



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Music Creek
Sale 341-15-31

District: Astoria

Date: July 30, 2014

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,712,492.47	\$6,246.14	\$2,718,738.61
		Project Work:	\$(173,945.00)
		Advertised Value:	\$2,544,793.61



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timber description

Location: Portions of Sections 10, 14, and 15, T6N, R7W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	27	0	97
Western Hemlock / Fir	18	0	95
Alder (Red)	19	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	3,646	677	24	0	4,347
Western Hemlock / Fir	1,784	999	174	0	2,957
Alder (Red)	0	0	0	17	17
Total	5,430	1,676	198	17	7,321



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comments: Pond Values Used: 2nd Quarter Calendar Year 2014.

Expected Log Markets: Mist, Clatskanie, Tillamook, Forest Grove, Longview (WA), Chehalis (WA), Elma (WA), Warrenton and Garibaldi.

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost:
 $\$849.73/\text{MBF} = \$1,050/\text{MBF} - \$200.27/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk to be added):

100% Brand and Paint: $\$1/\text{MBF} \times 7,533/\text{MBF} = \$7,533$

Log Loader Slash & Landing Piling (includes Move-In and Pile Materials): (see attached appraisal) = \$19,146

Line Pull in Areas 1 & 3 = $\$20/\text{MBF} \times 189 \text{ MBF} = \$3,780$

TOTAL Other Costs (with Profit & Risk to be added) = \$30,459

Other Costs (No Profit & Risk added):

Machine Washing for Noxious Weed Compliance = \$3,000

TOTAL Other Costs (No Profit & Risk added) = \$3,000



"STEWARDSHIP IN FORESTRY"

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Music Creek
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logging conditions

combination#: 1 Douglas - Fir 55.00%
Western Hemlock / Fir 55.00%
Alder (Red) 55.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Manual Delimbing

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 **bd. ft / load:** 4,500
cost / mbf: \$69.57

machines: Shovel Logger

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:** Stroke Delimber

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 **bd. ft / load:** 4,000
cost / mbf: \$104.50

machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Medium)



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Music Creek Sale 341-15-31

District: Astoria

Date: July 30, 2014

logging costs

Operating Seasons:	2.00	Profit Risk:	12.00%
Project Costs:	\$173,945.00	Other Costs (P/R):	\$30,459.00
Slash Disposal:	\$0.00	Other Costs:	\$3,000.00

Miles of Road

Road Maintenance: \$3.52

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	4.5
Western Hemlock / Fir	\$0.00	2.0	3.3
Alder (Red)	\$0.00	2.0	3.0



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Music Creek
Sale 341-15-31

District: Astoria

Date: July 30, 2014

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$85.29	\$3.63	\$1.20	\$79.70	\$4.16	\$20.88	\$0.00	\$5.00	\$0.41	\$200.27
Western Hemlock / Fir									
\$85.29	\$3.70	\$1.20	\$112.50	\$4.16	\$24.82	\$0.00	\$5.00	\$0.41	\$237.08
Alder (Red)									
\$85.29	\$3.70	\$1.20	\$121.87	\$4.16	\$25.95	\$0.00	\$5.00	\$0.41	\$247.58

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$632.55	\$432.28	\$0.00
Western Hemlock / Fir	\$0.00	\$518.91	\$281.83	\$0.00
Alder (Red)	\$0.00	\$615.00	\$367.42	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Music Creek
Sale 341-15-31

District: Astoria

Date: July 30, 2014

summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	4,347	\$432.28	\$1,879,121.16
Western Hemlock / Fir	2,957	\$281.83	\$833,371.31
Alder (Red)	17	\$367.42	\$6,246.14

Gross Timber Sale Value

Recovery: \$2,718,738.61

Prepared by: John Choate

Phone: 503-325-5451

Sale Number: 341-15-29
Sale Name: Klaskanine Ridge Combination
Date: 04/21/2014

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area	
1	MC	B	21.0	32	\$129.00	\$4,063.50	
2	MC	B	17.0	26	\$129.00	\$3,289.50	
3	MC	B	16.0	24	\$129.00	\$3,096.00	
					In-unit Piling	Sub Total =	\$10,449.00
Sale Area	Number of Landings to be Piled	Cost/Landing Pile	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area	
1	3	\$516.00	\$1,548.00	94.5	\$5.00	\$472.50	
2	5	\$516.00	\$2,580.00	76.5	\$5.00	\$382.50	
3	4	\$516.00	\$2,064.00	72	\$5.00	\$360.00	
*Cost includes separating firewood					Materials	Sub Total =	\$1,215.00
					Landing Piling	Sub Total =	\$6,192.00
Move-In Allowance	Number of Move-In's	Total Move-In Allowance			Move-In	Sub Total =	\$1,290.00
\$1,290.00	1	\$1,290.00					
Grand Total =							\$19,146.00

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Music Creek

ROAD CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Unsurfaced	1A-1B	4.70	\$2,408
Surfaced	2A-2B, 3A-3B	47.85	\$52,066
	TOTALS	52.55	\$54,474

ROAD IMPROVEMENT:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	11-12,13-14	188.05	\$69,005
	TOTALS	188.05	\$69,005

SPECIAL PROJECTS:

	<u>Description</u>	<u>Cost</u>
No 3	Trailover Quarry Development and Pit-Run	\$39,755
	Project Road Maintenance	\$2,082.00
	TOTAL	\$41,837

MOVE IN:

	<u>Equipment</u>	<u>Cost</u>
	Dump Trucks (12cy x 4	\$652.00
	Dump Trucks (20cy x 2)	\$382.00
	Rubber tired skidder	\$717.00
	Dozer (D6)	\$778.00
	Dozer (D8)	\$1,406.00
	F E Loader (C966)	\$778.00
	Grader (12G)	\$737.00
	Vibratory Roller	\$778.00
	Water Truck (2,500 Galloon)	\$190.00
	Excavator (C330)	\$805.00
	Excavator (C315)	\$1,406.00
	TOTAL	\$8,629.00

GRAND TOTAL **\$173,945.00**

Compiled By: John Choate/Kraig Kirkpatrick

Date: 06/04/2014

SURFACING				Stations/ amount		x	Rate/ sta/amt		Cost
Subgrade prep:				Description					
				Grade, Shape and Ditch 16'				\$24.83	\$1,304.82
				Subgrade Compaction			x	\$20.19	\$1,060.98

