



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Powderhouse Sale 341-04-076

District: Tillamook

Date: 4/5/04

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$208,315.13	\$281,354.64	\$489,669.77
		Project Work	(\$191,930.00)
		Advertised Value	\$297,739.77



Timber Sale Appraisal Timber Description Powderhouse Sale 341-04-076

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Location: Portions of Sections 28 and 33, T2N, R9W, W.M., Tillamook County, Oregon.

Date: 4/5/04

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	13	0	95
Western Hemlock / Fir	12	0	95
Alder (Red)	13	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Total
2S	11	138	0	149
3S	106	1,007	0	1,113
4S	35	234	0	269
Camprun	0	0	892	892
Total	152	1,379	892	2,423

Comments: Pond Values Used: 1st Quarter 2004.

Cedar Stumpage = Pond Value - Hemlock Total Logging Cost
\$744.25/MBF = \$1,000/MBF - \$255.75

ADDITIONAL COSTS (Profit and Risk to be added)

Brand and Paint - \$2/MBF x 2423 MBF = \$4,846

TOTAL OTHER COSTS + (P/R) = \$4,846.00

ADDITIONAL COSTS (Profit and Risk Included)

Road Work- Exhibit "P"; A to B 153+10 to 187+10

Clearing and Grubbing

Scattering - sidecast pullback 0.48 acres @ \$815/acre = \$391.20

Excavation - Sidecast pullback

Stations 163+60 to 174+15 1,719 cys. @ \$1.65/cy = \$2,836.35

Waterbar construction 3.5 hrs. @ \$130/hr = \$455.00

Special Projects

Grass seed fertilize and mulch 2.74 acs. @ \$820/ac = \$2,246.80

TOTAL OTHER COSTS = \$5,929.35

ROAD MAINTENANCE

Grading - once per MMBF

Interim Maintenance \$500/Mile x 1 Grading x 6 miles / 2423 = \$1.24

Final Maintenance \$500/Mile x 1 Grading x 6 miles / 2423 = \$1.24

Maintenance Rock - approximately 50 cu. yds./MMBF/Mile

120 cu. yds. x 6 miles x \$3.85/yard / 2423 = \$1.16

TOTAL MAINTENANCE COST = \$3.62



Timber Sale Appraisal

Logging Conditions

Powderhouse

Sale 341-04-076

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	55.00%	
	Western Hemlock / Fir	55.00%	
	Alder (Red)	55.00%	
Yarding Distance:	Medium (800 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:	10		Bd. Ft./Load: 3,500
Cost/MBF:	\$105.83		
Machines:	Feller Buncher w/ Delimber Log Loader (B) Stroke Delimber (B) Track Skidder		
Combination#: 2	Douglas - Fir	45.00%	
	Western Hemlock / Fir	45.00%	
	Alder (Red)	45.00%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Manual Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	4		Bd. Ft./Load: 3,500
Cost/MBF:	\$236.90		
Machines:	Log Loader (A) Tower Yarder (Medium)		



Timber Sale Appraisal

Logging Costs

Powderhouse

Sale 341-04-076

"STEWARDSHIP IN FORESTRY"

Date: 4/5/04

Operating Seasons: 1.6

Profit & Risk: 15%

Project Costs: \$191,930

Other Costs (P/R): \$4,846

Slash Disposal: \$0

Other Costs: \$5,929

Road Maintenance: \$3.62

Miles of Road			
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	2.0	3.4
Western Hemlock / Fir	\$0.00	3.0	3.2
Alder (Red)	\$0.00	3.0	3.0



Timber Sale Appraisal Logging Costs Breakdown Powderhouse Sale 341-04-076

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
Logging	164.81	164.81	164.81
Road Maintenance	3.81	3.81	3.81
Fire Protection	1.79	1.79	1.79
Hauling	69.16	46.11	53.79
Other (P/R appl.)	2.00	2.00	2.00
Profit & Risk	36.24	32.78	33.93
Slash Disposal	0.00	0.00	0.00
Scaling	2.00	2.00	2.00
Other	2.45	2.45	2.45
Total	282.26	255.75	264.58

Amortization	0.00	0.00	0.00
Pond Value	570.33	375.06	580.00
Stumpage	288.07	119.31	315.42
Amortized	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Powderhouse Sale 341-04-076

Amortized

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
MBF	0.00	0.00	0.00
Value	0.00	0.00	0.00
Total	0.00	0.00	0.00

Unamortized

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
MBF	152.00	1,379.00	892.00
Value	288.07	119.31	315.42
Total	43,786.64	164,528.49	281,354.64

Gross Timber Sale Value

Recovery \$489,669.77

Prepared by: Tim Lieske

Date: 4/5/04

District: Tillamook

Phone: (503) 842-2545



PROJECT SUMMARY SHEET

Sale: Powderhouse

IMPROVEMENT

Point	A to B	187+10	stations =	\$165,581.08
Point	E to F	10+70	stations =	\$3,890.27
Point	G to H	12+05	stations =	\$4,190.42
SUBTOTAL IMPROVEMENT				\$173,661.77

Road Closure

Close abandoned road between Points C and D	\$889.00
SUBTOTAL VACATING	\$889.00

STOCKPILE

2"-0" Crushed Rock Stockpile at MP 2.75 on Miami Forest Road	\$14,841.98
SUBTOTAL STOCKPILE	\$14,841.98

