Timber Sale Report
&
Appraisal Summary

Sale #26307

Monument Rock Salvage Timber Sale

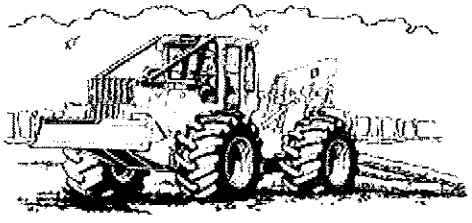
Hahns Peak/Bears Ears Ranger District

Medicine Bow-Routt National Forests and
Thunder Basin National Grassland

Prepared By (Signature) — Date: 3/28/16

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

District Ranger (Signature) — Date: 3-28-16



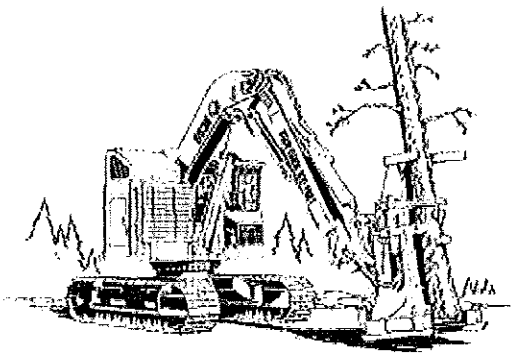


TABLE OF CONTENTS

Environmental Coordination and Certification

1. Environmental Assessment (EA): Coulton Floyd II Timber and Fuels Management Analysis Project authorizes the harvest and removal of timber products in the Monument Rock Salvage Timber Sale. The Decision Notice (DN) was approved on: 10/02/2014 : by Chad Stewart 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 outcome.

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.

f. This National Forest timber sale is consistent with the Forest Plan and the applicable NEPA decision.

2. Silvicultural Prescriptions:

Prepared and Approved By:

Andrew Orlemann	Forester	Date: 12/03/2013
Paul E. Klug	R1 Certified Silviculturist	Date: 12/03/2013

DESCRIPTION OF SALE:

All referenced documentation, plans, spreadsheets, information and data processed can be found at the HPBE district office in the sale file or in the corporate database at:

O:\NFS\MBRTB\Program\2400TimberMgmt\2430CommercialTimberSales\HPBE\Monument Rock TS

The Monument Rock Salvage Sale, STARS# 26307 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 20 miles north of Steamboat Spring, CO along National Forest System Road (NFSR) 429.1 and 430.1.

The legal description is: T9N, R84W, Sections 4, 6, 7, 9, and 18, T10N, R84W, Sections 29, 30, 31 and 32, T9N, R85W, Sections 1, 12, and 13, T10N, R85W, Sections 25 and 36; 6th P.M., surveyed, Routt County, Colorado. Gross sale area boundary is 3940 acres harvest acres is 840.05. Unit of measure for the sale is hundred cubic feet (CCF). Total Net live and dead saw-timber is 17,039.02 CCF.

There are a total of 23 harvest units to be treated. Silvicultural prescriptions for all units include:

- Rx1 - Clearcutting with Reserves
- Rx1a - Clearcutting with Reserves and Removal of Fir (post harvest)
- Rx2 - Salvage Cutting and Irregular Group Regeneration
- Rx2a – Salvage Cutting

The sale has road reconstruction package included in the contract. A required 9.97 miles of road reconstruction is needed to access units.

LAYOUT & DESIGNATION

See marking guides for specifics of all marking within the sale.
All units and marking was completed in the fall of 2015.
All boundaries, leave trees, and reserve trees are marked with Orange tracer paint batches CO246 and DO611. Plot Cruise trees were marked with Green tracer paint batch XO469.
Corrections were made with Black tracer paint batches DO584 and DO790.

Table 1	Sale/Unit Overview			
Designation	**Acres**	**Units**	**Volume**	**Volume/ Acre**
DxLP8"min (C2.3521#)	586.75	1,3,4,5,6,7,9,9B,12,12B,15,19,21,22, 26,30,30B,31,32,35,36,37,39	14684.86	25.03
DxDAM (C2.353#)	253.30	15	2354.16	9.29
Totals	**840.05**		**17039.02**	

CRUISE

Cruise design 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. The sale volume was determined from variable plot cruise methodologies.