ROAD SEGMENT		1A to 1B (Unsurfaced)		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B (Unsurfaced)		0+00 to 4+70				
				Volume (CY) per	Number of					
Base Rock	6"-0" Pit-run	0+00 to 0+50	10	Station	63	Stations	0.50	32	\$5.62	\$177
Junction Rock	1 1/2"-0" Crushed	0+00	3	Junction	22	Junctions	1	22	\$4.59	\$101
Total Rock for Road Segment:				1A to 1B (Unsurfaced)				54		

\$278

ROAD SEGMENT		2A to 2B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A to 2B		00+00 to 21+45				
				Volume (CY) per	Number of					
Base Rock	6"-0" Pit-run	0+00 to 21+45	10	Station	63	Stations	21.45	1,351	\$5.62	\$7,595
Junction Rock	1 1/2"-0" Crushed	0+00	3	Junction	22	Junctions	1	22	\$4.59	\$101
Turnouts	6"-0" Pit-run	3+55	10	TO	28	TO's	1	28	\$5.62	\$157
Turnarounds	6"-0" Pit-run	8+50, 16+50	10	TA	17	TA's	2	34	\$5.62	\$191
Landings	6"-0" Pit-run	10+65, 13+85, 21+45	N/A	Landing	100	Landings	3	300	\$5.62	\$1,686
Traction Rock	1 1/2"-0" Crushed	17+55	4	Station	25	Stations	3	75	\$4.59	\$344
Total Rock for Road Segment:				2A to 2B				1,810		

\$9,730

ROAD SEGMENT		3A to 3B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A to 3B		0+00 to 26+40				
				Volume (CY) per	Number of					
Base Rock	6"-0" Pit-run	0+00 to 26+40	10	Station	63	Stations	26.40	1,663	\$5.62	\$9,347
Junction Rock	1 1/2"-0" Crushed	0+00	3	Junction	22	Junctions	1	22	\$4.59	\$101
Turnouts	6"-0" Pit-run	7+50, 11+90, 18+40	10	TO	28	TO's	3	84	\$5.62	\$472
Turnarounds	6"-0" Pit-run	14+00, 20+90	10	TA	17	TA's	2	34	\$5.62	\$191
Landings	6"-0" Pit-run	22+50, 26+40	N/A	Landing	80	Landings	2	160	\$5.62	\$899
Total Rock for Road Segment:				3A to 3B				1,963		

\$11,011

Processing:				Description		No. sta	Rate/sta	Cost	
				Pit Run Rock Compaction (D6)		48.35	\$31.54	\$1,525	
				Water, Process & Compact (Crushed Rock)		3.00	\$56.48	\$169	
				6"-0"pr	4"-0"	1 1/2"-0"	3/4"-0"	Total	
				3,686	0	141	0	3,827	3,827

\$25,079

SUB TOTAL FOR SURFACING

SPECIAL PROJECTS				Description		\$/CY	Cost
				Rip, Develop Pit-run		\$ 2.60	\$ 9,583.73

SUB TOTAL FOR SPECIAL PROJECTS

\$9,584

\$34,662

\$19,812

GRAND TOTAL

\$54,474

Compiled By: John Choate

Date: 05/30/2014

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Music Creek
 ROAD: I1-I2 (139.9), I3-I4 (48.15)
 POINTS:

NEW CONSTRUCTION: STATIONS
 IMPROVEMENT: 188.05 STATIONS
 MILES
 3.56 MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

EXCAVATION

	Material	Cy/amount	x	Rate	=	Cost
I1 to I2	Station 86+55	See Cost Sheet	x		=	\$5,384.50
	Station 124+10	See Cost Sheet	x		=	\$2,466.00
	Station 132+60	See Cost Sheet	x		=	\$2,438.80
	Station 137.20	See Cost Sheet	x		=	\$1,619.00
	Installing ditch filters w/315 \$/hr	10	x	\$101.00	=	\$1,010.00
I3 - I4	Construct Turnaround w/315 \$/hr	4	x	\$101.00	=	\$404.00
			x		=	
			x		=	
			x		=	
			x		=	

SUB TOTAL FOR EXCAVATION

\$13,322

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I1- I2									
24+05	18" CPP	30	\$19.53	\$585.90					
39+25	18" CPP	30	\$19.53	\$585.90					
45+40	18" CPP	30	\$19.53	\$585.90					
56+85	18" CPP	30	\$19.53	\$585.90					
67+30	18" CPP	30	\$19.53	\$585.90					
86+55	42" ACSP	75	\$43.32	\$3,249.00					
87+95	24" CPP	50	\$27.04	\$1,352.00					
94+40	18" CPP	30	\$19.53	\$585.90					
116+65	18" CPP	30	\$19.53	\$585.90					
124+10	30" ACSP	50	\$32.93	\$1,646.50					
132+10	18" CPP	40	\$26.17	\$1,046.80					
132+60	24" ACSP	60	\$26.17	\$1,570.20					
134+35	18" CPP	30	\$19.53	\$585.90					
137+20	24" ACSP	45	\$26.17	\$1,177.65					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:		9	\$20.00	\$180.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$14,909

Subtotal of Clearing, Exc., Culv.

\$28,232

Final Road Maintenance Cost Summary

Sale: Music Creek
Date: 23-May-14
By: J. Choate

MBF: 7,321
\$/MBF: \$3.52

Type	Equipment/Rationale	Move In	Times	Hours	Rate	Cost
Progressive Operations 1st Entry	Grader 14G	\$778	1	16	\$100	\$2,378
	Dump Truck 12CY x 2	\$163	2	8	\$79	\$1,590
	FE Loader C966	\$778	1	8	\$83	\$1,442
Progressive Operations 2nd Entry	Grader 14G	\$778	1	16	\$100	\$2,378
	Dump Truck 12CY x 2	\$163	2	8	\$79	\$1,590
	FE Loader C966	\$778	1	8	\$83	\$1,442
Final Haul Maintenance Haul Route	Grader 14G	\$778	1	45	\$100	\$5,278
	Dump Truck 12CY	\$163	2	8	\$79	\$1,590
	Vibratory Roller	\$778	1	45	\$77	\$4,243
	Water Truck 2,500 gallon	\$190	1	20	\$89	\$1,970
	FE Loader C966	\$778	1	8	\$83	\$1,442
Total						\$25,743

Production Rates	Miles/day	Distance(miles)	Days
Grader	2.5	2.5	1.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	2.5	2.5	1.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	6.7	4.5
Vibratory Roller	1.5	6.7	4.5