MOVE IN **\$2,534.03**

GRAND TOTAL **\$191,926.78**

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Powderhouse</u>	Road:	<u>A to B</u>								
Construction -	<table border="0"> <tr> <td align="center">0+00</td> <td align="center">stations</td> </tr> <tr> <td align="center">0.00</td> <td align="center">miles</td> </tr> </table>	0+00	stations	0.00	miles	Improvement -	<table border="0"> <tr> <td align="center">187+10</td> <td align="center">stations</td> </tr> <tr> <td align="center">3.54</td> <td align="center">miles</td> </tr> </table>	187+10	stations	3.54	miles
0+00	stations										
0.00	miles										
187+10	stations										
3.54	miles										
CLEARING AND GRUBBING -											
Scattering - road	6.51 acres @	\$815.00 per acre =	\$5,305.65								
Piling - waste areas @ 25+15, 84+50, & 153+10	0.50 acres @	\$905.00 per acre =	\$452.50								
Endhaul - road	1.59 acres @	\$1,500.00 per acre =	\$2,385.00								
		TOTAL CLEARING AND GRUBBING	\$8,143.15								
EXCAVATION -											
Road Earthwork - 15+75 to 86+90	71.15 sta. @	\$45.00 per sta. =	\$3,201.75								
Road Earthwork - 86+90 to 93+55	6.65 sta. @	\$148.00 per sta. =	\$984.20								
Road Earthwork - 93+55 to 96+40	2.85 sta. @	\$65.00 per sta. =	\$185.25								
Road Earthwork - 96+40 to 101+55	5.15 sta. @	\$293.00 per sta. =	\$1,508.95								
Road Earthwork - 101+55 to 138+60	37.05 sta. @	\$65.00 per sta. =	\$2,408.25								
Road Earthwork - 138+60 to 142+35 - common	366 cy. @	\$1.15 per c.y. =	\$420.90								
Road Earthwork - 138+60 to 142+35 - rock	1859 cy. @	\$4.05 per c.y. =	\$7,528.95								
Road Earthwork - 142+35 to 146+35	4.00 sta. @	\$65.00 per sta. =	\$260.00								
Road Earthwork - 146+35 to 150+35	4.00 sta. @	\$148.00 per sta. =	\$592.00								
Road Earthwork - 150+35 to 163+60	13.25 sta. @	\$65.00 per sta. =	\$861.25								
Road Earthwork - 163+60 to 171+75	8.15 sta. @	\$100.00 per sta. =	\$815.00								
Road Earthwork - 171+75 to 174+15	2.40 sta. @	\$122.00 per sta. =	\$292.80								
Road Earthwork - 174+15 to 181+90	7.75 sta. @	\$65.00 per sta. =	\$503.75								
Road Earthwork - 181+90 to 187+10	5.20 sta. @	\$100.00 per sta. =	\$520.00								
Pullback	101+55 to 105+70	677 cy. @	\$1.40 per c.y. = \$947.80								
Berm	17+50 to 56+25	474 cy. @	\$1.15 per c.y. = \$545.10								
Berm	72+75 to 74+20	81 cy. @	\$1.15 per c.y. = \$93.15								
Berm	105+70 to 113+00	225 cy. @	\$1.15 per c.y. = \$258.75								
Berm - Scatter outside right-of-way	113+00 to 119+85	210 cy. @	\$1.15 per c.y. = \$241.50								
Berm - Scatter outside right-of-way	125+65 to 132+30	542 cy. @	\$1.15 per c.y. = \$623.30								
Berm	132+30 to 134+40	172 cy. @	\$1.15 per c.y. = \$197.80								
Berm	134+90 to 140+60	265 cy. @	\$1.15 per c.y. = \$304.75								
Berm	142+10 to 147+65	68 cy. @	\$1.15 per c.y. = \$78.20								
Berm	149+50 to 151+55	70 cy. @	\$1.15 per c.y. = \$80.50								
Widening - common	18+50 to 19+00	62 cy. @	\$1.15 per c.y. = \$71.30								
Widening - common	20+60 to 24+00	555 cy. @	\$1.15 per c.y. = \$638.25								
Widening - common	143+45 to 143+85	15 cy. @	\$1.15 per c.y. = \$17.02								
Widening - rock	143+45 to 143+85	77 cy. @	\$4.05 per c.y. = \$311.89								
Widening - common	170+10 to 171+75	97 cy. @	\$1.15 per c.y. = \$111.44								
Widening - rock	170+10 to 171+75	294 cy. @	\$4.05 per c.y. = \$1,190.42								
Reduce elevation 2.5 feet -	133+60 to 134+10	72 cy. @	\$2.10 per c.y. = \$151.20								
Raise elevation 2 feet - drift -	25+15 to 26+00	80 cy. @	\$1.75 per c.y. = \$140.00								
Raise elevation 2 feet - drift -	61+10 to 61+60	47 cy. @	\$1.75 per c.y. = \$82.25								
		TOTAL EXCAVATION	\$26,167.46								
ENDHAUL & COMPACTION -											
End-haul - truck to waste area Sta. 25+15 from	15+75 to 56+25	1,091 cy. @	\$0.61 per c.y. = \$641.97								
End-haul - truck to waste area Sta. 84+50 from	56+25 to 142+10	3,659 cy. @	\$0.75 per c.y. = \$2,744.25								