The weighted standard error for net volume cruised is: +/-22.89%
Cruise designed by: Jeff Hartling Date: 09/14/2015
Cruise completed date: 09/16/2015
Successful check cruise by: Kim Hanson Date check cruise: February, 2016
Cruise output certification by: Chad Stewart Date: 10/14/2014

Table 2	Cruising Team	
Members	**Type of Certification**	**Expiration Date**
Jeff Hartling, Matt Piscopo	Qualified	Indefinite
Jeff Hartling	Advanced	Indefinite

VOLUMES

Average Diameter Breast Height (DBH) for the sale is 10.9 inches and the mean total height is 77.7 feet. For a further breakdown of tree defect, please see the cruise reports which display defect by strata, live or dead, and species.

Table 3	Cutting Unit Information		
Unit #	**Silvicutural Prescription**	**Final Designation**	**Acres**
1	Rx1a	DxLP, 8" Min	46.13
3	Rx1a	DxLP, 8" Min	72.80
4	Rx2a	DxLP, 8" Min	28.89
5	Rx1a	DxLP, 8" Min	21.41
6	Rx1	DxLP, 8" Min	138.26
7	Rx1a	DxLP, 8" Min	3.04
9	Rx2a	DxLP, 8" Min	9.35
9B	Rx2a	DxLP, 8" Min	1.51
12	Rx1a	DxLP, 8" Min	39.26
12B	Rx1a	DxLP, 8" Min	4.95
15	Rx2a	DxDAM	253.30
19	Rx1a	DxLP, 8" Min	25.99
21	Rx1a	DxLP, 8" Min	5.51
22	Rx1a	DxLP, 8" Min	5.86
26	Rx1	DxLP, 8" Min	15.65
30	Rx2a	DxLP, 8" Min	1.55
30B	Rx2a	DxLP, 8" Min	3.73
31	Rx1	DxLP, 8" Min	3.64
32	Rx1	DxLP, 8" Min	16.48
35	Rx1	DxLP, 8" Min	20.30
36	Rx2	DxLP, 8" Min	33.12
37	Rx1	DxLP, 8" Min	11.60
39	Rx1	DxLP, 8" Min	77.72
Totals			**840.05**

Table 4	Cruised Volume by Species, Live and Dead Sawtimber	
Species	**Live**	**Dead**
Lodgepole Pine	1965.83	13964.90
Engelmann Spruce	0.00	1108.29
Total All = 17039.02		

APPRAISAL CALCUALTIONS OVERVIEW

The following appraisal calculations and allowances are based on actual cruise **volume 17039.02 ccf rounded to 17039.00 ccf as required by TIM**. Additional rounding will be required for TEA Input and is displayed in Table 10 –TEA Input and Table 11- Summary of Recommendations.

Table 5 Volume and Utilization Standards							
Contract Species	**Product**	**Volume**	**DBH**	**# pieces**	**Length**	**DIB**	**Merch Factor**
Lodgepole Pine and Other Conifer	Sawtimber	17039.00	7.0	1	8	6	10.67

ROAD PACKAGE

See road package for full road reconstruction and closure details.

Road reconstruction of 9.97 miles will be required.

Table 6 Specified Road Reconstruction Information						
Road	**Reconstruction Length**	**Survey**	**Design**	**Stake**	**Cost $**	**Completion Date**
429.1	6.68	FS	FS	FS-BC	43,961.99	10/31/17
429.1B	0.43	FS	FS	FS-BC	615.31	10/31/17
429.1D	0.80	FS	FS	FS-BC	4,618.29	10/31/17
429.1G	0.33	FS	FS	FS-BC	1,604.82	10/31/17
429.1H	0.75	FS	FS	FS-BC	992.30	10/31/17
429.1J	0.63	FS	FS	FS-BC	889.54	10/31/17
430.1	0.28	FS	FS	FS-BC	5,677.03	10/31/17
430.1A	0.07	FS	FS	FS-BC	659.90	10/31/17
Total					**$59,019.18**	

FS=Forest Service, BC=Before Clearing

Total Road Cost input for TEA 2400-17 includes the sum of Specified Road Reconstruction ($59,019.18), Deposit for Engineering Services ($0.00) and if applicable C5.41 Road Closure (0.00) estimate: **$59,019.18**

HAUL COST AND ROAD MAINTENANCE

The appraisal point with the highest appraised value (least deficit) was determined to be the mill facility in Parshall, Colorado.

