



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Big Yaq Sale 341-06-03

District: West Oregon

Date: 3/8/06

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$235,036.20	\$0.00	\$235,036.20
		Project Work	(\$114,424.00)
		Advertised Value	\$120,612.20



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Timber Description

Big Yaq

Sale 341-06-03

District: West Oregon

Location: Portions of Sections 18 & 19, T10S, R7W, and portions of Section 13, T10S, R8W, W.M., Lincoln and Benton County, Oregon

Date: 3/8/06

Stand Stocking: 40%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	12	0	98

Volume by Grade	Douglas - Fir	Total
3S	668	668
4S	402	402
Total	1,070	1,070

Comments: Pond Values Used: 4th Quarter Calendar Year 2005.

Other Costs - No P&R

Firewood Sorting: 24 landings X .25 hrs/landing = 6 hrs
6 hrs X \$110 = \$660

TOTAL Other Costs - No P&R = \$660

Other Costs - Plus P&R

Truck Assist (Area III): \$480/day X 5 days = \$2,400
Additional Fire Protection: = \$1,665

TOTAL Other - Plus P&R = \$4,065



Timber Sale Appraisal

Logging Conditions

Big Yaq

Sale 341-06-03

"STEWARDSHIP IN FORESTRY"

Combination#: 1 Douglas - Fir 88.24%

Yarding Distance: Short (400 ft) **Downhill Yarding:** No

Logging System: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber

Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

Loads/Day: 3 **Bd. Ft./Load:** 3,500

Cost/MBF: \$284.21

Machines:

- Log Loader (A)
- Stroke Delimber (A)
- Tower Yarder (Medium)

Combination#: 2 Douglas - Fir 11.76%

Yarding Distance: Short (400 ft) **Downhill Yarding:** Yes

Logging System: Track Skidder **Process:** Feller Buncher

Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

Loads/Day: 5 **Bd. Ft./Load:** 3,500

Cost/MBF: \$189.70

Machines:

- Feller Buncher w/ Delimber
- Log Loader (B)
- Stroke Delimber (B)
- Track Skidder



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal **Logging Costs** **Big Yaq** **Sale 341-06-03**

Date: 3/8/06

Operating Seasons: 1.0

Profit & Risk: 15%

Project Costs: \$114,424

Other Costs (P/R): \$4,065

Slash Disposal: \$0

Other Costs: \$660

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Road Maintenance: \$2.61

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	3.0	3.5



Timber Sale Appraisal **Logging Costs Breakdown** **Big Yaq** **Sale 341-06-03**

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir
Logging	273.09
Road Maintenance	2.66
Fire Protection	2.53
Hauling	44.69
Other (P/R appl.)	3.80
Profit & Risk	49.02
Slash Disposal	0.00
Scaling	2.00
Other	0.62
Total	378.41

Amortization	0.00
Pond Value	598.07
Stumpage	219.66
Amortized	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Big Yaq Sale 341-06-03

Amortized

	Douglas - Fir
MBF	0.00
Value	0.00
Total	0.00

Unamortized

	Douglas - Fir
MBF	1,070.00
Value	219.66
Total	235,036.20

Gross Timber Sale Value

Recovery \$235,036.20

Prepared by: Blake Mckinley

Date: 3/8/06

District: West Oregon

Phone: (541) 929-3266

SUMMARY OF ALL PROJECT COSTS

Sale Name: Big Yaq

Date: December 2005
Time: 11:58

Project #1 - New Construction

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>	
B1 to B2	2.8 sta	\$2,369	
B3 to B4	2.5 sta	\$2,757	
B5 to B6	5.5 sta	\$5,424	
D5 to D6	4.1 sta	\$3,479	
D7 to D8	2.9 sta	\$2,519	
D9 to D10	1.0 sta	\$942	
H to H5	3.5 sta	\$627	
TOTALS	22.3 sta		\$18,117

Project #2 - Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	106.5 sta	\$4,287
B to C	81.2 sta	\$17,198
B7 to B8	20.8 sta	\$18,952
B9 to B10	3.7 sta	\$2,185
D to E	38.0 sta	\$482
D1 to D2	2.4 sta	\$1,117
D3 to D4	25.4 sta	\$24,554
F to G	138.0 sta	\$2,974
G to H	10.9 sta	\$181
H to H1	16.4 sta	\$1,561
H to H4	38.8 sta	\$1,738
H2 to H3	22.3 sta	\$11,124

