



"STRENGTH THROUGH FORESTRY"

Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,123,008.65	\$103,178.24	\$1,226,186.89
		Project Work:	(\$218,250.00)
		Advertised Value:	\$1,007,936.89



"SUSTAINABLE FORESTRY"

Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Timber Description

Location: Portions of Sections 11, 12, and 14, T1N, R8W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	14	0	92
Alder (Red)	12	0	88

Volume by Grade	2S	3S	4S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	547	2,114	1,078	0	0	0	0	3,739
Alder (Red)	0	0	0	90	74	66	228	458
Total	547	2,114	1,078	90	74	66	228	4,197

Comments: Pond Values Used: 4th Quarter Calendar Year 2014.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
\$205/MBF = \$540/MBF - \$335/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
\$840/MBF = \$1,175/MBF - \$335/MBF

Pulp (Conifer and Hardwood) Price = \$25/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):
Brand and Paint: \$2/MBF x 4,197 MBF = \$8,394
Machine Cleaning: \$1,000/machine x 4 machines = \$4,000
Truck Assist (Area 1 (Point H)): 312 MBF x \$20/MBF = \$6,240
TOTAL Other Costs (with Profit & Risk to be added) = \$18,634

Other Costs (No Profit & Risk added):
Cover Materials for Piles: \$5/pile x 35 piles = \$175
Non-Project Spur Construction: 4+50 stations x \$200/station = \$900
Approach Rock for Non-project Spur: 1 approach x 40 yds/approach x \$13.32/yd = \$533
OHV Trail Filters: 1 x \$75/filter = \$75
Slash Piling and Sorting (Cable Ground): \$5/ac x 212 ac = \$1,060
Heliport Slash Sorting: 2 heliports x \$500/heliport = \$1,000
TOTAL Other Costs (No Profit & Risk added) = \$3,743

ROAD MAINTENANCE:

Spot rocking:
Haul route 1: 20 cy/mmbf/mile x \$13.32/cy x 2.0985 MMBF x 6 miles / 2,099 MBF = \$1.60/MBF
Haul route 2: 20 cy/mmbf/mile x \$13.32/cy x 2.0985 MMBF x 6 miles / 2,099 MBF = \$1.60/MBF
Total Spot Rocking: \$3.20/MBF

Interim Maintenance Grading:
Haul Route 1: \$250 x 6 miles/2,099 MBF x 2 times = \$1.43/MBF
Haul Route 2: \$250 x 6 miles/2,099 MBF x 2 times = \$1.43/MBF
Total Interim Maintenance Grading: \$2.86/MBF

Total Final Maintenance Grading: \$500 x 12 miles/4,197 MBF = \$1.43/MBF

Total Final Maintenance Compaction: \$950/mile x 8 miles/4,197 MBF = \$1.81/MBF

TOTAL Road Maintenance: \$9.30/MBF



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Logging Conditions

Combination#: 1 Douglas - Fir 97.01%
 Alder (Red) 96.12%

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

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 8 **bd. ft / load:** 3800

cost / mbf: \$197.37

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

Combination#: 2 Douglas - Fir 2.99%
 Alder (Red) 3.88%

Logging System: Shovel **Process:** Stroke Delimber

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 18 **bd. ft / load:** 3800

cost / mbf: \$46.37

machines: Stroke Delimber (B)



Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Logging Costs

Operating Seasons: 1.00	Profit Risk: 10%
Project Costs: \$218,250.00	Other Costs (P/R): \$18,634.00
Slash Disposal: \$0.00	Other Costs: \$3,743.00

Miles of Road

Road Maintenance: \$9.30

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	3.1
Western Hemlock / Fir	\$0.00	2.0	3.0
Alder (Red)	\$0.00	2.0	2.8

Local Pond Values

Date	Specie	Grade	Value
01/12/2015	Douglas - Fir	2S	\$705.00
01/12/2015	Douglas - Fir	3S	\$640.00
01/12/2015	Douglas - Fir	4S	\$590.00



"STAND FOR AN OREGON"

Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$192.85	\$10.04	\$1.04	\$90.58	\$4.44	\$29.90	\$0.00	\$5.00	\$0.89	\$334.74
Alder (Red)									
\$191.51	\$10.42	\$1.04	\$156.00	\$4.44	\$36.34	\$0.00	\$5.00	\$0.89	\$405.64

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$635.09	\$300.35	\$0.00
Alder (Red)	\$0.00	\$630.92	\$225.28	\$0.00



Timber Sale Appraisal Between Wolves

Sale TL-341-2015-73-

District: Tillamook

Date: January 12, 2015

Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,739	\$300.35	\$1,123,008.65
Alder (Red)	458	\$225.28	\$103,178.24