Log Haul Cost:
Log Haul spreadsheet was used to calculate the haul cost for sawtimber = **$35.24/CCF.**

Road Maintenance:
Road Maintenance tables below display what roads the Purchaser will maintain and if applicable the roads he will pay a deposit to the Forest Service to maintain.

Table 7

Prehaul Maintenance Table

	Termini			Applicable Prehaul Road Maintenance Specifications								
Road	From	To	Miles	T800	T801	T802	T803	T804	T805	T806	T807	T808
429.1	0.00	6.68	6.68			P	P	P	P		P	P
429.1B	0.00	0.40	0.40			P	P	P	P		P	P
429.1H	0.00	0.60	0.60			P	P	P	P		P	P
429.1J	0.00	0.60	0.60			P	P	P	P		P	P

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

Table 8

During Haul & Post Haul Maintenance Table

	Termini			Applicable During Haul & Post Haul Road Maintenance Specifications								
Road	From	To	Miles	T800	T801	T802	T803	T804	T805	T806	T807	T808
400.1	End of pavement	NFSR 430.1	0.30		P	P	P	P	P		P	P
429.1	0.00	6.68	6.68			P	P	P	P		P	P
429.1B	0.00	0.40	0.40			P	P	P			P	
429.1D	0.00	0.70	0.70			P	P	P			P	
429.1G	0.00	0.30	0.30			P	P	P			P	
429.1H	0.00	0.60	0.60			P	P	P			P	
429.1J	0.00	0.60	0.60			P	P	P			P	
430.1	0.00	0.30	0.30			P	P	P	P		P	
430.1A	0.00	0.10	0.10			P	P	P	P		P	

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

Pre-Haul Road Maintenance:
A Pre-haul Maintenance spreadsheet was utilized to determine costs which is =
$2,747.00 / 17,039 CCF = $0.16

During & Post-Haul Road Maintenance:
During & Post Haul Maintenance spreadsheet was utilized to determine cost which is =
$10,223.40 / 17,039 CCF = $0.60

Surface Rock Replacement Deposit:
Surface Rock Replacement deposit spreadsheet was utilized to determine cost which is =
$4,481.26 / 17,039 CCF = $0.26

Road maintenance is a sum of pre-haul, during & post haul maintenance, and surface rock replacement deposit = (0.16 + 0.60 + 0.26) = **$1.02/CCF**

TEMPORARY ROAD COST

Temporary Road Narrative
An estimated 6.47 miles of temporary road is needed to access this sale. The Purchaser will close temporary roads as described in C5.34# generally by re-contouring to natural topography, scattering coarse woody debris, water barring, ripping to described depths or variations of these techniques. Costs for this work and the variance in this work by road has been fully calculated using the Cost Estimating Guide for Road Construction, March 2013 combined with an internally developed temporary road cost calculation spreadsheet.

Unless otherwise agreed to by both the Forest Service and the Purchaser right-of-way (ROW) slash from temporary roads will be treated as follows: ROW timber not meeting utilization standards of contract provision A2, to include but not limited to 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 if needed.

Temporary Road Cost Calculation Spreadsheet Narrative
The top portion of the cost calculation spreadsheet lists all temporary road segments. These segments are broken down into the length in feet by cross slope. The upper right portion of the sheet depicts the dollar amount for each work item by road. Clearing and grubbing costs are calculated in the boxes with the blue heading. Excavation costs are calculated in boxes with the orange heading, closure in red, seeding in green and temporary gates in yellow.

1. Temp Road Clearing and Grubbing: The costs per unit are calculated using an excavator, 2 sawyers, and one crew rig. The amount of clearing was in the 3 CCF per acre ranges. The estimated CCF per acre of clearing was determined to be approximately 7 CCF. At 7 CCF per acre the clearing work would take about 7 hours to complete. The cost of $888.70 per acre will be expanded by acreage determined by cross slope. A portion of the clearing is determined to be merchantable and the cost to yard this material was removed from the total cost of clearing. The total cost of clearing and grubbing is **$4,482.63.**

2. Temp Road Excavation: The cost per unit is calculated using a D6 dozer capable of moving 80 cubic yards per hour. The cost per cubic yard is $1.80. This amount is expanded by an average cubic yard per cross slope. The total cost of excavation is **$9,837.69**.