End-haul - truck to waste area Sta. 153+10 from	142+10 to 171+75	652 cy. @	\$0.56 per c.y. = \$364.72								
Spread & compact - fill	25+15 to 26+00	80 cy. @	\$0.35 per c.y. = \$28.00								
Spread & compact - fill	61+10 to 61+60	47 cy. @	\$0.35 per c.y. = \$16.45								
Spread & compact - fill	138+60 to 142+35	27 cy. @	\$0.35 per c.y. = \$9.45								
Spread & compact - waste areas @ Sta. 25+15, 84+50, & 153+10		5402 cy. @	\$0.35 per c.y. = \$1,890.56								
		TOTAL ENDHAUL	\$2,758.29								
CULVERTS - MATERIALS & INSTALLATION											
<u>Culverts</u>											
686	LF of 18"	\$10,118.50	180	LF of 24"	\$3,195.00						
168	LF of 30"	\$3,486.00	36	LF of 36"	\$864.00						
0	LF of 42"	\$0.00	0	LF of 48"	\$0.00						
0	LF of 54"	\$0.00	0	LF of 60"	\$0.00						
0	LF of 66"	\$0.00	0	LF of 72"	\$0.00						
		\$13,604.50			\$4,059.00						
<u>Half Rounds</u>											
140	LF of 21"	\$1,596.00	10	LF of 30"	\$145.00						
0	LF of 36"	\$0.00	0	LF of 42"	\$0.00						
		\$1,596.00			\$145.00						
<u>Culvert Stakes & Markers</u>											
30	stakes	\$240.00									
32	markers	\$192.00									
		\$432.00									
		TOTAL CULVERTS			\$19,836.50						
ROCKING PROJECTS -											
0+00 to 12+15	730	cy. of	Jaw-Run	@	\$8.07 per c.y. = \$5,893.65						
12+15 to 15+75	385	cy. of	Jaw-Run	@	\$8.07 per c.y. = \$3,108.29						
15+75 to 153+10	7,482	cy. of	Jaw-Run	@	\$8.29 per c.y. = \$62,051.87						
0+00 to 153+10	1,849	cy. of	2"-0"	@	\$8.29 per c.y. = \$15,334.66						
Ground Water Drain	12+15 to 15+75	40	cy. of	Washed Drain Rock	@	\$16.48 per c.y. = \$659.20					
Slope Stabilization	13+40 to 14+80	218	cy. of	Riprap	@	\$9.36 per c.y. = \$2,084.84					
Energy Dissipator	46+00	80	cy. of	Riprap	@	\$2.80 per c.y. = \$224.00					
Energy Dissipator	51+85	20	cy. of	Riprap	@	\$8.68 per c.y. = \$173.67					
Energy Dissipator	81+00	60	cy. of	Riprap	@	\$2.80 per c.y. = \$168.00					
Energy Dissipator	81+35	40	cy. of	Riprap	@	\$2.80 per c.y. = \$112.00					
Energy Dissipator	110+15	30	cy. of	Riprap	@	\$10.33 per c.y. = \$310.00					
				TOTAL SURFACING	\$90,120.18						
SPECIAL PROJECTS											
Remove boulders from road surface -	9.00	hours @		\$140.00 per hour =	\$1,260.00						
Construct waste areas, turnouts, turnarounds, and ditches -	15.75	hours @		\$130.00 per hour =	\$2,047.50						
Construct sediment catch basins -	4	@		\$55.00 each =	\$220.00						
Install waterbars -	20	@		\$25.00 each =	\$500.00						
Install carsonite markers -	4	@		\$25.00 each =	\$100.00						
6" dia. perforated drain pipe & installation -	360	feet @		\$1.55 per foot =	\$558.00						
6" dia. perforated drain pipe coupler & installation -	2	@		\$3.45 each =	\$6.90						
Geotextile fabric & installation - groundwater drain & road subgrade -	700	sq. yds. @		\$0.90 per sq. yd. =	\$630.00						
Geotextile fabric & installation - road subgrade stabilization -	1390	sq. yds. @		\$0.90 per sq. yd. =	\$1,251.00						
Remove 7 old culverts from State Land -					\$546.50						
Grade and shape road - outslope	37.60	stations @		\$9.75 per station =	\$366.60						
Grade and shape road - ditch	149.50	stations @		\$14.20 per station =	\$2,122.90						
Roll subgrade w/ vibratory roller prior to rocking -	187.10	stations @		\$11.00 per station =	\$2,058.10						
Construct a 10' wide x 10' long x 4' deep culvert catch basin @ Sta. 81+00 & 81+35 -	3.00	hours @		\$270.00 per hour =	\$810.00						
Construct a 20' wide x 20' long x 4' deep culvert catch basin @ Sta. 46+00 -	1.50	hours @		\$270.00 per hour =	\$405.00						
Remove buried logs @ stations: 46+00, 77+45, 122+50, & 161+10 -	4.00	hours @		\$130.00 per hour =	\$520.00						
Remove large stumps -	4.00	hours @		\$130.00 per hour =	\$520.00						
Grass seed and fertilize -	5.65	acres @		\$220.00 per acre =	\$1,243.00						
Mulching -	5.65	acres @		\$600.00 per acre =	\$3,390.00						
		TOTAL SPECIAL PROJECTS			\$18,555.50						
GRAND TOTAL					\$165,581.08						