Projects Road Maintenance Cost Summary

Sale: Music Creek
Date: 5/23/14
By: John Choate *FL*

Type	Equipment/Rationale			Hours	Rate	Cost
Final Project Haul Road Maintenance	Grader 14G			6.0	\$100	\$600
	Dump Truck 12CY			3.0	\$79	\$237
	FE Loader C966			3.0	\$83	\$249
	Vibratory Roller			6.0	\$77	\$462
	Water Truck 2,500 gallon			6.0	\$89	\$534
Total						\$2,082

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	1.00	0.7
1.5	1.00	0.7

Trailover Road - From Quarry to junction of Music Creek/Beneke

SUMMARY OF ROCK DEVELOPMENT

PROJECT NO. 3

Timber Sale Name: Music Creek

Quarry: Trailover
 Location: NE 1/4, Sec.14, T6N, R7W
 County: Clatsop
 By: Kraig Kirkpatrick
 Date: 05/22/2014

Swell: _____
 Shrink: _____

Loading Hopper: No

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"		CR			
6"-0"	20%	CR		3,873	3,873
6"-0"		PR			
24"-6"		RR		758	758
36"		RR			

TOTAL CUBIC YARDS OF ROCK:

4,631

4,631**1) MOBILIZATION & SET UP:**

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Excavator	1	\$1,406	\$1,406	Off Highway Dump Truck	1	\$553	\$553
Loader	1	\$805	\$805	D8 Cat	1	\$1,406	\$1,406
1 Stage Crusher	1	\$1,446	\$1,446				
Screening Plant	1	\$553	\$553				
Drill and Compressor	1	\$1,406	\$1,406				
Powder	1	\$351	\$351				

SUB TOTAL FOR MOBILIZATION

\$7,926

EQUIPMENT SET UP	TIMES	RATE	COST
1 Stage Crusher	1	\$1,006	\$1,006
Screening Plant	1	\$293	\$293

SUB TOTAL FOR SET UP COSTS

\$1,299

TOTAL MOBILIZATION & SET UP COSTS**\$9,225****2) CLEARING & GRUBBING**

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Quarry and access road prep.				
Clearing and grubbing				
(C330)	10.0	hr	\$155	\$1,550

TOTAL CLEARING & GRUBBING COSTS**\$1,550**

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread) (prep. for future entry)				
(C330)	30	hr	\$155.00	\$4,650
(Off Highway Dump Truck)	30	hr	\$127.00	\$3,810

TOTAL EXCAVATION COSTS

\$8,460

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping			\$2.20	
crushed	3,873	84%	Drill & shoot	100%	5,389	\$2.30	\$12,395
pit run	0	0	Oversize red	2%	108	\$5.80	\$627
rip rap	758	16%	Other				
Total	4,631						
reject	775	16.7%					

TOTAL ROCK DEVELOPMENT COSTS

\$13,022

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST

TOTAL CALIBRATION & TESTING COSTS

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	4,648	\$0.40	\$1,859

TOTAL FEEDING & LOADING COSTS

\$1,859

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
6"-0"	crushed	3,873	1 stage w/s	200	\$0.75	\$2,905

TOTAL ROCK CRUSHING COSTS

\$2,905

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader		\$90.00	
Excavator		\$138.00	

Rock for Floor (CY)	\$/CY Haul	Total

SUB TOTAL

HAUL & STOCKPILE		# of			
STOCKPILE LOCATION	SIZE	TRUCKS	CU. YDS.	RATE	COST
1.					
2.					
3.					
4.					
5.					
6.					

SUB TOTAL

TOTAL STOCKPILING COSTS

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access (C330, 8Hrs.)	\$1,240
Backfill Sink Shot w/overburden (D8,8Hrs.)	\$1,264
Overburden waste area erosion control (Seed, 10 pounds)	\$16
(Straw Bales, 20)	\$215

TOTAL MISCELLANEOUS COSTS

\$2,735

10) GRAND TOTAL:

\$39,755

\$/Cubic Yard

\$10.26

Footnotes:

Fill Reconstruction Cost Estimate

Kraig Kirkpatrick
05/12/2014

Segment: I1 to I2 Station: 137+20
Fill: 4 Height: 7

Materials	Quantity	\$	Total
24"x45', 14ga, CMP	45	\$26.17	\$1,177.65
24"-6" Riprap Dissipator	0 cy		\$0.00 *
24"-6" Riprap Fill Armor	77 cy	\$5.26	\$405.02 *
1 1/2"-0" Crushed Rock for Bedding/Backfill	33 cy	\$4.59	\$151.47 *
4"-0" Crushed Rock for Road	50 cy	\$4.13	\$206.50 *

\$1,940.64

*Rock Haul Cost is totaled on the Surfacing Project Cost Sheet

Excavation	Rate	CY/amount	Total
End-Haul excavation \$/cy			
Excavate Fill	\$4.00	60	\$240.00
Backfill from borrow site	\$4.00	60	\$240.00
Compaction			
Backfill (borrow & crushed rock)	\$0.70	92	\$64.40
Waste material compaction	\$0.40	92	\$36.80
Fill armor placement w/330, \$/hr	\$155.00	5	\$775.00
Laborer \$/hr	\$40.00	5	\$200.00
Erosion Control	0.1 ac	\$628.00	\$62.80
Mulch and seed			

\$1,619.00

Project Total	\$3,560
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Sale: Music Creek
Road: Music Road
Points: 11-12

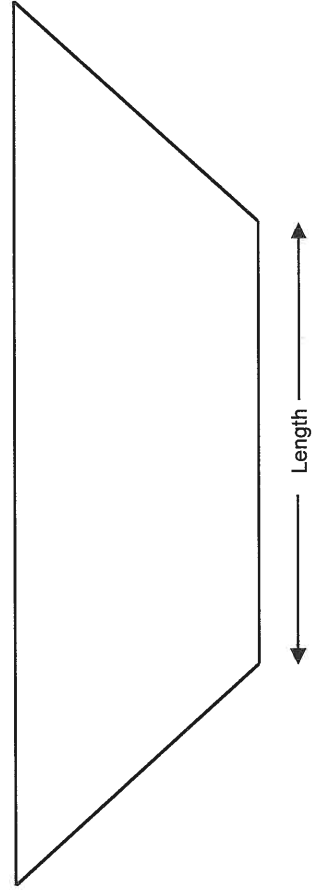
Date: 06/13/2014
By:

Armor Thickness (feet): 2

[illegible]

Total CY to Apply*: 637

* Volume rounded off to the nearest 10 cubic yard load



CRUSHED ROCK COST

SALE NAME:	Music Creek
PROJECT:	No.1 and 2
QUARRY:	Music Salvage Rock

MATERIAL: 1 1/2"-0" Crushed

DATE: 05/20/2014
BY: J. Choate/K. Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$3.33	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>4</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,240