3. Temp Road Closure: Closure cost were determined using a D6 and excavator working together to re-contour a road back to natural topography. The cost per hour remains static, but the production rate changes by cross slope. The calculated hourly rate is $249.37. Temp roads or portions of temp roads that have little cross slope and cannot be re-contoured will be closed by rip and water bar only, the same hourly rate is used as the cross slope production rate calculation adjusts adequately for this. The total cost of closure is **$10,221.74.**

Subtotal:	
1.	$4,482.63
2.	$9,837.69
3.	$10,221.74
Subtotal	**$24,542.06**

6. Mobilization and Consumer Price Index (CPI) adjustment:

Mobilization is 9% of total work.

Total after mobilization: $24,542.06 x 1.09 = $26,750.85

CPI 3% per year for 3 years since 2013 cost estimating guide or 9%.

Total after CPI: $26,750.85 x 1.09 = $29,158.43

Temporary Roads = $29,158.43 / 17039 CCF = **$1.71/CCF**

EROSION CONTROL

There are an estimated 82 landings needed to log this sale and these landings will need to be seeded with grass after use. Landings are estimated to be approximately 0.25 acres. Estimated cost of grass seeding w/o fertilizer per acre, labor included. = $265.74. The cost for this work will be added to temporary roads, as this is part of the temporary transportation system.

82 landings x .25acres = 20.5 acres
20.5 X $265.74 = $5,447.67

Erosion Control = $5,447.67 / 17039 CCF = **$0.32/CCF**

BRUSH DISPOSAL / SLASH TREATMENT

Whole tree skidding is preferred for all units except in those units required to leave limbs and tops at point of felling, residual slash greater than 24 inches in depth will be scattered, bucked or trampled to lie within 24 inches of the ground. Excess slash created at the landing will be piled; this is considered normal industry practice and is included in skid yard costs. Logging slash piles will be burnt by the Forest Service and requires a deposit. The cost to burn piles by Forest Service is detailed in the Brush Disposal Plan.

Brush Disposal Deposit: $24,283.00 / 17039 CCF =**$1.43/CCF**

SALE SKID YARD

A spread sheet was developed to determine average skid distance for the sale. The skid yard spreadsheet uses average 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 = **416 Feet**
The sale skid/yard cost = **$112.10**

PURCHASER OBLIGATION PER OPERATION FIRE

1. The normal amount of men required for operation of the sale = 3 personnel.
2. Maximum amount of purchaser obligation per operations fire = number of personnel x semi-skilled firefighter wage rate x 12 hrs. x 3 days.
3. 3 men x 12 hr. shift x $17.60/hr. (AD-C firefighter, Interagency Incident Business Management Handbook) x 3 days = $1900.80 rounded to nearest $100 = $1900
4. Use **$1,900.00**

KV PLAN

Specifics of the sale area improvement plan are detailed in the KV Plan.
Essential KV includes Program Support: **$40,510.00**

SSF PLAN

The amount of available funds for the SSF Plan is determined from total sale value minus planned KV collection minus minimum to NFF if applicable (not applicable to salvage sales).
Total Sale Collection Limit/Available Funds: **$10,607.00**
Total funded with consideration of 77.1% overhead = 10607/1.771 = **$5,989.00**

ADJUSTMENTS

Quality Unusual Adjustment – Haul Adjustment
Per new Bulletin BU210116, Zone 1 Haul Distance Adjustment entered as a quality adjustment;
(Base Haul Cost – Sale Haul Cost) x 0.5 = haul adjustment.
LP and Other Conifer - No Adjustment

TEA Inputs

Table 9 Volume - A2, Live & Dead Sawtimber Rounded as required by TIM	
Species	**Live & Dead**
Lodgepole Pine & Other Conifer	17,039
Total = 17,039 CCF	