Gross Timber Sale Value

Recovery: \$1,226,186.89

Prepared By: Bryan Huck

Phone: 503-842-2545



PROJECT SUMMARY SHEET

Sale: Between Wolves

CONSTRUCTION

Point	A to B	6+30	stations =	\$3,932.58
Point	G to H	4+50	stations =	\$6,224.25
Point	I to J	10+00	stations =	\$29,456.06
SUBTOTAL CONSTRUCTION				\$39,612.89

IMPROVEMENT

Point	A to B	204+60	stations =	\$57,506.65
SUBTOTAL IMPROVEMENT				\$57,506.65

RECONSTRUCTION

Point	C to D	84+00	stations =	\$92,665.40
Point	E to F	6+30	stations =	\$7,610.61
Point	I to J	10+30	stations =	\$14,754.19
SUBTOTAL RECONSTRUCTION				\$115,030.20

SPECIAL PROJECTS

Brush	3.0	miles of road		\$2,400.00
SUBTOTAL SPECIAL PROJECTS				\$2,400.00

MOVE IN **\$3,700.26**

GRAND TOTAL **\$218,250.00**

SUMMARY OF CONSTRUCTION COST

Sale:		<u>Between Wolves</u>			Road:		<u>A to B</u>		
<u>Construction -</u>	6+30 0.12	stations miles	<u>Improvement -</u>	204+60 3.88	stations miles	<u>Reconstruction -</u>	0+00 0.00	stations miles	

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>	=		
147+70		154+00	0%			\$350	=	\$2,205.00	TOTAL
								\$2,205.00	\$2,205.00

IMPROVEMENT: CLEARING AND GRUBBING -
Scattering

1.430	acres	@	\$980.00	per acre =	\$1,401.40
					TOTAL CLEARING AND GRUBBING
					\$1,401.40

ROCK

147+70	to	175+90	1,320	cy. of	Crushed	@	\$12.17	per c.y. =	\$16,064.40
0+00	to	94+85	1,500	cy. of	Crushed	@	\$13.32	per c.y. =	\$19,980.00
Spot Rock		149+60 to 177+85, As Marked	590	cy. of	Crushed	@	\$13.32	per c.y. =	\$7,858.80
Recreation Stockpiles		Points K, L, M	120	cy. of	Pit-Run	@	\$10.11	per c.y. =	\$1,213.20
Culvert Backfill		Point N	20	cy. of	Crushed	@	\$13.32	per c.y. =	\$266.40
Culvert Surface Rock		Point N	10	cy. of	Crushed	@	\$13.32	per c.y. =	\$133.20
Leveling		As Marked	100	cy. of	Crushed	@	\$12.36	per c.y. =	\$1,236.00
								TOTAL ROCK	\$46,752.00

SPECIAL PROJECTS

Grade and shape road -	210.90	stations	@	\$15.50	per station	\$3,268.95
Pull Ditch and endhaul to waste area. 119+50 to 143+50, 175+90 to 210+90	59.00	stations	@	\$80.00	each	\$4,720.00
Roll subgrade w/ vibratory roller prior to rocking -	210.90	stations	@	\$13.20	per station	\$2,783.88
Grass seed and fertilize -	1.40	acres	@	\$220.00	per acre	\$308.00
						TOTAL SPECIAL PROJECTS
						\$11,080.83

GRAND TOTAL	\$61,439.23
--------------------	--------------------

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Between Wolves</u>		Road:	<u>C to D</u>				
Construction -	0+00 0.00	stations miles	Improvement -	0+00 0.00	stations miles	Reconstruction -	84+00 1.59	stations miles
RECONSTRUCTION: CLEARING AND GRUBBING -								
Scattering			2.310	acres @	\$1,500.00	per acre =	\$3,465.00	
								\$3,465.00
RECONSTRUCTION: EXCAVATION -								
Road Earthwork			84.00	sta. @	\$120.00	per sta. =	\$10,080.00	
								\$10,080.00
CULVERTS - MATERIALS & INSTALLATION								
	<u>Culverts</u>							
	200	LF of 18"	<u>\$3,500.00</u>			180	LF of 24"	\$4,860.00
			\$3,500.00					\$4,860.00
	<u>Culvert Stakes & Markers</u>							
	8	markers	<u>\$64.00</u>					
			\$64.00					TOTAL CULVERTS
								\$8,424.00
ROCK								
0+00 to	84+09	4,410	cy. of	Crushed	@	\$13.34	per c.y. =	\$58,829.40
Fill Rock	30+80	100	cy. of	Crushed	@	\$13.34	per c.y. =	\$1,334.00
Turnaround Rock	52+00	50	cy. of	Crushed	@	\$13.34	per c.y. =	\$667.00
Landing Rock	+40, 74+60, 84+	540	cy. of	Pit-Run	@	\$9.88	per c.y. =	\$5,335.20
								TOTAL ROCK
								\$66,165.60
SPECIAL PROJECTS								
Grade and shape road -			84.00	stations @	\$15.50	per station		\$1,302.00
Roll subgrade w/ vibratory roller prior to rocking -			84.00	stations @	\$13.20	per station		\$1,108.80
Construct landing			3.00	lump sum @	\$250.00			\$750.00
Reconstruct Fill at 30+80			1.00	@	\$550.00	total		\$550.00
Grass seed and fertilize -			1.00	acres @	\$220.00	per acre		\$220.00
Mulching -			1.000	acres @	\$600.00	per acre		<u>\$600.00</u>
								TOTAL SPECIAL PROJECTS
								\$4,530.80
								GRAND TOTAL
								\$92,665.40

