



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Elbow - GNA  
Sale KL-341-2024-GF8521-01

District: Klamath/Lake

Date: April 20, 2023

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**Cost Summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$146,568.03	(\$100,585.68)	\$45,982.35
		<b>Project Work:</b>	\$0.00
		<b>Advertised Value:</b>	\$45,982.35



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### Timber Description

Location:

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	1	0	90
White Fir	1	0	85
Ponderosa Pine	1	0	90
Western Larch	1	0	90
Other	1	0	100

Volume by Grade	6" - 7"	8"+	12"+	8" - 11"	Pulp	Total
Douglas - Fir	294	1,726	0	0	0	2,020
White Fir	303	485	0	0	0	788
Ponderosa Pine	0	0	166	426	0	592
Western Larch	93	64	0	0	0	157
Other	0	0	0	0	626	626
<b>Total</b>	690	2,275	166	426	626	4,183

**Comments:** Pond Vales Used: Local Pond Values, January 2023  
 Log Markets: La Grande, Elgin, Clarkston, Lewiston  
 Other Costs (no Profit & Risk): none  
 Other Costs (with Profit & Risk to be added):none  
**ROAD MAINTENANCE**  
 General Road Maintenance:  
 Limited Use Road 12.91 miles x \$1285.00 per mile = \$16,589.00  
 Roadway Brushing 5.5 miles x \$800.00 per mile = \$4,400.00  
 Total Road Maintenance: \$20,989.00, \$5.02 per MBF



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### Logging Conditions

<b>Combination#:</b> 1	Douglas - Fir	100.00%
	White Fir	100.00%
	Ponderosa Pine	100.00%
	Western Larch	100.00%
	Other	100.00%
<b>Logging System:</b>	Cut To Length	<b>Process:</b> Harvester Head Delimiting
<b>yarding distance:</b>	Medium (800 ft)	<b>downhill yarding:</b> No
<b>tree size:</b>	Small / Thinning 10in (90 Bft/tree), 18-20 logs/MBF	
<b>loads / day:</b>	7	<b>bd. ft / load:</b> 4000
<b>cost / mbf:</b>	\$232.14	
<b>machines:</b>	Harvester Forwarder	



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### Logging Costs

Operating Seasons: 1.00	Profit Risk: 10%
Project Costs: \$0.00	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$0.00

**Miles of Road**

**Road Maintenance:** \$5.02

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

**Hauling Costs**

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.0
White Fir	\$0.00	3.0	4.0
Ponderosa Pine	\$0.00	3.0	4.0
Western Larch	\$0.00	3.0	4.0
Other	\$0.00	3.0	3.2



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### Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
<b>Douglas - Fir</b>									
\$232.14	\$5.52	\$4.16	\$114.59	\$0.00	\$35.64	\$0.00	\$2.00	\$0.00	\$394.05
<b>White Fir</b>									
\$232.14	\$5.77	\$4.16	\$119.80	\$0.00	\$36.19	\$0.00	\$2.00	\$0.00	\$400.06
<b>Ponderosa Pine</b>									
\$232.14	\$5.52	\$4.16	\$114.59	\$0.00	\$35.64	\$0.00	\$2.00	\$0.00	\$394.05
<b>Western Larch</b>									
\$232.14	\$5.52	\$4.16	\$114.59	\$0.00	\$35.64	\$0.00	\$2.00	\$0.00	\$394.05
<b>Other</b>									
\$232.14	\$5.02	\$4.16	\$130.21	\$0.00	\$37.15	\$0.00	\$2.00	\$0.00	\$410.68

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$450.00	\$55.95	\$0.00
White Fir	\$0.00	\$430.00	\$29.94	\$0.00
Ponderosa Pine	\$0.00	\$396.03	\$1.98	\$0.00
Western Larch	\$0.00	\$450.00	\$55.95	\$0.00
Other	\$0.00	\$250.00	(\$160.68)	\$0.00



