	P	P	P		P		

P = Purchaser Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications									
	From	To		800	801	802	803	804	805	807	808		
412.1	0.00	0.79	0.79		P	P	P	P	P	P	P		
412.1B	0.00	0.73	0.73		P	P	P	P	P	P	P		
550.5A	0.00	0.32	0.32		P	P	P	P	P	P	P		
550.1	13.74	40.09	26.35		P	P	P	P	P		P		

P = Purchaser Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Pre-haul Maintenance cost: \$2,089.16 **\$0.59/CCF**

During and Post-Haul Maintenance Cost: **\$9.74** (\$5.21 SRR & \$4.53 PBM)

Log Haul Cost: **\$19.23**

A separate haul spreadsheet located on the corporate database is used to calculate the log haul cost and during and post haul maintenance.

TEMP ROAD COST

An estimated 1.19 miles of new temporary road is needed to access this sale. The Purchaser will close 0.74 miles by ripping slashing and seeding and 0.45 miles by recontouring. Costs for this work will be calculated below.

Unless otherwise agreed to by both the Forest Service and the Purchaser, R.O.W. slash from temporary roads will be treated as follows: R.O.W. timber not meeting utilization standards, stumps, limbs and tops shall be scattered outside the clearing limits and lopped and scattered to lie within 24 inches of the ground. Windrowing is acceptable, so it can be pulled back onto the roadway as part of closure.

Closure shall include water barring, ripping, and grass seeding and also include scattering slash, rocks, stumps, and other debris back into the roadway or recontouring portions of road with greater than a 3 foot in height cut or fill slope. Roadway will be about 50% covered by slash, rocks, stumps, and debris.

No culverts are known to be needed on temporary roads, but if they should be needed, removal of culverts should include reshaping of the streambanks to reflect the cross-sectional area and streambank angle of the upstream and downstream sections of stream. Stabilization of newly constructed streambanks including slash, logs and/or rocks may be required as specified by the hydrologist, or other Forest Service personnel.

Temporary road costs are calculated from the Cost Estimating Guide for Road Construction, March 2013.

Construction of Temp Roads

1a. Clearing and Grubbing: 1.19 miles

Clearing and grubbing = 1.83 acres/mile
Unit cost using 1 excavator, 2 saws, 1 pickup = \$2426.09/acre
Percent labor = 40%
Adjustment factor for Davis Bacon = 0.89
Adjustment factor for timber sale = 1.00
Topographic factor = 1.0
Slash clean up factor = 1.1

Cost = 1.83 acres/mile x \$2426.09/acre x 0.89 x 1.0 x 1.0 x 1.1 = \$4346.51

1b. Cost allowance for felling, bucking and skidding = \$95

Cost = 20 CCF/acre x \$95/CCF x 1.83 acres/mile = \$3477
Final step 1 cost = \$4346.51 - \$3477 = \$869.51/mile

2. Excavation: 1.19 miles

Excavation = 1023 cubic yard(cy)/mile
Base cost for excavation = \$1.66/cy
Adjustment factor for common excavation materials = 1.6
Percent labor = 25%
Adjustment factor for Davis Bacon = 0.93
Adjustment for timber sale = 1.00

Cost = 1023 cy/mile x \$1.66/cy x 1.6 x .93 x 1.00 = \$2526.89/mile

Closure of Temp Roads

An estimated 1.19 miles of temporary roads will need closing after the sale. It is estimated that 0.45 miles of road will need recontouring to natural topography. Locations that need recontouring will be designated by the Forest Service at the time of road closure. The remaining 0.74 miles of road will require the general closure. Closure costs are allowed for

all temp roads. Any temporary stream crossings will be removed during the same operating season as it is installed.