Project #2 - Additional grading

\$1,134

Project #2 - Additional culvert clean-out

\$60

TOTALS	504.4 sta	\$87,547
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Project #3 - Brushing

\$3,989

Project #4 - Post Harvest Activities

Landing patch rock and turnaround rock

\$2,531

Move in

	<u>Cost</u>	<u>On-site move</u>
Crawler tractor, D-7 or equiv. x2	\$774	\$100
Grader, Cat 14-G or equiv.	\$241	
Dump Truck (H2 to H3 endhauling)	\$144	
Water Truck	\$158	
Backhoe x2	\$482	\$50
Vibratory roller	\$241	\$50

TOTAL

\$2,240

GRAND TOTAL

\$114,424

Compiled by J. Doyal

Date 12/29/2005

TIMBER SALE SUMMARY

Sale Name: Big Yaq

Sale Type: Commercial thinning harvest: 231 net acres; recovery sale; 64% BOF and 22% CSL located in Benton County, and 14% BOF located in Lincoln County.

Sale Area: Portions of Section 18 & 19, T10S, R7W, and Section 13, T10S, R8W, W.M., Benton and Lincoln County, Oregon.

Access: From Philomath proceed 11 miles west on Highway 20 to Blodgett. Turn right onto the Eddyville-Blodgett highway and proceed approximately 7 miles to Nashville. Turn right on Logsdan Road and proceed 3 miles. Turn right on Green Mountain Road and proceed approximately 1.9 miles to the intersection with Harmsen Road. This is Project Point B which is located on the northwest side of Area II.

For access to Area III proceed approximately 2.2 miles from Nashville to Yaquina Road which begins at Project Point F. Travel approximately 2.6 miles to a locked gate, and then proceed 0.2 miles to Project Point H, which is located on the southeast side of Area III.

Boundaries: Areas I-III are posted with "Timber Sale Boundary" signs and fluorescent pink flagging. Portions of the timber sale boundary adjacent to property lines are marked with fluorescent red paint in addition to signs and flagging. The boundary between Area I and II, and the area boundaries around patch cuts in Area I are posted with yellow "Area Boundary" signs and blue and white striped flagging. The Type F stream buffer boundary located within the east side of Area I is posted with "Buffer Zone" signs and fluorescent pink flagging. Type N stream buffers are not posted. Road right-of-way boundaries are posted with "R/W Boundary" signs and fluorescent pink flagging. Reserve trees located within the patch cuts in Area I are marked with fluorescent red paint.

Timber Description: The timber sale consists of three separate areas. These stands were pre-commercially thinned about 15-19 years ago. All areas will be thinned leaving the biggest and best Douglas-fir trees. In all areas hardwoods and all conifers other than Douglas-fir will be retained, after harvest. However, hardwoods will be harvested in patch cuts in Area I.

Area I: This area contains a 32 year old Douglas-fir plantation. The target residual basal area is 120 ft² per acre. About 47 trees per acre will be harvested. The average DBH of these "take" trees will be 13 inches. The average DBH of leave trees will be approximately 14 inches. Approximately 96 trees per acre will remain after harvest. About 11 acres of patch cuts are located in Area I.

Area II: This area supports a 25 year old Douglas-fir plantation. The target residual basal area is 120 ft² per acre. About 66 trees per acre will be harvested. The average DBH of these "take" trees will be 11 inches. The average DBH of leave trees will be approximately 14 inches. Approximately 126 trees per acre will remain after harvest. Approximately 120 trees per acre have been pruned in this area and should be retained after harvest.

Area III: This area contains a 31 year old Douglas-fir plantation. The target residual basal area is 120 ft² per acre. About 57 trees per acre will be harvested. The average DBH of these "take" trees will be 12 inches. The average DBH of leave trees will be approximately 15 inches. Approximately 103 trees per acre will remain after harvest.

Topography: Area I forms a basin around a Type F and Type N stream with the east side of the area opening toward the Yaquina River. The area has north, south, and east facing slopes. Parts of the area have slopes in excess of 80%, with an average of 50% to 70%. Area II forms a shallow basin with three small Type N streams draining toward the west. Slopes range from 20% to 60%, and are generally west facing. Area III has a ridgetop extending to the center of the north portion of the area and another ridgetop extending from east to west in the center of the area. Slopes average 50% to 70% from the ridgetops. The extreme south end of the area has gentle slopes of less than 40%. Aspect is variable throughout Area III.