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Powderhouse</u>		Road:	<u>C to D</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Road Closure	<u>4+30</u> stations <u>0.08</u> miles
EXCAVATION -				
Rip subgrade to depth of 1 foot	4.30	sta. @	\$100.00	per sta. = <u>\$430.00</u>
				TOTAL EXCAVATION \$430.00
SPECIAL PROJECTS				
Install waterbars -	4	@	\$25.00	each \$100.00
Block access with woody debris and stumps -	1.50	hours @	\$130.00	per hour \$195.00
Grass seed and fertilize -	0.20	acres @	\$220.00	per acre \$44.00
Mulching -	0.20	acres @	\$600.00	per acre \$120.00
				TOTAL SPECIAL PROJECTS \$459.00
				GRAND TOTAL \$889.00

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Powderhouse</u>		Road: <u>E to F</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement - <u>10+70</u> stations <u>0.20</u> miles
CLEARING AND GRUBBING - Scattering	0.98 acres @	\$815.00 per acre =	<u>\$798.70</u>
		TOTAL CLEARING AND GRUBBING	\$798.70
EXCAVATION -			
Road Earthwork - 0+00 to 2+00	2.00 sta. @	\$65.00 per sta. =	\$130.00
Road Earthwork - 2+00 to 3+75	1.75 sta. @	\$148.00 per sta. =	\$259.00
Road Earthwork - 3+75 to 9+00	5.25 sta. @	\$65.00 per sta. =	\$341.25
Road Earthwork - 9+00 to 10+70	1.70 sta. @	\$148.00 per sta. =	<u>\$251.60</u>
		TOTAL EXCAVATION	\$981.85
SURFACING- 0+00 to	2+00 114 cy. of Jaw-Run	@ \$8.85 per c.y.=	<u>\$1,009.30</u>
		TOTAL SURFACING	\$1,009.30
SPECIAL PROJECTS			
Construct turnout & turnaround -	0.50 hours @	\$130.00 per hour	\$65.00
Install waterbars -	4 @	\$25.00 each	\$100.00
Grade and shape road -	10.70 stations @	\$9.75 per station	\$104.33
Roll subgrade w/ vibratory -	10.70 stations @	\$11.00 per station	\$117.70
Grass seed and fertilize -	0.87 acres @	\$220.00 per acre	\$191.40
Mulching -	0.87 acres @	\$600.00 per acre	\$522.00
		TOTAL SPECIAL PROJECTS	\$1,100.43
GRAND TOTAL			\$3,890.27

SUMMARY OF CONSTRUCTION COST

Sale:	Powderhouse		Road: G to H	
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement -	<u>12+05</u> stations <u>0.23</u> miles
CLEARING AND GRUBBING -				
Scattering		1.11 acres @	\$815.00 per acre =	<u>\$904.65</u>
			TOTAL CLEARING AND GRUBBING	\$904.65
EXCAVATION -				
Road Earthwork - 0+00 to 6+20		6.20 sta. @	\$100.00 per sta. =	\$620.00
Road Earthwork - 6+20 to 12+05		5.85 sta. @	\$65.00 per sta. =	<u>\$380.25</u>
			TOTAL EXCAVATION	\$1,000.25
SURFACING-				
0+00 to 2+00	114 cy. of	Jaw-Run	@	\$8.92 per c.y.=
				<u>\$1,017.28</u>
			TOTAL SURFACING	\$1,017.28
SPECIAL PROJECTS				
Construct turnout & turnaround -		0.50 hours @	\$130.00 per hour	\$65.00
Install waterbars -		5 @	\$25.00 each	\$125.00
Grade and shape road -		12.05 stations @	\$9.75 per station	\$117.49
Roll subgrade w/ vibratory roller prior to rocking -		12.05 stations @	\$11.00 per station	\$132.55
Grass seed and fertilize -		1.01 acres @	\$220.00 per acre	\$222.20
Mulching -		1.01 acres @	\$600.00 per acre	\$606.00
			TOTAL SPECIAL PROJECTS	\$1,268.24
 GRAND TOTAL				\$4,190.42

SUMMARY OF CONSTRUCTION COST

Sale: Powderhouse

Road: Stockpile at 2.75 mile on Miami Forest Road

Construction - 0 stations
0.00 miles

Improvement - 0 stations
0.00 miles

CLEARING AND GRUBBING -
Sidecast - stockpile location

0.15 acres @

\$540.00 per acre = \$81.00
TOTAL CLEARING AND GRUBBING

\$81.00

EXCAVATION -

Level stockpile location - D-8 cat

1 hrs. @

\$130.00 per hr. = \$130.00
TOTAL EXCAVATION

\$130.00

Stockpile Rock-

Miami Forest Rd MP 2.75 1,998 cy. of 2"-0" @

\$7.32 per c.y.= \$14,630.98
TOTAL SURFACING

\$14,630.98

SPECIAL PROJECTS

\$0.00

TOTAL SPECIAL PROJECTS

\$0.00

GRAND TOTAL

\$14,841.98

MOVE-IN CALCULATIONS

Sale: Powderhouse

LOWBOY HAUL (Round Trip)		
DISTANCE	ROADWAY	AVE SPEED (MPH)
33.2	Highway	37
5.6	Main Lines (Off Road)	15
0.0	Pulling Steep Grades	4

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Drill & Compressor	\$227.33		\$46.00	0.00	0.00	6.47	\$297.62	\$524.95
0	Brush Cutter	\$0.00		\$4.00	0.00	0.00	0	\$0.00	\$0.00
0	Graders	\$0.00		\$3.65	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Small)	\$0.00	1	\$3.55	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00	1	\$9.00	0.00	0.00	0	\$0.00	\$0.00
0	Rollers & Compactors	\$0.00		\$5.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Small)	\$0.00		\$22.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0.00	0.00	0	\$0.00	\$0.00
1	Excavators (Large)	\$339.65	1	\$44.80	0.00	8.04	8.04	\$360.19	\$699.84
0	Rubber Tired Backhoes/Skidlers	\$0.00		\$3.00	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D6)	\$0.00	2	\$7.10	0.00	0.00	0	\$0.00	\$0.00
1	Tractors (D7)	\$321.69	2	\$11.30	0.00	5.90	5.9	\$66.67	\$388.36
1	Tractor (D8)	\$336.30	2	\$15.10	0.00	8.04	8.04	\$121.40	\$457.71
5	Dump Truck (10 cy +)	\$362.13		\$2.85	0.00	7.09	7.09	\$101.03	\$463.16
0	Dump Truck (Off Hiway)	\$0.00	1	\$4.75	0.00	0.00	0	\$0.00	\$0.00
0	Water Truck (1500 Gal)	\$0.00		\$2.85	0.00	0.00	0	\$0.00	\$0.00
0	Water Truck (2500 Gal)	\$0.00		\$2.85	0.00	0.00	0	\$0.00	\$0.00
0	Jaw	\$1,066.00							
0	2-Stage Crusher	\$1,597.00							
0	3-Stage Crusher	\$2,489.00							