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### Summary

**Amortized**

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
White Fir	0	\$0.00	\$0.00
Ponderosa Pine	0	\$0.00	\$0.00
Western Larch	0	\$0.00	\$0.00
Other	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	2,020	\$55.95	\$113,019.00
White Fir	788	\$29.94	\$23,592.72
Ponderosa Pine	592	\$1.98	\$1,172.16
Western Larch	157	\$55.95	\$8,784.15
Other	626	(\$160.68)	(\$100,585.68)

**Gross Timber Sale Value**

Recovery:           \$45,982.35

Prepared By: Mike Billman

Phone: 541-362-6760

Elbow GNA  
KL-341-2024-GF8521-01

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*Maintenance Limited Use Road*

Number of Miles to be Maintained: 12.91  
Cost per Mile: \$1,285.00  
**Total Cost: \$16,589.35**  
Cost/Mbf: \$ 4.66

Elbow GNA  
KL-341-2024-GF8521-01

*Other Costs*

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*Roadway Clearing and Brushing*

Number of Miles to be Maintained: 5.5  
Cost per Mile: \$ 800.00  
**Total Cost: \$ 4,400.00**  
Cost/Mbf: \$ 1.24

***Elbow-GNA***  
***KL-341-2024-GF8521-01***  
***Cruise Report***



**SALE NAME:** Elbow- GNA

**LEGAL DESCRIPTION:**

Portions of Sections 7, 8, 9, 10, 17, 18, and 19 of T5N, R42E, W.M., Wallowa County, Oregon

**BOUNDARY LINES:**

Unit boundaries are posted with “Timber Sale Boundary” signs, marked with orange paint and blue flagging.

**ACREAGE:**

Gross Sale Acreage: 506Acres  
Exclusion Acreage 0 Acres  
Net Sale Acreage: 506Acres

Mapping was accomplished using a handheld Global Positioning System unit with the data run on the district Geographical Information System Program.

**TREATMENT:**

The Timber Sale is a partial cut harvest.

**CRUISE METHOD:**

Variable plot cruise with all plots measured.

**BASAL AREA FACTOR:**

Area	BAF	Type Acreage
Area 1	20 BAF	506

**MEASUREMENTS AND GRADING:**

- DBH and Height were measured on all “in” trees for measure plots.
- All trees were graded using the segment system.



**TREE HEIGHT:**

All trees were measured to a fixed diameter outside bark. This height is usually taken as high up the bole as possible, where the cruiser can clearly see the bole, and the taper remains constant (usually 6 or 8 inches). The log segments are broken out and graded accordingly.

**MINIMUM D.B.H:**

9.0” DBH for sawlog volume.

**DIAMETER STANDARDS:**

1” diameter class

**BTR:**

Standard ratios were used. See attached species tables.

**FORM FACTOR:**

Form factor was measured or estimated at 16’ for each tree. Each tree was assigned its own FF.

**FORM POINT:**

All trees were sighted at DBH.

**VOLUME COMPUTATION:**

All cruise data was input and run at the district on Atterbury’s Super Ace program.

**FINAL CRUISE RESULTS:**

<b>AREA</b>	<b>CV%</b>	<b>SE%</b>	<b>ACRES</b>
Area 1	60.5	7.0	506

**TIMBER DESCRIPTION**

**SAWLOG VOLUME:**

This volume was obtained from the variable plot cruise. All material graded camp run. See grade table for minimum standards.

**TOTAL SAWLOG VOLUME**

Species	Ave. DBH	Gross Vol/Acre (bf)	Net Vol/Acre (bf)	Net Sale Vol (Mbf)
Douglas-fir	14.0	4,564	4,260	2,020
White fir	12.7	2,117	1,729	788
Western Larch	11.2	396	352	157
Ponderosa pine	13.6	2,283	1,929	592
	<b>Total</b>	9,360	8,271	3,557