3. Seeding: 1.19 miles

Seeding = 1.99 acres/mile

Unit cost for seeding = \$260/acre

Percent labor = 40%

Adjustment factor of Davis Bacon = 0.89

Adjustment factor for timber sale = 1.00

Cost = 1.99 acres/mile x \$260/acre x 0.89 x 1.00 = \$460.49/mile

4a. Rip and slash: 0.74 miles

Dozer and Excavator = \$203.33/hr

Production = 3.5 hr/mile

Percent labor = 30%

Adjustment factor for Davis Bacon = 0.92

Adjustment factor for Timber sale = 1.00

Cost = 203.33/hr x 3.5 hr/mile x 0.92 x 1.00 = \$654.72/mile

4b. Recontour: 0.45 miles

Dozer and Excavator = \$203.33/hr

Production = 52.8 hr/mile

Percent labor = 30%

Adjustment factor for Davis Bacon = 0.92

Adjustment factor for timber sale = 1.00

Cost = \$203.33/hr x 52.8 hr/mile x 0.92 x 1.00 = \$9876.96/mile

Total Temp Road Cost

Construction = sum of 1b. clearing and grubbing after felling, bucking and skidding removed, multiplied by miles. 2. Excavation multiplied by miles.

$(\$869.51 \times 1.19) + (\$2526.89 \times 1.19) = \$4041.72$

Closure = sum of 3. Seeding multiplied by miles. 4a. rip and slash multiplied by miles. 4b. recontour multiplied by miles.

$(\$460.49 \times 1.19) + (\$654.72 \times 0.74) + (\$9876.96 \times 0.45) = \5477.11

Sum of construction and closure = $\$4041.72 + \$5477.11 = \$9518.83$

Mobilization = 10% of total project cost.

$\$9518.83 \times 1.10 = \10470.71

$\$10470.71 \text{ by } 3542.93 \text{ CCF} = \mathbf{\$2.95/CCF}$

SPECIFIED ROAD CLOSURE

Specified road closure will follow plans attached to C5.41# in the timber sale contract. Costs for specified road closures were determined by the engineering department.

550.5A will have the first 220 feet of the road recontoured, and the diversion dips will be reinstalled at the culvert locations after harvest. A temporary gate will be used during harvest. The cost for this work is \$3,381.54.

412.1B will have a slash log barricade near the beginning of the road and several water bars installed along the entire length of the road. A temporary gate will be used during harvest. The cost for this work is \$4,475.35

Total = \$7,856.89 / 3542.93 CCF = **\$2.22/CCF**

EQUIPMENT WASHING

No equipment washing between units will be required. Washing will only be needed before moving into the sale area unless equipment is coming from an area known to be free of noxious weeds or has same weeds as the sale area.

Cost of washing equipment: \$300.00 / 3542.93 = **\$0.08/CCF**

KV PLAN

Specifics of the sale area improvement plan are detailed in the KV Plan.

Essential KV: **\$0**

Planned KV collection: **\$24,000**

SSF PLAN

The amount of available funds for the SSF Plan is determined from total sale value minus minimum to NFF and planned KV collection.

Available Funds: **\$86,213.97**

Funded: **\$53,120.12**

\$53,120.12 x 1.623 (OH) = \$86,213.95

SLASH TREATMENT

Maximum slash depth with cutting units will not exceed 24 inches in depth, slash greater than 24 inches in depth will be scattered, trampled or piled. Slash created at the landing will be piled. This is considered normal industry practice and is included in skid yard costs. Logging slash piles created by the purchaser will be burnt by the Forest Service. The cost to burn piles by Forest Service is detailed in the BD Plan.

BD Plan deposit: \$3,756 / 3542.93 = **\$1.06/CCF**

SALE SKID YARD

A spread sheet was developed to determine average skid distance for the sale. The skid yard spreadsheet uses maximum skid distance and volume per unit to determine a weighted average skid distance. The sale skid yard cost was determined using the regional average regression equations in the TEA program.