TOTAL MOVE-IN COSTS:	\$2,534.03
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ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Sale:	<u>Powderhouse</u>		Sta. 44+60 on A to B
Pit:	<u>PH #1</u>	Location:	<u>SW1/4 SW1/4 Sec. 28, T2N, R9W, W.M.</u>
Rock:	<u>Jaw-run and 2"-0"</u>	Road & Riprap:	<u>10942 c.y.</u>
Swell:	<u>1.40</u>	Stockpile:	<u>1998 c.y.</u>
Shrinkage:	<u>1.16</u>	Total Truck Loads:	<u>12940 c.y.</u>
Drill Pct.:	<u>100%</u>	In Place Total:	<u>9243 c.y.</u>

Pit Development, Access Road Construction & Cleanup including Clearing and grubbing, end-hauling overburden and other waste, placing and compacting overburden and waste in Waste Area. \$3,522.15

Grass Seed , fertilize and mulch waste area and pit access road.				\$164.00
Drill & Shoot:	\$2.10 /cu.yd.	x	9243 cu.yds.	= \$19,409.72
Push Rock:	\$0.60 /cu.yd.	x	12,940 cu.yds.	= \$7,763.89
Load Crusher:	\$0.60 /cu.yd.	x	12940 cu.yds.	= \$7,763.89
Crushing: 2"-0"	\$2.30 /cu.yd.	x	3,847 cu.yds.	= \$8,847.68
Crushing: Jaw-Run	\$1.85 /cu.yd.	x	8,825 cu.yds.	= \$16,326.25
Load Dump Truck: Crushed Rock	\$0.60 /cu.yd.	x	12672 cu.yds.	= \$7,603.09
Load Dump Truck: Riprap	\$1.40 /cu.yd.	x	268 cu.yds.	= \$375.20
Oversize Reduction:	\$4.00 /cu.yd.	x	462 cu.yds.	= \$1,848.55
Gradation Change				\$210.00
			Subtotal	\$73,834.41

Move In and set up Crusher	1	@	\$2,524.26	=	\$2,524.26
Move In and set up Drill and Compressor	1	@	\$244.08	=	\$244.08
Move in Roller and Compactor	1	@	\$244.08	=	\$244.08
Move in Grader	1	@	\$125.75	=	\$125.75
Move in D-8	1	@	\$385.99	=	\$385.99
Move in Loader	1	@	\$347.97	=	\$347.97
Move in Excavator	1	@	\$396.58	=	\$396.58
Move in Trucks	5	@	\$78.81	=	\$394.05
Move in Water Truck	1	@	\$92.64	=	\$92.64
				Subtotal	\$4,755.40

TOTAL PRODUCTION COSTS \$78,589.81

Base Cost= \$6.07 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B 0+00 to 12+15 Jaw-Run	0.70	1.30	6.07	8.07	730	5,893.65
A to B 12+15 to 15+75 Jaw-Run	0.70	1.30	6.07	8.07	385	3,108.29
A to B 15+75 to 153+10 Jaw-Run	0.92	1.30	6.07	8.29	7482	62,051.87
A to B 0+00 to 153+10 2"-0"	0.92	1.30	6.07	8.29	1849	15,334.66
A to B Energy Dissipator Sta. 13+40 to 14+80	2.09	1.40	6.07	9.56	218	2,084.84
A to B Energy Dissipator Sta. 51+85	1.21	1.40	6.07	8.68	20	173.67
A to B Energy Dissipator Sta 110+15	2.86	1.40	6.07	10.33	30	310.00
E to F Jaw-Run	1.48	1.30	6.07	8.85	114	1,009.30
G to H Jaw-Run	1.55	1.30	6.07	8.92	114	1,017.28
				Total C.Y.	10942	Sub Total 90,983.56
Stockpile	0.65	0.60	6.07	7.32	1998	14,630.98
				Total C.Y.	1998	Sub Total 14,630.98

TOTAL ROCKING COSTS 105,614.54



OREGON DEPARTMENT OF FORESTRY

CRUISE REPORT

Powderhouse

1. Type of Sale

Partial cut– Recovery/Cash

2. Legal Description

Portions of Sections 28 and 33, T2N, R9W, WM, Tillamook County, Oregon.

3. Sale Acreage

	ACRES	
<u>Sale</u>	<u>Total</u>	<u>Net</u>
177	163	163

Sale Acres: Area within the Timber Sale Boundary signs.

Total Acres: Sale acres, plus green tree retention areas outside the timber sale boundary; less roads and riparian areas classified as Special Stewardship in LMCS inside the sale boundary. For accomplishment reporting – clearcut (regeneration) harvest.

Net acres: Used for calculating the advertised volume.

Clearcut - Sale acres, less green tree retention, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Partial Cut - Sale acres minus areas of low stocking, hardwoods, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

4. Cruising Procedures

A. **Cruise Method**

A total of 47 variable radius plots were taken across the sale area. Plots were spaced 400' apart on a grid pattern. All conifers 8 inches DBH and greater and all hardwoods 10 inches DBH and greater were recorded on all plots.

Diameters and species were recorded and all trees were graded and measured for merchantable height and form factor.

B. **Plot size**

A basal area factor of 40 was used. The point of observation was at 4.5 feet.

C. **Grading System**

All trees were graded according to Columbia River Log Scaling and Grading Rules. Conifer trees were measured to a 5-inch top and hardwood trees were measured to an 8-inch top, both favoring 40-foot lengths. All heights were measured to the nearest foot. All diameters were measured at a height of 4.5 feet to the nearest 1-inch. Conifers less than 20 board feet and hardwoods less than 30 board feet were not recorded.

2/03/04

5. Computation Procedure

Sale volume was computed using the Atterbury SuperA.C.E.98 program. Residual and surplus trees were designated on each cruise plot to develop a stand table, which was used to expand the volume for the sale.

6. Hidden Defect and Breakage

A 5% deduction was applied to the volume to account for the defect and breakage.