**TOTAL NET SAWLOG VOLUME: MBF**

Elbow GNA Timber Sale					
MBF to Tons Conversions					
Species:	MBF	Tons	\$/MBF	Total \$	\$/Ton
DF/WL	2,177.00	14,822.00	\$54.95	\$119,625.15	\$8.07
WF	788.00	5,511.00	\$28.81	\$22,702.28	\$4.12
PP	592.00	3,603.00	\$0.98	\$580.16	\$0.16
<b>TOTAL:</b>	<b>3,557.00</b>	<b>23,936.00</b>	<b>\$40.18</b>	<b>\$142,897.91</b>	<b>\$6.12</b>
Pulp (No-Bid Species)	628.00	3544.00			\$0.25
<b>GRAND TOTAL:</b>	<b>4,185.00</b>	<b>27,480.00</b>			

TC PSTATS		PROJECT STATISTICS							PAGE	1	
USES		PROJECT ELBOW2							DATE	11/8/2022	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
05N	42	17	01	VP		506.00	74	318	S	E	
		PLOTS		TREES	TREES	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		74	318	4.3							
CRUISE		19	80	4.2	44,334		.2				
DBH COUNT											
REFOREST											
COUNT		51	238	4.7							
BLANKS		4									
100 %											
STAND SUMMARY											
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR		44	36.4	14.0	53	10.4	38.9	4,564	4,260	1,012	1,012
CON FIR		13	24.8	12.7	41	6.1	21.9	2,117	1,729	465	465
PONDEROS		18	21.3	13.6	45	5.9	21.6	2,283	1,929	493	493
W LARCH		5	5.1	11.2	54	1.1	3.5	396	352	84	84
<b>TOTAL</b>		<b>80</b>	<b>87.6</b>	<b>13.4</b>	<b>48</b>	<b>23.5</b>	<b>85.9</b>	<b>9,360</b>	<b>8,271</b>	<b>2,054</b>	<b>2,054</b>
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		66.5	10.0	147	163	180					
CON FIR		78.6	22.7	74	96	118					
PONDEROS		58.4	14.1	91	106	121					
W LARCH		53.0	26.4	63	86	109					
<b>TOTAL</b>		<b>71.4</b>	<b>8.0</b>	<b>124</b>	<b>135</b>	<b>145</b>	<b>204</b>	<b>51</b>	<b>23</b>		
CL	68.1	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		56.2	8.5	35	38	41					
CON FIR		80.1	23.1	20	26	32					
PONDEROS		47.4	11.5	24	27	30					
W LARCH		62.6	31.1	15	21	28					
<b>TOTAL</b>		<b>61.3</b>	<b>6.8</b>	<b>30</b>	<b>32</b>	<b>35</b>	<b>150</b>	<b>37</b>	<b>17</b>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		129.5	15.0	31	36	42					
CON FIR		163.9	19.0	20	25	30					
PONDEROS		196.7	22.8	16	21	26					
W LARCH		304.0	35.3	3	5	7					
<b>TOTAL</b>		<b>61.1</b>	<b>7.1</b>	<b>81</b>	<b>88</b>	<b>94</b>	<b>149</b>	<b>37</b>	<b>17</b>		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		123.5	14.3	33	39	45					
CON FIR		159.4	18.5	18	22	26					
PONDEROS		198.3	23.0	17	22	27					
W LARCH		288.2	33.5	2	4	5					
<b>TOTAL</b>		<b>59.6</b>	<b>6.9</b>	<b>80</b>	<b>86</b>	<b>92</b>	<b>142</b>	<b>36</b>	<b>16</b>		
CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		122.5	14.2	3,654	4,260	4,867					
CON FIR		158.1	18.4	1,412	1,729	2,046					
PONDEROS		197.3	22.9	1,487	1,929	2,372					