Table 10 Information Input to TEA234					
STARS #	*Bulletin*	*State*	*County*	*Sale Area Acres*	*Harvest Acres*
26307	BU210116	CO	Routt	3969	840.05 rounded 840
Legal Description			*Construction Miles*		*Reconstruction Miles*
T10N R84W			0.00 rounded to 0.0		9.97 rounded to 10.0
Specified Road Cost 1/			*Contributing Funds*		*Sale Quadratic Mean Diameter*
$59,019.18 rounded $59,019.00			$0.00		11.2
Appraisal Base Period			*Gross Sale Acres*		*Essential KV*
February 12, 2016			3940		$40,510
Appraisal Point Sawtimber			*Haul Miles*		*Round Trip Time*
Parshal, CO			95.07 rounded 95		311.88 rounded 312
Haul Cost	*Road Maintenance 2/*		*Sale Slash 3/*		*Sale Temp Road 4/*
$35.24	$1.02		$1.43		$2.03
Unit of Measure (UOM)			*Product*	*Timber Property*	
03 (LP + O)			01 (Sawtimber)	$0.00	
Quality Adjustment LP	*Quality Adjustment ES*		*Unusual Adjustment LP*	*Unusual Adjustment ES*	
-	-		-	-	
Ground Based Volume CCF	*Ground Based Vol/acre CCF*		*Ground Based Vol/tree CF*	*Ground Based Skid Distance Feet*	
17,039	20.28 rounded 20.3		16.15 rounded 16	416	

1/ Specified road cost is a sum of construction ($0.00) and reconstruction ($59,019.18) and reconstruction engineering deposits ($0.00) and if applicable C5.41# Road Closure ($0.00) total dollars.
2/ Road maintenance is a sum of pre-haul ($0.16), during & post haul maintenance ($0.60), and surface rock replacement deposit ($0.26) per CCF.
3/ Sale slash is a sum of brush disposal ($1.43) and slash treatment ($0.00) per CCF.
4/ Sale temp roads is a sum of temp roads ($1.71) and Erosion control ($0.32) per CCF

SUMMARY OF RECOMMENDATIONS & GENERAL CONTRACT INFORMATION

A. Bulletin: **BU210116**
B. Escalation: **Escalated**
C. Scaled or Tree Measurement: **Sales by Weight**
D. Reconstruct Specified Roads Present: **Yes**
E. Value of Sale: weighted average bid value = **$51,117.00**
F. Contract Type: **2400-6**
G. Advertised: **03/15/2016** Bid Opening: **05/15/2016** Termination: **06/30/2021**
H. Bid Method: **Sealed Bid** Bid Form: **Weighted Average Bid**
I. Periodic Payment Initial: **TBD** Additional: **TBD**
J. Performance Bond: **TBD**
K. Appraisal Method: **Transaction Evidence**

L. Normal Operating Season: **June 15 to October 31**
M. Fire Precautionary Period: **May 1 to November 15**
N. Required Deposits:
    1. Slash Treatment Deposit (BD Plan): **$1.43/CCF**
    2. Surface Rock Replacement Deposit: **$0.26/CCF**
    3. Engineering Services Deposit: **$0.00**

Table 11	**Summary of Recommendations**			
	Lodgepole Pine and Other Conifer Sawtimber	Engelmann Spruce Sawtimber	Non-saw	TOTAL/ AVERAGE
Estimated Volume CCF	17039	-	-	17039
Advertised Rate (Per CCF)	3.00	-	-	3.00
Base Rates (Per CCF)	3.00	-		3.00
Value of Sale	$51,117.00	-	-	$51,117.00
Required Deposits:				
Slash Disposal (BD) (18 U.S.C. 490)	$1.43	-	-	$1.43
Surface Replacement (SRR) (16 U.S.C. 537)	$0.26	-	-	$0.26
Blade Maint.	-	-	-	-
Engineering Services	-	-	-	-
Purchaser Road Costs				
During & Post Maint.	$0.60		-	$0.60
Road Reconstruction	$59,019.00	-	-	$59,019.00
Road Closure	-	-	-	$0.00
Pre-Haul Maint	$0.16	-	-	$0.16
Temp Roads	$2.03	-	-	$2.03
WWPA Base Index	172.66 WWPAC	-	-	-
Average DBH	-	-	-	10.9
Quadratic Mean Diameter	-	-	-	11.2