7. Timber Description

This area was burned in the 1933 Tillamook Fire and portions of the sale area were also burned in the 1945 Wilson River Fire. The timber on sale area is 40-45 years old. The area is a mixed stand of hemlock, Douglas-fir and other conifers, and alder from natural regeneration. Conifers dominate the upper slopes with alder in the draws and flats. The current stand condition is closed-single canopy.

8. Cruiser Names/Dates

Wells / Bond / Lieske / Everingham, December 2003.

9. Revenue Distribution

FDF: 100%

Tax Code: 56 - 100%

Deed Numbers: 15 - 90%

35 - 5%

113 - 5%

0% - Rehabilitation Obligated

10. Attachments

Stand Tables

Volume Summary

Logging Plan

TC		PSTNDSUM		Stand Table Summary										Page 1	
														Date: 1/22/2004	
T02N R09W S33 TyAREA		1.00		Project POWDER										Time: 10:17:22AM	
				Acres 1.00										Grown Year:	
S Spc T	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
HX	8	7	87	42	17.067	5.96	17.07	5.9	25.7	3.40	100	439	3	1	0
HX	9	8	88	38	15.456	6.81	15.46	7.4	25.0	3.78	114	386	4	1	0
HX	10	11	88	62	17.106	9.36	17.11	13.0	48.3	7.24	223	826	7	2	1
HX	11	9	88	72	11.756	7.66	13.05	16.4	57.0	6.85	214	744	7	2	1
HX	12	9	88	73	9.655	7.66	13.99	16.7	50.8	7.37	234	711	7	2	1
HX	13	9	87	79	8.324	7.66	13.86	18.7	57.3	8.06	259	795	8	3	1
HX	14	6	87	72	4.860	5.11	7.28	21.4	65.4	4.81	156	476	5	2	0
HX	15	11	88	80	7.689	9.36	13.99	23.2	75.0	9.91	325	1,049	10	3	1
HX	16	11	88	87	6.692	9.36	12.75	27.5	95.8	10.60	350	1,221	11	4	1
HX	17	8	88	87	4.295	6.81	9.11	28.4	97.1	7.76	258	885	8	3	1
HX	18	7	87	89	3.421	5.96	7.30	29.3	93.5	6.39	214	682	6	2	1
HX	19	2	88	86	.864	1.70	1.73	27.7	95.0	1.42	48	164	1	0	0
HX	21	2	87	87	.708	1.70	1.06	54.3	176.7	1.69	58	188	2	1	0
HX	25	1	88	86	.248	.85	.50	53.5	195.0	.77	27	97	1	0	0
HX	26	2	89	92	.469	1.70	.94	73.3	270.2	1.98	69	253	2	1	0
TAKE HX	Totals	103	88	64	108.611	87.66	145.19	18.2	61.4	82.02	2,648	8,916	82	26	9
WH	9	3	88	44	5.779	2.55	5.78	6.3	26.7	1.21	37	154	1	0	0
WH	10	4	88	41	6.410	3.40	6.41	9.3	30.3	1.94	60	194	2	1	0
WH	11	1	88	54	1.290	.85	1.29	15.0	40.0	.62	19	52	1	0	0
WH	13	1	88	93	.896	.85	1.79	18.5	60.0	1.03	33	107	1	0	0
WH	14	6	87	75	4.777	5.11	7.17	22.7	73.3	5.00	162	525	5	2	1
WH	15	7	87	84	4.858	5.96	9.02	23.9	82.2	6.58	216	742	7	2	1
WH	16	4	88	92	2.470	3.40	4.30	29.5	103.0	3.84	127	443	4	1	0
WH	17	4	87	89	2.160	3.40	4.32	29.4	100.0	3.81	127	432	4	1	0
WH	18	6	88	91	2.907	5.11	5.81	35.4	116.5	6.13	206	677	6	2	1
WH	19	7	87	85	3.065	5.96	6.11	34.4	111.8	6.24	210	684	6	2	1
WH	20	6	88	92	2.337	5.11	4.67	43.2	140.8	5.95	202	658	6	2	1
WH	21	6	87	93	2.113	5.11	4.58	43.3	144.5	5.82	198	662	6	2	1
WH	22	4	88	81	1.290	3.40	2.58	44.9	145.0	3.38	116	374	3	1	0
WH	23	1	88	87	.300	.85	.60	41.5	135.0	.73	25	81	1	0	0
WH	28	2	88	86	.405	1.70	1.01	61.7	232.0	1.79	62	234	2	1	0
WH	29	3	88	91	.561	2.55	1.31	75.2	281.2	2.81	98	367	3	1	0
SAVE WH	Totals	65	88	72	41.616	55.32	66.75	28.4	95.7	56.87	1,897	6,387	57	19	6
RA	9	3	88	41	6.013	2.55	6.01								
RA	10	4	86	55	6.579	3.40	6.58	6.5	24.7		43	163		0	0
RA	11	7	82	81	9.027	5.96	9.03	16.8	71.4		152	645		2	1
RA	12	5	83	72	5.418	4.26	6.50	15.4	56.7		100	368		1	0
RA	13	12	83	80	11.080	10.21	11.08	22.7	87.5		251	969		3	1
RA	14	12	83	79	9.577	10.21	10.37	25.3	88.5		262	918		3	1
RA	15	10	83	85	6.935	8.51	7.63	29.9	107.3		228	818		2	1
RA	16	15	83	78	9.135	12.77	10.35	31.5	104.7		326	1,084		3	1
RA	17	4	82	76	2.160	3.40	2.16	41.4	135.0		89	292		1	0
RA	19	2	83	61	.864	1.70	1.73	23.5	82.5		41	143		0	0
RA	20	2	83	74	.780	1.70	.78	56.8	180.0		44	140		0	0
RA	21	1	82	85	.364	.85	.73	39.6	140.0		29	102		0	0
RA	22	1	82	26	.322	.85	.32	33.9	50.0		11	16		0	0
RA	23	1	83	80	.295	.85	.59	49.2	165.0		29	97		0	0
TAKE RA	Totals	79	84	73	68.549	67.23	73.87	21.7	77.9		1,606	5,756		16	6
DF	8	1	83	48	2.438	.85	2.44	4.8	30.0	.40	12	73		0	0
DF	10	1	82	33	1.500	.85	1.50	6.6	20.0	.32	10	30		0	0
DF	11	2	82	60	2.534	1.70	2.53	13.5	40.0	1.09	34	101		1	0