Streams: The Yaquina River, which is a large Type F stream, borders the west side of Area III. The sale boundary is posted a minimum of 100 feet horizontal distance from the edge of this stream. An unnamed Type F tributary exists in Area I for approximately 400 feet before turning to a Type N designation. This stream has a posted buffer, which extends an average of 50 feet horizontal distance from each side of the stream's edge. The Little Yaquina River, a Type F stream, flows to the west of Area II. The sale boundary is posted a minimum of 50 feet horizontal distance from the edge of the stream. All timber within the posted buffers of Type F streams will be reserved from harvest.

Numerous small Type N streams are present within all three sale areas. All timber within 25 feet horizontal distance of Type N streams will be reserved from harvest.

Reserve Trees: In all three sale areas, hardwoods (except in patch cuts) and conifer other than Douglas-fir are reserved from cutting. All trees within 25 feet either side of Type N streams, all trees within the Type F buffer, and all trees marked with red paint within Area I patch cuts are reserved from cutting. Area III contains a 9 acre reserve area composed mainly of hardwoods where all trees are reserved from cutting.

T & E Surveys: Marbled murrelet habitat is present in close proximity to all three sale areas. Areas I and II will have seasonal operating restrictions because of marbled murrelet habitat within 100 meters of the sale boundary. For Area III, the sale boundary was posted more than 100 meters from murrelet habitat so seasonal restrictions are not required.

Logging Methods: Approximately 88% of the sale volume will require cable yarding. The remaining 12% can be ground yarded.

Projects:	No. 1 – Road Construction	0.4	miles
	No. 2 – Road Improvement	9.6	miles
	No. 3 – Roadside Brushing	7.0	miles
	No. 4 – Post Harvest Activities		

Other Requirements: Firewood sort; truck assist when hauling from Points H to H5 in Area III.

Cruise Summary:

MBF Volume

Area	Gross Acres	Net Acres*	Species	Gross Volume (Mbf)	Net Volume (Mbf)	% Hidden D&B	% Vol. Adjustment**	Final Adjusted Volume (Mbf)
I	107	97	Douglas-fir	382	377	2	20	443
II	46	42	Douglas-fir	133	133	2	20	156
III	109	92	Douglas-fir	407	400	2	20	471
Total	262	231	Douglas-fir	922	910	2	20	1070

* Net acres represent a reduction of gross acres to account for existing roads, streams, and non-thinnable areas. Acres were determined using GIS and orthophotos.

** Volume adjustment is factored in to account for extra volume from new road construction, right-of-way widening, corridor/skid roads, and ingrowth.

Grade by %

Area	Species	3 Saw	4 Saw
I	Douglas-fir	60%	40%
II	Douglas-fir	43%	57%
III	Douglas-fir	71%	29%
Total	Douglas-fir	62%	38%

Cruise Methods: All three areas were cruised using variable radius plots and a 20 BAF prism. A 4 chain by 4 chain grid was laid out in order to sample all areas. On each plot all conifer trees were counted and "take" trees were chosen based on which were the smallest and/or most defective, leaving a residual basal area of 120 ft² per acre in all areas. In Area II pruned trees will be given preference to retain rather than the largest trees. The DBH of all "take" trees was measured and the "take" trees that were within a 40 BAF prism were measured for height to a 5" top and each log graded. The DBH of all "leave" trees was estimated. The standard error for this cruise was 3.9%.

Tree form: Form point was at 16 feet. Form factor for each measured conifer was determined using a relaskop and the formula of number of bars at form point divided by number of bars at DBH.

Measurement Standards: Heights were measured to the nearest foot to a top cruise diameter of 5 inches inside bark. Diameters were measured at breast height to the nearest inch.

Grading System: All trees were graded in a maximum of 40 foot segments unless defect or length to top grade cruise diameter warranted otherwise.

Utilization Standards: A minimum log segment of 5 inches in diameter (inside bark) by 12 feet in length was used. Only trees 8 inches DBH and 12 feet in length and larger were cruised.

Hidden Defect and Breakage: A hidden D & B of 2% was applied to the net cruised volumes.

Computation Procedures: All cruise data was entered into the SuperAce program and calculated at the district office.

Cruisers/ Dates: The sale areas were cruised by B. Mckinley, D. Moore, and J. Hayzlett, March and April 2005.

Signatures:

Cruise Specialist *John M. Miller*

Unit Forester *Sam Brey*

NOTICE
This logging plan was used to appraise the logging costs for this timber sale and is provided for information only. The Department of Forestry does not warrant that this plan represents the best or safest way to harvest.