Average Skid Distance = **468 Feet**

The sale skid/yard cost = **\$95.05**

EROSION CONTROL

There are an estimated 15 landings needed to log this sale and these landings will need to be seeded with grass after use. There is an estimated 5 percent of the harvest acres in skid trails that will need to be grass seeded. Landing are estimated to be approximately 0.25 acres. Estimated cost of grass seeding w/o fertilizer per acre, labor included. = \$260.00

15 landings x .25acres = 3.75acres

Harvest acres 169.21 x 0.05 = 8.46 acres

Landing acres 3.75 + Skid trail acres 8.46 = 12.21 acres

12.21 X \$260 = \$3,174.60

\$3,174.60 divided by 3542.93 CCF = **\$0.89/CCF**

PURCHASER OBLIGATION PER OPERATION FIRE

1. The normal amount of men required for operation of the sale = 3 men.
2. Maximum amount of purchaser obligation per operations fire = number of men x semiskilled firefighter wage rate x 12 hrs. x 3 days.
3. 3 men x 12 hr. shift x \$11.32/hr. (AD-2 firefighter, Interagency Incident Business Management Handbook) x 3 days = \$1,222.56 rounded to nearest \$100 = \$1,200.00
4. Use **\$1,200.00**

APPRAISAL BULLETIN# BU210214

The most advantageous appraisal point was determined to be the mill facility in Encampment, Wyoming. As per FSH 2409.22-06.3 one appraisal point was chosen because of the single product being appraised (sawlogs), the facility being capable of processing the product, capability of the facility to handle material in the quantities being offered. The Encampment facility was chosen over mills in Saratoga, Wyoming and Walden, Colorado because the small size of this sale and Encampment has the shortest haul distance. As per FSH 2409.18-45.11 & FSH 2409.22-06.3 the appraisal point chosen is the most advantageous from a transportation standpoint and also meets consideration of other described factors as compared to alternative locations.

Information for input to TEA234				
STARS #	State	County	Gross Acres	Harvest Acres
23398	CO	Routt	735	169
Legal Description		Construction Miles	Reconstruction Miles	
T12N R85W Sec; 14, 15, 22, 23		0.00 rounded to 0.00	1.06 rounded to 1.1	
Specified Road Cost		Contributing Funds		Sale QMD
\$22,649.58		\$0.00		14.2
Appraisal Base Period		Planned KV		Essential KV
6-13		\$24,000		\$0
Appraisal Point		Haul Miles		Round Trip
Encampment, WY		32.4		135.82
Haul Cost	Road Maintenance	Sale Slash		Sale Temp Road
\$19.23	\$10.33	\$1.06		\$2.95
Ground Based Volume CCF	Ground Based Vol/acre CCF	Ground Based Vol/tree CF	Ground Based Skid Dist Feet	
3542.93	20.97	23.16	468	
Unit of Measure (UOM)		Product	Timber Property	
03 (CCF)		01 (Sawtimber)	\$0.00	

Road maintenance is a sum of pre-haul (\$0.59), surface rock deposit (\$5.21), and blade maintenance (\$4.53).

Sale slash is a sum of BD Plan (\$1.06) and Slash costs (\$0.00).

Specified road cost is a sum of construction and reconstruction (\$11,042.69), reconstruction engineering deposits (\$3,750) and closure (\$7,856.89).

Reasons and calculations follow:

All volumes are to be rounded to whole numbers because TEA will not except a decimal point. The spruce volume will be added to Lodgepole volume because the spruce volume is less than 1% of total sale volume.