CRUSHED ROCK HAUL COSTS 2,328 cy @ \$4.59 /cy

CRUSHED ROCK COST

SALE NAME:	Music Creek
PROJECT:	No. 1 and 2
QUARRY:	Trailover

MATERIAL: 3/4" & 4" Crushed

DATE: 05/20/2014
BY: J. Choate/K. Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$2.87	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type: D12 No. trucks: 4
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,440

CRUSHED ROCK HAUL COSTS

671 cy @ \$4.13 /cy

PIT RUN ROCK COST

SALE NAME:	Music Creek
PROJECT:	No. 1 and 2
QUARRY:	Trailover

MATERIAL: Pit Run

DATE: 05/20/2014
BY: J. Choate/K. Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$4.30	/cy
Load:	\$0.48	/cy
Spread:	\$0.84	/cy

Truck type: D12 No. trucks: 4
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 960

PIT RUN ROCK HAUL COSTS

3,851 cy @ \$5.62 /cy

Projects Road Maintenance Cost Summary

Sale: Music Creek
Date: 5/23/14
By: John Choate

Type	Equipment/Rationale			Hours	Rate	Cost
Final Project Haul Road Maintenance	Grader 14G			6.0	\$100	\$600
	Dump Truck 12CY			3.0	\$79	\$237
	FE Loader C966			3.0	\$83	\$249
	Vibratory Roller			6.0	\$77	\$462
	Water Truck 2,500 gallon			6.0	\$89	\$534
Total						\$2,082

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	1.00	0.7
1.5	1.00	0.7

Trailover Road - From Quarry to junction of Music Creek/Beneke

**Music Creek
TIMBER CRUISE REPORT
FY 2014**

1. **Sale Area Location:** Areas 1, 2, and 3 are located in portions of Sections 10, 14, and 15, T6N, R7W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%
Tax Code 8-01 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W*	Stream Buffer	GTRA	Net Acres	Survey Method
1	Modified Clearcut	22	0	<1	1	0	21	GIS
2	Modified Clearcut	53	0	1	3	0	49	GIS
3	Modified Clearcut	41	3	0	1	6	31	GIS
4	Right-of-Way*	2	0	3	0	0	3	GIS
TOTALS		118	3		5	6	104	

* An additional 1 acre of R/W is located outside of the sale area on road segment 2A-2B.

4. **Cruisers and Cruise Dates:** Areas 1, 2, and 3, were cruised by John Choate, Skyler Hoefer, David Rygell, and Kevin Berry on April 24, 2014.

5. Cruise Method and Computation:

Areas 1, 2, and 3 are Modified Clearcut units and were variable plot cruised using a 54.45 BAF. The plots are located on a 4 chain by 8 chain grid, with every third plot measured and graded. A total of 35 plots were sampled, with 14 measured and graded plots, and 21 count plots. Additional Red alder were graded on one of the count plots because of the rarity of the species in the cruise.

All cruisers used Corvallis Micro Technology (CMT), and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

AREA	CRUISE	TRACT	TYPE	ACRES
1, 2, 3	06N07W10000MC	123	00MC	104

6. Timber Description:

Areas 1, 2, and 3 are modified clearcut units, approximately 70 to 75 year-old, consisting of Douglas-fir and western hemlock with a small amount of red alder. The average Douglas-fir tree size to be harvested is 27.0 inches DBH, with an average height of 108 feet to a merchantable top (40% of DBH). The average volume (net) is approximately 70 MBF/acre.

Area 4 R/W is similar to the timber description mentioned above for Area 1. The average volume (net) is approximately 73 MBF/acre.

7. Statistical Analysis and Stand Summary: (See "Statistics" - Type Reports, attached)

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 2, and 3	50%	9%	33%	5.6%

8. Volumes by Species and Log Grade: (See "Species, Sort, Grade" - Project Report, attached).

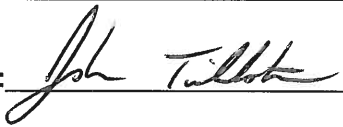
Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	27	4,347	3,646	677	24	0	3.5	59
Hemlock/True-fir	18	2,957	1,784	999	174	0	2.0	40
Red Alder	19	17	0	0	0	17	10.4	<1
TOTALS	22	7,321						

TOTAL NET VOLUME	7,321
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9. Approvals:

Prepared by: John Choate Date: 5/06/14

Unit Forester Approval:  Date: 6/19/14

- 10. Attachments:**
- Cruise Designs and Maps – 3 pages
 - Volume Report - 3 pages
 - Statistics Reports - 6 pages
 - Log Stock Tables - 2 pages
 - Stand Table Summary – 1 pages

X:\Sunset Unit\2014 FY Sales\Music Creek\Sale Prep\Cruise\Music Creek Cruise Report

CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Music Creek Area(s) 1, 2 and 3

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 105 Estimated CV% 50 ^{Net BF or} BA/Acre SE% Objective 9 ^{Net BF or} BA/Acre

Planned Sale Volume: 4.87 MMBF Estimated Sale Area Value/Acre: \$14,625

- A. **Cruise Goals:** (a) Grade minimum 60 conifer and 15 hardwood trees:
(b) Sample X cruise plots; (c) Other goals X Determine log grades for sale value;
X Determine snag and leave tree species and sizes

B. Cruise Design:

1. **Plot Cruises:** BAF 54.45 (Full point, Half point) (circle one)
Fixed Plot Size _____ Plot Radius _____ feet
Cruise Line Direction(s) Area 1: 52°/232°, Area 2: 110°/290°,
Area 3: 0°/360°
Cruise Line Spacing 8 (chains) (feet)
Cruise Plot Spacing 4 (chains) (feet)
Grade/Count Ratio 1:2
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir _____ Hemlock _____
Spruce _____ True Fir _____ Cedar _____ Hardwood _____

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. Tree Segments: Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 10'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. Species, Sort, and Grade Codes: A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: R = Camp Run

7. Deductions: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. Standard Field Procedures: Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

9. Cruising Equipment: Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. Attachments: A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: JOHN CHASE

Approved by: [Signature]

Date: 4/23/2014

Music Creek
Portions of Section 10, 15, and 14, T6N, R7W, W.M.
Clatsop County, Oregon

Area 1 (MC) - 20 Acres

Area 2 (MC) - 51 Acres

Area 3 (MC) - 32 Acres

Total (MC) - 103 Acres (Net)