TC		PSINDSUM		Stand Table Summary							Page		2			
											Date:		1/22/2004			
T02N R09W S33 TyAREA				1.00		Project POWDER				Time:		10:17:22AM				
						Acres 1.00				Grown Year:						
S Spc	T	Sample DBH	FF Trees	Av 16' Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
DF		13	2	83	75	1.847	1.70	3.69	11.7	40.0	1.35	43	148	1	0	0
DF		14	2	82	80	1.592	1.70	3.18	16.1	55.0	1.58	51	175	2	1	0
DF		15	3	83	89	2.099	2.55	4.20	19.3	66.7	2.47	81	280	2	1	0
DF		16	2	83	79	1.243	1.70	1.85	26.8	86.5	1.50	50	160	2	0	0
DF		18	4	83	94	1.926	3.40	3.85	30.4	103.8	3.49	117	400	3	1	0
DF		19	5	83	80	2.170	4.26	3.46	33.9	117.5	3.48	117	406	3	1	0
DF		20	4	83	98	1.560	3.40	3.51	34.1	111.1	3.53	120	390	4	1	0
DF		21	3	83	100	1.061	2.55	2.48	37.6	130.0	2.73	93	322	3	1	0
DF		22	5	83	96	1.612	4.26	3.55	42.1	140.9	4.37	149	500	4	1	0
DF		23	3	84	109	.893	2.55	2.38	40.4	165.0	2.79	96	392	3	1	0
DF		24	4	83	114	1.084	3.40	2.98	45.2	177.3	3.91	135	528	4	1	1
DF		26	1	83	99	.234	.85	.47	51.1	205.0	.69	24	96	1	0	0
DF		29	1	83	97	.187	.85	.37	83.2	295.0	.89	31	110	1	0	0
DF	Totals		43	83	79	23.981	36.60	42.44	27.4	96.9	34.60	1,164	4,112	35	12	4
DX		9	1	82	31	1.970	.85	1.97	4.9	20.0	.32	10	39	0	0	0
DX		10	2	83	60	3.121	1.70	3.12	10.7	35.0	1.09	33	109	1	0	0
DX		11	2	83	39	2.556	1.70	2.56	9.4	30.0	.76	24	77	1	0	0
DX		14	1	82	104	.796	.85	1.59	18.1	60.0	.89	29	96	1	0	0
DX		15	2	83	102	1.387	1.70	2.77	21.4	80.0	1.81	59	222	2	1	0
DX		16	2	83	54	1.259	1.70	1.26	26.5	79.7	1.01	33	100	1	0	0
DX		17	2	83	97	1.099	1.70	2.20	25.9	92.5	1.71	57	203	2	1	0
DX		18	1	82	58	.461	.85	.46	42.3	90.0	.58	20	41	1	0	0
DX		21	1	87	88	.347	.85	.69	38.4	130.0	.78	27	90	1	0	0
DX	Totals		14	83	62	12.996	11.91	16.63	17.5	58.8	8.96	292	978	9	3	1
SS		11	2	82	40	2.579	1.70	2.58	12.5	25.0		32	64		0	0
SS		13	1	82	46	.983	.85	.98	16.0	40.0		16	39		0	0
SS		14	2	82	30	1.592	1.70	1.59	16.0	25.0		25	40		0	0
SS		17	1	82	83	.540	.85	1.08	27.5	85.0		30	92		0	0
SS		19	1	81	86	.432	.85	.86	36.0	105.0		31	91		0	0
SS		22	1	80	86	.322	.85	.64	48.5	135.0		31	87		0	0
SS	Totals		8	82	47	6.449	6.81	7.74	21.4	53.4		166	413		2	0
OH		12	1	83	48	1.084	.85	1.08	15.0	40.0		16	43		0	0
OH	Totals		1	83	48	1.084	.85	1.08	15.0	40.0		16	43		0	0
Totals			313	86	69	263.286	266.38	353.70	22.0	75.2	182.45	7,789	26,606	182	78	27