Cruised Volume (Present)		Summed Volume		Volume at Midpoint (Estimated)	
LP	445	LP	445 + 13 = 458	LP	458 - 92 = 366
LPD	3068	LPD	3068 + 17 = 3085	LPD	3085 + 92 = 3177
ES	13	ES	0	ES	0
ESD	17	ESD	0	ESD	0
TF	0	TF	0	TF	0

QUALITY ADJUSTMENT

- Per new Bulletin BU210214, Zone 1 haul distance adjustment entered as a quality adjustment; (Base Haul Cost \$65.04 - Sale Haul Cost \$19.23) x 0.5 = haul adjustment.

$$(65.04 - 19.23) \times 0.5 = \text{-\$22.91/CCF.}$$

UNUSUAL ADJUSTMENT

1. Develop adjustment for the portion of live and insect infested trees to be appraised as "dead" sawtimber (insect infested, wind thrown or fading) by contract midpoint. Use FSH 2409. section 51.6-Deteriorating live unusual adjustment.
 - A. Appraiser estimates that 20% of the live LP will be dead by mid-point of the contract.
(20 estimated) x 458 CCF = 92 CCF changing to dead.
 - B. 92 CCF is subtracted from live volume and added to dead volume.
 - C. Apply a 15 % reduction of lumber selling value based on current WWPA index in the bulletin for deteriorating Lodgepole Pine sawtimber.
367.65 (WWPA index) X .15 (reduction factor) X .53279 (MBF/CCF from cruise)
conversion = $-\$29.38 / \text{CCF}$
This adjustment is to 92 CCF of deteriorating live LP volume.
 - D. Apply a 50% reduction of lumber selling value based on current Adjusted Base Period Price (ABPP) in the bulletin for dead Lodgepole Pine sawtimber.
 $\$22.23 \text{ (ABPP)} \times .50 \text{ (reduction factor)} = -\$11.12 / \text{CCF}$
 - E. Develop total weighted average unusual adjustment for sawtimber.

Lodgepole Pine and other SPP

$$\frac{(\$0 / \text{CCF} \times 366 \text{ Live CCF}) + (\$29.38 / \text{CCF} \times 92 \text{ CCF}) + (\$11.12 / \text{CCF} \times 3085 \text{ CCF})}{3543 \text{ CCF Total}}$$

$$\$0 + \$2702.96 + \$34305.20 = \$37008.16$$

$$\$37008.16 / 3543 \text{ CCF} = -\$10.45 / \text{CCF} \text{ (Adjustment for Sawtimber)}$$

2. Logging Fuel Cost Adjustment. Per BU210214 no fuel adjustment.
3. Hauling Fuel Cost Adjustment. Per BU210214 no fuel adjustment.
4. Total Unusual Adjustment is the sum of items 1-3 above:
 - A. Lodgepole Pine: $-\$10.45 + \$0.00 + \$0.00 = -\10.45

SUMMARY OF RECOMMENDATIONS:

	LIVE TF SAWTIMBER (025)	LIVE & DEAD ES SAWTIMBER (093)	LIVE & DEAD LP & other SAWTIMBER (108)	TOTAL/ AVERAGE
Estimated Volume CCF	0	0	3542.93	3542.93
Advertised Rate (Per CCF)			31.32	31.32
Base Rates (Per CCF)			1.00	1.00
Required Deposits:				
Slash Disposal (BD) (18 U.S.C. 490)			1.06	1.06
Surface Replacement (SRR) (16 U.S.C. 537)			5.21	5.21
Blade Maint.			0.00	0.00
Engineering Services				3,750
Purchaser Road Costs				
Blade Maint.			4.53	4.53
Road Construction & Reconstruction				11,042.69
Road Closure				7,856.89
Pre-Haul Maint				2,089.16
Temp Roads				10,470.71
WWPA Base Index			WWPAC 193.02	WWPAC 193.02
Mean DBH			13.8	13.8

SCALING UNDER C6.824#

Using the letter dated 11/23/2009 from R.E. VANN, III the net weight factor for Lodgepole pine is 54.46 pounds per CCF for live and 41.04 pounds per CCF for dead. A weighted average based upon sale characteristics will be calculated using cruise volume.

$$\frac{(54.46 \text{ Pounds} \times 457.19 \text{ CCF}) + (41.04 \text{ Pounds} \times 3085.74 \text{ CCF})}{3542.93 \text{ CCF}} = 42.77 \text{ Pounds per CCF.}$$