Area : 1
Grade : 3
Count : 5
AZ: 52°/232°

Area : 3
Grade : 5
Count : 6
AZ: 0°/360°

Area : 2
Grade : 6
Count : 10
AZ: 110°/290°

Line Spacing: 8 CHAINS
Plot Spacing: 4 CHAINS
BAF : 54.75

0 250 500 1,000 1,500 2,000 Feet

1 in = 1,000 ft

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T06N R07W S10 TyRW3.00 T06N R07W S10 TyTK101.00				Project: MUSIC													Page 1				
				Acres 104.00													Date 6/11/2014 Time 10:49:11AM				
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
H			DOCU															13		0.00	17.4
H			DO2S	60	2.4	17,581	17,156	1,784			3	50	47	2	4	4	89	38	360	2.02	47.6
H			DO3S	34	1.6	9,759	9,605	999	0	66	24	10	4	2	26	69	36	124	0.94	77.2	
H			DO4S	6		1,678	1,678	174	3	90	7		30	36	34		23	40	0.55	41.7	
H Totals				40	2.0	29,017	28,438	2,958	0	29	39	32	4	5	13	77	32	155	1.18	183.9	
D			DOCU															10		0.00	6.6
D			DO2S	83	4.1	36,559	35,062	3,646			1	20	79	2	3	2	93	39	525	2.82	66.8
D			DO3S	16	.5	6,543	6,509	677			63	20	17	1	12	26	61	35	129	1.04	50.4
D			DO4S	1		234	234	24	34	66				40	60			25	35	0.44	6.6
D Totals				59	3.5	43,336	41,804	4,347	0	11	20	69	2	4	6	88	35	320	2.01	130.4	
A			DOCR	100	10.4	184	165	17		100						47	53	35	52	0.99	3.2
A Totals				0	10.4	184	165	17		100						47	53	35	52	0.99	3.2
Totals					2.9	72,538	70,407	7,322	0	19	28	54	3	5	9	83	33	222	1.54	317.5	

7,321

T		Species, Sort Grade - Board Foot Volumes (Type)												Page		1				
TSPCSTGR		Project: MUSIC												Date		6/11/2014				
														Time		8:05:20AM				
T06N R07W S10 TRW										T06N R07W S10 TRW										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
06N	07W	10	123	RW	3.00	8	22	1	W											
S So Gr T rt ad Spp		% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
							Log Scale Dia.				Log Length				Ln	Bd	CF/			
			Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	Ft	Lf			
H	DO	CU												10		0.00	19.4			
H	DO	2S	62	2.9	23,200	22,536	68		7	49	44	6		6	88	38	365	2.06	61.7	
H	DO	3S	34	1.4	12,160	11,985	36	1	66	26	7	9	1	38	52	35	117	0.93	102.7	
H	DO	4S	4		1,299	1,299	4	12	73	15		66	34			20	34	0.57	38.8	
H	Totals		49	2.3	36,660	35,820	107	1	29	40	30	10	2	16	73	31	161	1.25	222.6	
D	DO	2S	87	.4	32,571	32,424	97		7	93			1		99	39	584	3.09	55.6	
D	DO	3S	13		4,580	4,580	14		58	42				46	54	34	129	1.05	35.4	
D	Totals		51	.4	37,151	37,005	111		7	11	82			1	6	93	37	407	2.37	91.0
Type Totals				1.3	73,811	72,824	218	0	18	25	56	5	1	11	83	33	232	1.61	313.5	

T		Species, Sort Grade - Board Foot Volumes (Type)										Page		1					
TSPCSTGR		Project: MUSIC										Date		6/11/2014					
												Time		8:08:33AM					
T06N R07W S10 TTK										T06N R07W S10 TTK									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
06N	07W	10	123	TK	101.00	35	98	1	W										
S So Gr Spp T rt ad			% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
			Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf			
D	DO	CU													10		0.00	6.8	
D	DO	2S	83	4.2	36,678	35,140	3,549		1	21	78	2	3	2	93	39	523	2.81	67.1
D	DO	3S	16	.5	6,602	6,566	663		63	19	18	1	12	26	62	35	129	1.04	50.8
D	DO	4S	1		241	241	24	34	66			40	60			25	35	0.44	6.8
D	Totals		60	3.6	43,520	41,947	4,237	0	11	20	68	2	4	6	88	35	319	2.00	131.6
H	DO	CU														13		0.00	17.3
H	DO	2S	60	2.4	17,414	16,996	1,717		2	50	47	2	4	4	89	38	360	2.02	47.2
H	DO	3S	34	1.6	9,688	9,534	963	0	66	24	10	3	2	25	69	36	125	0.94	76.5
H	DO	4S	6		1,689	1,689	171	3	90	6		29	36	35		23	40	0.55	41.8
H	Totals		40	2.0	28,790	28,219	2,850	0	29	39	32	4	5	13	77	32	154	1.17	182.7
A	DO	CR	100	10.4	189	170	17		100					47	53	35	52	0.99	3.3
A	Totals		0	10.4	189	170	17		100					47	53	35	52	0.99	3.3
Type Totals				3.0	72,500	70,335	7,104	0	19	28	53	3	5	9	83	33	221	1.54	317.6

TC PSTATS				PROJECT STATISTICS				PAGE	1			
				PROJECT	MUSIC			DATE	6/11/2014			
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
06N	07	10	123	RW		104.00	43	266	1	W		
06N	07W	10	123	TK								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			43	266	6.2							
CRUISE			18	120	6.7	13,605	.9					
DBH COUNT												
REFOREST												
COUNT			25	143	5.7							
BLANKS												
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
WHEMLOCK			64	83.0	18.3	73		151.9	29,017	28,438	6,832	6,832
DOUG FIR			53	44.2	27.0	107		176.6	43,336	41,804	9,202	9,202
SNAG			1	.4	14.0	85		.4				
R ALDER			2	3.2	18.7	36		6.0	184	165	110	110
TOTAL			120	130.8	21.7	84		334.8	72,538	70,407	16,144	16,144
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		
WHEMLOCK			78.3	9.8	492	545	599					
DOUG FIR			54.2	7.4	1,166	1,259	1,353					
SNAG												
R ALDER			38.6	36.1	35	55	75					
TOTAL			78.4	7.1	787	848	909	245	61	27		
CL	68.1	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
WHEMLOCK			68.8	8.6	114	125	136					
DOUG FIR			45.9	6.3	252	268	285					
SNAG												
R ALDER			42.0	39.4	22	37	52					
TOTAL			68.6	6.3	174	186	198	188	47	21		
CL	68.1	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
WHEMLOCK			118.8	18.1	68	83	98					
DOUG FIR			76.0	11.6	39	44	49					
SNAG			458.1	69.8	0	0	1					
R ALDER			396.5	60.4	1	3	5					
TOTAL			76.2	11.6	116	131	146	232	58	26		
CL	68.1	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
WHEMLOCK			101.9	15.5	128	152	175					
DOUG FIR			74.0	11.3	157	177	196					
SNAG			458.1	69.8	0	0	1					
R ALDER			393.5	60.0	2	6	10					
TOTAL			52.3	8.0	308	335	362	109	27	12		
CL	68.1	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
WHEMLOCK			98.6	15.0	24,164	28,438	32,712					
DOUG FIR			74.6	11.4	37,054	41,804	46,555					
SNAG												
R ALDER			393.8	60.0	66	165	263					