Leave Conifer = 98.73 ft² basal area

Leave TPA = 72

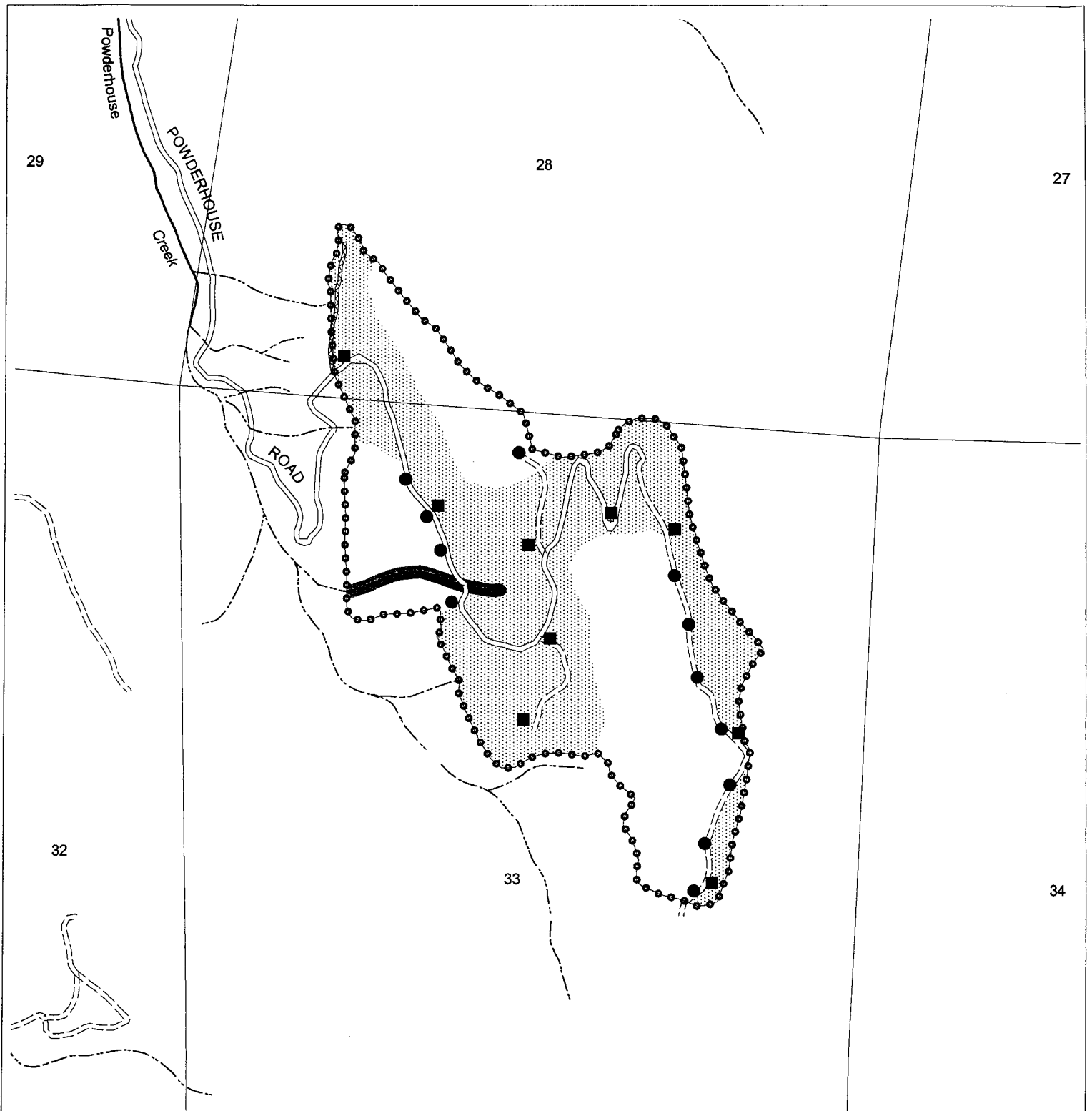


"STEWARDSHIP IN FORESTRY"

POWDERHOUSE

Volume Summary

TOTAL SALE VOLUME						
					Acres:	163
Species	Gross MBF/Acre	Gross Volume MBF	Defect & Breakage	Net Vol MBF	Net MBF/Acre	
Douglas-fir	0.98	160	5%	152	0.93	
W. Hemlock	8.91	1452	5%	1379	8.46	
Alder	5.76	939	5%	892	5.47	
TOTAL		2551		2423	14.86	



- Tractor landing
- Cable landing
- ▲ Domestic water supply
- ⊗ Blocked
- Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- Buffer
- Non-required thinning
- ⊂ Green tree retention area
- Setting boundary
- Area boundary
- Sale boundary
- Ownership boundary
- Type-F stream
- Type-N stream
- ==== Surfaced road
- ==== Unsurfaced road
- State highway
- County road
- ②- Non-project road
- Swing road
- Abandoned road
- ⊃ OHV trail
- Non-motorized trail

Type of Operation	Acres Sale	Acres Net
Partial Cut	177	163

LOGGING PLAN
 Timber Sale Contract No. 341-04-76
 Powderhouse
 Portions of Sections 28 & 33, T2N, R9W, W. M.
 Tillamook County, Oregon



OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN
FOR PROJECT WORK ONLY

SALE NAME: Powderhouse

PROTECTED WATERS Miami River, Powderhouse Creek and Unnamed Tributaries of Powderhouse Creek

LOCATIONS: Portions of the following: Sections 28, 29, 33 T2N, R9W, W.M. Tillamook County, Oregon.

ACTIVITIES: Work in Type F streams: Culvert removals and installations, and riprap placement.
Work with in 100 feet of Type F stream: Road reconstruction, road grading, road rocking, groundwater drain construction, sediment catch basin construction, riprap placement, and culvert removals and installations.

PROTECTION MEASURES:

- No in stream activity will be conducted prior to July 1st or after September 15th without prior approval.
- All necessary measures will be taken to prevent sediment from entering "live" streams, including but not limited to:
 - Machine activity in the stream and disturbance of existing vegetation will be kept to a minimum.
 - Work will be performed only during dry weather periods and low water stream flows.
 - Operations will cease when rain or periods of high stream flows result in a visual increase in turbidity.
 - Stream water will be diverted around the work areas when water quality is likely to be jeopardized.
 - Ditchouts and culvert leadoff ditches will be constructed to direct water with sediment away from streams.
 - Sediment catch basins will be constructed to remove sediment from ditchline water.
 - Fill material will be placed and compacted in 8 inch lifts. Fill slopes will be constructed at a 1 ½:1 fill width to height ratio.
 - Waste material will be end-hauled to stable locations marked in the field.
 - Riprap rock will be placed by a track mount excavator to minimize erosion.
 - Disturbance of existing vegetation will be kept to a minimum.
 - All disturbed soil will be grass seeded, fertilized and mulched to minimize erosion.

PREPARED BY: David L. Stone, Road Specialist
March 9, 2004

X:\StateForests\Engineers\Timber Sales\Powderhouse\Documents\Written Plan #1.doc