TC PSTATS		<b>PROJECT STATISTICS</b>						PAGE	<b>2</b>	
USFS		<b>PROJECT ELBOW2</b>						DATE	11/8/2022	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	42	17	01	VP	506.00	74	318	S	E	
CL	68.1	COEFF	<b>NET BF/ACRE</b>			# OF PLOTS REO.		INF. POP.		
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
W LARCH		285.2	33.1	235	352	468				
<b>TOTAL</b>		<i>60.5</i>	<i>7.0</i>	<i>7,689</i>	<i>8,271</i>	<i>8,852</i>	<i>146</i>	<i>37</i>	<i>16</i>	
CL	68.1	COEFF	<b>NET CUFT FT/ACRE</b>			# OF PLOTS REO.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		122.7	14.3	868	1,012	1,156				
CON FIR		158.0	18.4	379	465	550				
PONDEROS		197.2	22.9	380	493	606				
W LARCH		284.4	33.0	57	84	112				
<b>TOTAL</b>		<i>59.8</i>	<i>7.0</i>	<i>1,911</i>	<i>2,054</i>	<i>2,197</i>	<i>143</i>	<i>36</i>	<i>16</i>	

Spp	S T	So Gr rt de	Log Len	Gross M MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-2	30-3	40+	
WF		PU	16	86		86	9.8		86									WF	86	MBF
WF		DO	14	25	50.0	12	1.4			12										
WF		DO	16	960	19.1	776	88.7			291	136	95	183	71				WF	788	MBF
WF		Totals		1,071	18.3	875	20.9		86	304	136	95	183	71						
DF		PU	12	8		8	.4			8										
DF		PU	16	129		129	6.0		57	71								DF	136	MBF
DF		DO	12	56	12.6	49	2.3			49										
DF		DO	14	91	5.8	86	4.0			86										
DF		DO	16	2,026	7.0	1,885	87.4			159	431	571	557	167				DF	2,020	MBF
DF		Totals		2,309	6.7	2,156	51.5		57	373	431	571	557	167						
WL		PU	16	20		20	11.4		20									WL	20	MBF
WL		DO	12	21		21	12.0			21										
WL		DO	14	9		9	5.3			9										
WL		DO	16	149	14.9	127	71.3			63	35	29						WL	157	MBF
WL		Totals		200	11.1	178	4.3		20	94	35	29								
PP		PU	16	14		14	1.5			14								PP	384	MBF
PP		DO	16	1,141	15.7	962	98.5			370	191	235	166					PP	592	MBF
PP		Totals		1,155	15.5	976	23.3		370	206	235	166								
Total		All Species		4,736	11.6	4,185	100.0		164	1140	807	931	905	238					4,183	MBF

  Sawlog - 3,557 MBF

  Pulp/Fiber - 626 MBF

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4,183 MBF

TC PLOGSTVT USFS Project Log Stock Table - TONS

T05N R42E S17 TyVP	506.00	Project: ELBOW2	Acres: 506.00	Page: 1	Date: 1/3/2023	Time: 1:16:00PM
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Spp	S	So Gr	Log	TONS	% Spc	Tons by Scaling Diameter in Inches										Total Tons	
						2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29		30-39
WF	PU	16		365	6.2		365								WF	365	Tons
WF	DO	14		101	1.7			101									
WF	DO	16		5,410	92.1			1851	1317	510	1023	709			WF	5,511	Tons
WF	Totals			5,877	21.4		<del>365</del>	1952	1317	510	1023	709					
DF	PU	12		53	.4			53									
DF	PU	16		680	4.7		307	373							DF	733	Tons
DF	DO	12		497	3.4			497									
DF	DO	14		644	4.4			644									
DF	DO	16		12,723	87.2			979	3650	3467	3535	1091			DF	13,813	Tons
DF	Totals			14,597	53.1		<del>987</del>	2546	3650	3467	3535	1091					
WL	PU	16		65	6.3		65								WL	65	Tons
WL	DO	12		154	15.1			154									
WL	DO	14		36	3.6			36									
WL	DO	16		769	75.0			384	211	174					WL	959	Tons
WL	Totals			1,025	3.7		<del>65</del>	575	211	174							
PP	PU	16		75	1.3			75							PP	2,381	Tons
PP	DO	16		5,909	98.7			2306	1210	1374	1019				PP	3,603	Tons
PP	Totals			5,984	21.8			<del>2306</del>	1285	1374	1019						
Total	All Species			27,482	100.0		737	7379	6463	5525	5577	1800				27,480	Tons

Sawlog      23,936 Tons  
 Pulp/Fiber      3,544 Tons  


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27,480 Tons