TC PSTATS				PROJECT MUSIC				PAGE	2
								DATE	6/11/2014
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	07	10	123	RW	104.00	43	266	1	W
06N	07W	10	123	TK					
CL	68.1		COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10
TOTAL			54.0	8.2	64,619	70,407	76,195	116	29
CL	68.1		COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10
WHEMLOCK			100.2	15.3	5,790	6,832	7,875		
DOUG FIR			73.5	11.2	8,171	9,202	10,232		
SNAG									
R ALDER			394.1	60.1	44	110	176		
TOTAL			53.0	8.1	14,841	16,144	17,447	112	28

TC PSTATS			PROJECT STATISTICS							PAGE	1	
			PROJECT				MUSIC		DATE	6/11/2014		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
06N	07	10	123	00MC		101.00		35	222	1	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			35	222	6.3							
CRUISE			15	104	6.9	13,777		.8				
DBH COUNT												
REFOREST												
COUNT			20	115	5.8							
BLANKS												
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			47	44.7	27.0	107		177.4	43,520	41,947	9,236	9,236
WHEMLOCK			49	82.8	18.3	73		150.9	28,790	28,219	6,778	6,778
R ALDER			2	3.3	18.7	36		6.2	189	170	113	113
SNAG			2	3.5	15.6	72		4.7				
DOUGLEAV			2	.5	34.5	90		3.1	655	600	146	146
HEMLEAV			1	1.1	16.0	75		1.6	245	245	68	68
CEDLEAV			1	.6	22.0	65		1.6	165	147	51	51
TOTAL			104	136.4	21.5	83		345.4	73,565	71,328	16,393	16,393
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			56.2	8.2	1,138	1,239	1,341					
WHEMLOCK			80.0	11.4	476	538	599					
R ALDER			38.6	36.1	35	55	75					
SNAG												
DOUGLEAV			102.6	96.1	70	1,785	3,500					
HEMLEAV												
CEDLEAV												
TOTAL			83.0	8.1	784	853	923	275	69	31		
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			47.5	6.9	246	264	282					
WHEMLOCK			69.9	10.0	111	123	135					
R ALDER			42.0	39.4	22	37	52					
SNAG												
DOUGLEAV			81.8	76.6	94	401	708					
HEMLEAV												
CEDLEAV												
TOTAL			72.6	7.1	174	187	200	210	53	23		
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			57.6	9.7	40	45	49					
WHEMLOCK			104.3	17.6	68	83	97					
R ALDER			356.0	60.1	1	3	5					
SNAG			338.6	57.2	1	4	6					
DOUGLEAV			591.6	99.9	0	0	1					
HEMLEAV			591.6	99.9	0	1	2					
CEDLEAV			591.6	99.9	0	1	1					
TOTAL			61.5	10.4	122	136	151	151	38	17		
CL	68.1		COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07	10	123	00MC	101.00	35	222	1	W	
			DOUG FIR	56.4	9.5	160	177	194		
			WHEMLOCK	88.0	14.9	128	151	173		
			R ALDER	353.3	59.7	3	6	10		
			SNAG	331.4	56.0	2	5	7		
			DOUGLEAV	591.6	99.9	0	3	6		
			HEMLEAV	591.6	99.9	0	2	3		
			CEDLEAV	591.6	99.9	0	2	3		
			TOTAL	31.1	5.2	327	345	363		
							38	10	4	
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	57.2	9.7	37,893	41,947	46,001		
			WHEMLOCK	84.9	14.3	24,172	28,219	32,266		
			R ALDER	353.6	59.7	68	170	271		
			SNAG							
			DOUGLEAV	591.6	99.9	1	600	1,200		
			HEMLEAV	591.6	99.9	0	245	490		
			CEDLEAV	591.6	99.9	0	147	295		
			TOTAL	32.9	5.6	67,368	71,328	75,288		
							43	11	5	
CL 68.1			COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0			VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
			DOUG FIR	56.0	9.5	8,363	9,236	10,109		
			WHEMLOCK	86.5	14.6	5,788	6,778	7,768		
			R ALDER	353.9	59.8	46	113	181		
			SNAG							
			DOUGLEAV	591.6	99.9	0	146	293		
			HEMLEAV	591.6	99.9	0	68	136		
			CEDLEAV	591.6	99.9	0	51	102		
			TOTAL	31.6	5.3	15,520	16,393	17,267		
							40	10	4	

TC TSTATS				STATISTICS PROJECT MUSIC				PAGE 1 DATE 6/11/2014			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	07W	10	123	TK	101.00	35	215	1	W		
				TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
		PLOTS	TREES								
TOTAL		35	215	6.1							
CRUISE		15	98	6.5		13,203		.7			
DBH COUNT											
REFOREST											
COUNT		20	114	5.7							
BLANKS											
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		47	44.7	27.0	107		177.4	43,520	41,947	9,236	9,236
WHEMLOCK		49	82.8	18.3	73		150.9	28,790	28,219	6,778	6,778
R ALDER		2	3.3	18.7	36		6.2	189	170	113	113
TOTAL		98	130.7	21.7	84		334.5	72,500	70,335	16,128	16,128
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		56.2	8.2	1,138	1,239	1,341					
WHEMLOCK		80.0	11.4	476	538	599					
R ALDER		38.6	36.1	35	55	75					
TOTAL		78.2	7.9	796	864	933	244	61	27		
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		47.5	6.9	246	264	282					
WHEMLOCK		69.9	10.0	111	123	135					
R ALDER		42.0	39.4	22	37	52					
TOTAL		68.1	6.9	176	189	202	185	46	21		
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		57.6	9.7	40	45	49					
WHEMLOCK		104.3	17.6	68	83	97					
R ALDER		356.0	60.1	1	3	5					
TOTAL		60.0	10.1	117	131	144	144	36	16		
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		56.4	9.5	160	177	194					
WHEMLOCK		88.0	14.9	128	151	173					
R ALDER		353.3	59.7	3	6	10					
TOTAL		30.6	5.2	317	334	352	37	9	4		
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		57.2	9.7	37,893	41,947	46,001					
WHEMLOCK		84.9	14.3	24,172	28,219	32,266					
R ALDER		353.6	59.7	68	170	271					
TOTAL		33.1	5.6	66,409	70,335	74,262	44	11	5		
CL: 68.1 %		COEFF		NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR		56.0	9.5	8,363	9,236	10,109					
WHEMLOCK		86.5	14.6	5,788	6,778	7,768					
R ALDER		353.9	59.8	46	113	181					
TOTAL		31.6	5.3	15,267	16,128	16,989	40	10	4		