SUMMARY OF CONSTRUCTION COST

Sale: Between Wolves

Road: E to F

<u>Construction -</u>	<u>0+00</u>	stations	<u>Improvement -</u>	<u>0+00</u>	stations	<u>Reconstruction -</u>	<u>6+30</u>	stations
	0.00	miles		0.00	miles		0.12	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Scattering	0.170	acres @	\$980.00	per acre =	\$166.60
TOTAL CLEARING AND GRUBBING					\$166.60

RECONSTRUCTION: EXCAVATION -

Road Earthwork	6.30	sta. @	\$100.00	per sta. =	\$630.00
TOTAL EXCAVATION					\$630.00

ROCK

0+00 to	6+30	340	cy. of	Crushed	@	\$13.05	per c.y. =	\$4,437.00
Landing Rock	6+30	180	cy. of	Pit-Run	@	\$9.59	per c.y. =	\$1,726.20
TOTAL ROCK								\$6,163.20

SPECIAL PROJECTS

Grade and shape road -	6.30	stations @	\$15.50	per station	\$97.65
Roll subgrade w/ vibratory roller prior to rocking -	6.30	stations @	\$13.20	per station	\$83.16
Construct landing -	1.00	lump sum @	\$250.00		\$250.00
Grass seed and fertilize -	1.00	acres @	\$220.00	per acre	\$220.00
TOTAL SPECIAL PROJECTS					\$650.81

GRAND TOTAL	\$7,610.61
--------------------	-------------------

SUMMARY OF CONSTRUCTION COST

Sale: **Between Wolves**

Road: **G to H**

<u>Construction -</u>	4+50	stations	<u>Improvement -</u>	0+00	stations	<u>Reconstruction -</u>	0+00	stations
	0.09	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>	=		
0+00		4+50	0%		outslope	\$200	=	\$900.00	
								TOTAL	\$900.00

ROCK									
0+00	to	4+50	250	cy. of	Crushed	@	\$13.53	per c.y.=	\$3,382.50
Landing Rock									
		4+50	180	cy. of	Pit-Run	@	\$10.07	per c.y.=	\$1,812.60
								TOTAL ROCK	\$5,195.10

SPECIAL PROJECTS									
Grade and shape road -					4.50	stations @	\$15.50	per station	\$69.75
Roll subgrade w/ vibratory roller prior to rocking -					4.50	stations @	\$13.20	per station	\$59.40
								TOTAL SPECIAL PROJECTS	\$129.15

GRAND TOTAL **\$6,224.25**

SUMMARY OF CONSTRUCTION COST

Sale: Between Wolves

Road: I to J

<u>Construction -</u>	<u>10+00</u>	stations	<u>Improvement -</u>	<u>0+00</u>	stations	<u>Reconstruction -</u>	<u>10+30</u>	stations
	0.19	miles		0.00	miles		0.20	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist. To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>			
10+30		12+70	65%	0.5		\$2,204	=		\$5,289.60
12+70		15+00	100%	0.5		\$6,204	=		\$14,269.20
15+00		20+30	40%	0.75		\$243	=		\$1,287.90
TOTAL									\$20,846.70

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.138	acres @	\$660.00	per acre =	\$91.08
Scattering	0.280	acres @	\$980.00	per acre =	\$274.40
TOTAL CLEARING AND GRUBBING					\$365.48

RECONSTRUCTION: EXCAVATION -

Road Earthwork	10.30	sta. @	\$100.00	per sta. =	\$1,030.00
Widening	867	cy. @	\$4.00	per c.y. =	\$3,468.00
TOTAL EXCAVATION					\$4,498.00

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	3+00	867	cy. @	\$0.93	per c.y. =	\$806.31	
Spread & compact				867	cy. @	\$0.25	per c.y. =	\$216.75	
TOTAL ENDHAUL									\$1,023.06

ROCK

10+30 to	20+30	550	cy. of	Crushed	@	\$12.68	per c.y. =	\$6,974.00	
0+00 to	10+30	560	cy. of	Crushed	@	\$12.68	per c.y. =	\$7,100.80	
Landing Rock	7+00, 20+30	180	cy. of	Pit-Run	@	\$9.22	per c.y. =	\$1,659.60	
TOTAL ROCK									\$15,734.40