TC TSTATS				STATISTICS				PAGE 1			
				PROJECT MUSIC		DATE 6/11/2014					
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	07W	10	123	RW	3.00	8	51	1	W		
				TREES	ESTIMATED TOTAL	PERCENT SAMPLE					
PLOTS		TREES	PER PLOT	TREES	TREES						
TOTAL		8	51	6.4							
CRUISE		3	22	7.3	402	5.5					
DBH COUNT											
REFOREST											
COUNT		5	29	5.8							
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOCK		15	90.9	19.3	81	183.8	36,660	35,820	8,641	8,641	
DOUG FIR		6	30.3	30.1	115	149.7	37,151	37,005	8,046	8,046	
SNAG		1	12.7	14.0	85	13.6					
TOTAL		22	134.0	21.8	89	347.1	73,811	72,824	16,687	16,687	
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		
WHEMLOCK		75.3	20.1	456	571	686					
DOUG FIR		42.3	18.8	1,149	1,415	1,681					
SNAG											
TOTAL		79.9	17.4	640	775	911	267	67	30		
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		67.6	18.1	108	132	156					
DOUG FIR		36.3	16.1	253	302	350					
SNAG											
TOTAL		72.3	15.7	145	172	200	218	55	24		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		83.1	31.3	62	91	119					
DOUG FIR		73.9	27.9	22	30	39					
SNAG		185.2	69.8	4	13	22					
TOTAL		57.9	21.8	105	134	163	153	38	17		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		74.2	28.0	132	184	235					
DOUG FIR		79.6	30.0	105	150	195					
SNAG		185.2	69.8	4	14	23					
TOTAL		34.5	13.0	302	347	392	54	14	6		
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		71.9	27.1	26,116	35,820	45,523					
DOUG FIR		80.4	30.3	25,785	37,005	48,224					
SNAG											
TOTAL		33.6	12.7	63,585	72,824	82,063	52	13	6		
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK		73.2	27.6	6,256	8,641	11,025					
DOUG FIR		79.3	29.9	5,641	8,046	10,452					
SNAG											

TC TSTATS				STATISTICS				PAGE	2
				PROJECT	MUSIC				
								DATE	6/11/2014
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	07W	10	123	RW	3.00	8	51	1	W
CL:	68.1%	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
TOTAL		34.0	12.8	14,548	16,687	18,826	53	13	6

TC PLOGSTVC		Log Stock Table - CCF																	
T06N R07W S10 TyRW3.00 T06N R07W S10 TyTK101.00				Project: MUSIC Acres104.00										Page1 Date6/11/2014 Time8:02:56AM					
S T Spp	So Gr rt de	Log Len	Gross CCF	Def %	Net CCF	% 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	24-29	30-39	40+	
H	DO CU	4																	
H	DO CU	6																	
H	DO CU	12																	
H	DO CU	16																	
H	DO CU	20																	
H	DO 2S	20	64		64	.9										64			
H	DO 2S	24	65		65	.9										65			
H	DO 2S	28	76		76	1.1						76							
H	DO 2S	32	187		187	2.6								93	94				
H	DO 2S	38	108		108	1.5								108					
H	DO 2S	40	3,336		3,336	47.0						115	734	578	1067	729	114		
H	DO 3S	16	12		12	.2						12							
H	DO 3S	17	10		10	.1						10							
H	DO 3S	20	63		63	.9								63					
H	DO 3S	24	55		55	.8					55								
H	DO 3S	28	22		22	.3		22											
H	DO 3S	31	30		30	.4					30								
H	DO 3S	32	564		564	7.9				20	165	325	54						
H	DO 3S	34	105		105	1.5							105						
H	DO 3S	38	46		46	.6				46									
H	DO 3S	40	1,811		1,811	25.5				385	346	507	209	173	108		82		
H	DO 4S																		
H	DO 4S	12	7		7	.1					7								
H	DO 4S	16	79		79	1.1				48	21	10							
H	DO 4S	20	91		91	1.3		24		38	14		15						
H	DO 4S	24	97		97	1.4				57	22		17						
H	DO 4S	28	51		51	.7				26	24								
H	DO 4S	30	74		74	1.0				74									
H	DO 4S	32	153		153	2.2				80		74							
H	Totals		7,105		7,105	42.3		46	775	685	1053	1209	1015	1269	858	196			
D	DO CU	6																	
D	DO CU	10																	
D	DO CU	12																	
D	DO CU	40																	
D	DO 2S	20	133		133	1.4										133			
D	DO 2S	28	193		193	2.0						25		84	85				
D	DO 2S	32	150		150	1.6						52				98			

Log Stock Table - CCF

T06N R07W S10 TyRW 3.00
T06N R07W S10 TyTK 101.00

Project: MUSIC
Acres 104.00

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Spp	S T	So rt	Gr de	Log Len	Gross CCF	Def %	Net CCF	% 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	24-29	30-39	40+
D		DO	2S	36	112		112	1.2							112					
D		DO	2S	40	7,022		7,022	73.4					111	363	867	2048	2014	1259	360	
D		DO	3S	12	7		7	.1							7					
D		DO	3S	20	14		14	.1				14								
D		DO	3S	24	54		54	.6					54							
D		DO	3S	26	37		37	.4				37								
D		DO	3S	28	46		46	.5					22	24						
D		DO	3S	30	105		105	1.1				47	33	25						
D		DO	3S	32	451		451	4.7				153	216	37	45					
D		DO	3S	34	54		54	.6			27		27							
D		DO	3S	36	240		240	2.5			23	61	92	34	30					
D		DO	3S	38	34		34	.4					34							
D		DO	3S	40	838		838	8.8			227	59	172	80	56	245				
D		DO	4S	16	17		17	.2			6	11								
D		DO	4S	20	13		13	.1				13								
D		DO	4S	30	48		48	.5		27	21									
D		Totals			9,570		9,570	57.0		27	303	395	761	639	1118	2376	2099	1490	360	
A		DO	CR	32	52		52	45.3			52									
A		DO	CR	40	63		63	54.7			63									
A		Totals			115		115	.7			115									
Total		All Species			16,790		16,790	100.0		73	1193	1081	1814	1849	2133	3645	2957	1685	360	

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		6/11/2014	
T06N R07W S10 TyRW3.00 T06N R07W S10 TyTK101.00				Project						MUSIC				Time:		8:02:56AM	
				Acres						104.00				Grown Year:			
S Spec	T	Tot			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals				
		DBH	Sample Trees	FF 16'				Av Ht	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF	
D		16	2	90	123	5.249	7.33	13.12	27.8	112.0		365	1,470		379	153	
D		17	1	88	113	2.325	3.66	4.65	33.5	125.0		156	581		162	60	
D		19	1	85	109	1.861	3.66	3.72	40.0	130.0		149	484		155	50	
D		20	1	89	119	1.680	3.66	3.36	50.5	195.0		170	655		176	68	
D		21	1	85	145	1.524	3.66	4.57	40.0	170.0		183	777		190	81	
D		22	2	89	117	2.776	7.33	6.94	47.2	178.0		328	1,235		341	128	
D		24	3	87	126	2.562	8.05	6.52	58.7	238.2		383	1,553		398	162	
D		25	3	87	149	2.361	8.05	7.08	63.3	272.8		448	1,932		466	201	
D		26	2	87	135	2.027	7.33	6.08	58.9	238.6		358	1,451		373	151	
D		27	3	90	158	2.765	10.99	9.22	69.7	342.0		642	3,152		668	328	
D		29	6	88	145	4.794	21.99	15.18	79.0	351.1	1,199	5,329		1,247	554		
D		30	1	86	140	.747	3.66	2.24	87.7	373.3		196	836		204	87	
D		31	3	87	143	2.097	10.99	6.29	90.9	414.4		572	2,608		595	271	
D		32	4	86	148	2.097	11.71	6.29	98.5	461.9		620	2,906		644	302	
D		33	6	87	147	3.206	19.04	9.62	101.0	486.1		972	4,676	1,010	486		
D		34	4	88	145	2.325	14.66	6.97	106.9	516.7		746	3,604		776	375	
D		35	1	86	151	.548	3.66	1.65	126.7	610.0		208	1,004		217	104	
D		36	4	83	151	1.657	11.71	4.97	124.0	576.1		617	2,864		641	298	
D		40	2	85	141	.502	4.38	1.51	152.3	776.7		230	1,171		239	122	
D		41	1	92	173	.400	3.66	1.60	148.7	817.5		238	1,307		247	136	
D		42	1	88	159	.381	3.66	1.14	181.7	993.3		208	1,135		216	118	
D		43	1	85	163	.363	3.66	1.09	197.7	986.7		215	1,076		224	112	
D		Totals	53	88	137	44.248	176.55	123.82	74.3	337.6		9,202	41,804		9,570	4,348	
H		10	2	85	57	10.967	5.98	10.97	13.5	45.0		148	494		154	51	
H		12	2	89	82	4.258	3.34	4.26	26.0	90.0		111	383		115	40	
H		14	1	91	73	2.798	2.99	2.80	29.0	90.0		81	252		84	26	
H		15	4	90	92	9.749	11.96	17.06	26.9	111.4		458	1,901		477	198	
H		16	9	89	96	15.500	21.64	31.00	29.1	108.1		901	3,351		937	348	
H		17	4	91	96	5.917	9.33	12.06	30.7	115.1		370	1,388		385	144	
H		18	6	88	94	7.170	12.67	12.45	35.1	123.8		437	1,540		455	160	
H		20	4	88	116	4.275	9.33	11.45	40.5	155.6		464	1,783		483	185	
H		21	9	90	112	7.901	19.01	21.22	44.5	185.9		944	3,945		982	410	
H		22	1	92	136	1.133	2.99	3.40	52.0	236.7		177	804		184	84	
H		23	3	87	117	2.196	6.34	6.59	46.9	184.7		309	1,217		321	127	
H		24	4	88	121	2.969	9.33	7.95	54.4	232.3		433	1,848		450	192	
H		26	2	90	129	1.622	5.98	4.87	68.7	331.7		334	1,614		348	168	
H		27	4	91	135	2.346	9.33	7.79	67.7	326.3		528	2,541		549	264	
H		28	2	87	125	1.399	5.98	4.20	76.2	350.0		320	1,469		332	153	
H		29	1	89	141	.652	2.99	1.96	91.7	436.7		179	854		186	89	
H		30	1	88	110	.609	2.99	1.83	81.3	393.3		149	719		155	75	
H		33	2	83	122	.563	3.34	1.69	99.3	453.3		168	766		174	80	
H		34	3	88	143	1.005	6.34	3.01	106.9	520.8		322	1,570		335	163	
H		Totals	64	89	97	83.028	151.85	166.54	41.0	170.8		6,832	28,438		7,105	2,958	
A		17	1	87	37	1.917	3.02	1.92	26.0	40.0		50	77		52	8	
A		21	1	87	47	1.256	3.02	1.26	48.0	70.0		60	88		63	9	
A		Totals	2	87	41	3.173	6.04	3.17	34.7	51.9		110	165		115	17	
SN		14	1	88	85	.367	.39										
SN		Totals	1	88	85	.367	.39										
Totals		120	88	109		130.817	334.84	293.53	55.0	239.9		16,144	70,407		16,790	7,322	

Legend

-  Fish Stream
-  Nonfish Stream
-  Posted Stream Buffer
-  Unposted Stream Buffer
-  Surfaced Road
-  Stockpile
-  Quarry
-  New Road Construction
-  New Road Construction - Unsurfaced
-  Timber Sale Boundary
-  Cable Logging
-  Tractor Yarding
-  Green Tree Retention Area
-  Tailhold Review Required
-  Line Pull

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-15-31
MUSIC CREEK
PORTIONS OF SECTION 10, 14, and 15,
T6N, R7W, W.M., CLATSOP COUNTY, OR

Area 1 (MC) = 21 Acres
Area 2 (MC) = 49 Acres
Area 3 (MC) = 31 Acres
Area 4 (R/W) = 3 Acres

Total Acres = 104 Acres

1 inch = 1,000 feet
0 500 1,000 1,500 Feet