SPECIAL PROJECTS

Grade and shape road -	20.30	stations @	\$15.50	per station	\$314.65
Roll subgrade w/ vibratory roller prior to rocking -	20.30	stations @	\$13.20	per station	\$267.96
Construct landing	2.00	lump sum @	\$250.00		\$500.00
Grass seed and fertilize -	3.00	acres @	\$220.00	per acre	\$660.00
TOTAL SPECIAL PROJECTS					\$1,742.61

GRAND TOTAL **\$44,210.25**

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Crushed	Location:	Sec. 2, T1N, R8W, W.M.
Sale:	Between Wolves	Road:	8880 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage:	1.16	Total Truck Loads:	8880 c.y.
Drill Pct.:	80%	In Place Total:	6343 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburder in Waste Area, spread and compact.				\$2,892.14
Drill & Shoot:	\$2.50 /cu.yd.	x	5074 cu.yds.	= \$12,685.00
Rip Rock:	\$1.90 /cu.yd.	x	1269 cu.yds.	= \$2,411.10
Push Rock:	\$0.70 /cu.yd.	x	8880 cu.yds.	= \$6,216.00
Load Crusher:	\$0.70 /cu.yd.	x	8880 cu.yds.	= \$6,216.00
Crush Rock:	\$2.50 /cu.yd.	x	8880 cu.yds.	= \$22,200.00
Load Dump Truck:	\$0.70 /cu.yd.	x	8880 cu.yds.	= \$6,216.00
Subtotal				\$58,836.24

Move In/Set-up Crusher				\$1,800.00
Move In and set up Drill and Compressor	1	@	\$532.45	= \$532.45
Move in Roller and Compactor	1	@	\$532.45	= \$532.45
Move in Grader	1	@	\$277.40	= \$277.40
Move in D-8	0	@	\$1,150.59	= \$0.00
Move in Loader	1	@	\$970.39	= \$970.39
Move in Excavator	1	@	\$1,292.27	= \$1,292.27
Move in Trucks	4	@	\$174.26	= \$697.04
Subtotal				\$6,102.00

Base Cost=	\$7.31	Per Cu.Yd.	TOTAL PRODUCTION COSTS \$64,938.24
------------	--------	------------	---

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST		
A to B 14770 17590 (Crushed)	2.41	2.45	7.31	12.17	1320	\$16,064.40		
A to B Recreation Stockpiles (Pit-Run)	3.81	1.10	5.20	10.11	120	\$1,213.20		
A to B Leveling (Crushed)	2.60	2.45	7.31	12.36	100	\$1,236.00		
C to D 0 8409 (Crushed)	3.58	2.45	7.31	13.34	4410	\$58,829.40		
C to D Fill Rock (Crushed)	3.58	2.45	7.31	13.34	100	\$1,334.00		
C to D Turnaround Rock (Crushed)	3.58	2.45	7.31	13.34	50	\$667.00		
C to D Landing Rock (Pit-Run)	3.58	1.10	5.20	9.88	540	\$5,335.20		
E to F 0 630 (Crushed)	3.29	2.45	7.31	13.05	340	\$4,437.00		
E to F Landing Rock (Pit-Run)	3.29	1.10	5.20	9.59	180	\$1,726.20		
G to H 0 450 (Crushed)	3.77	2.45	7.31	13.53	250	\$3,382.50		
G to H Landing Rock (Pit-Run)	3.77	1.10	5.20	10.07	180	\$1,812.60		
I to J 1030 2030 (Crushed)	2.92	2.45	7.31	12.68	550	\$6,974.00		
I to J 0 1030 (Crushed)	2.92	2.45	7.31	12.68	560	\$7,100.80		
I to J Landing Rock (Pit-Run)	2.92	1.10	5.20	9.22	180	\$1,659.60		
					Total C.Y.	8880	Sub Total	\$111,771.90
TOTAL ROCKING COSTS \$111,771.90								

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Stockpile	Location:	Sec.30 , T1N, R7W, W.M.
Sale:	Between Wolves	Road:	2120 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	2120 c.y.
Drill Pct.:	0%	In Place Total:	1514 c.y.

Load Dump Truck: \$0.70 /cu.yd. x 2120 cu.yds. = \$1,484.00
Subtotal \$1,484.00

Move in Loader	1	@	\$970.39	=	\$970.39
Move in Trucks	4	@	\$174.26	=	\$697.04
Move in Water Truck	1	@	\$204.83	=	\$204.83
					Subtotal \$1,872.26

Base Cost= TOTAL PRODUCTION COSTS \$3,356.26
\$1.58 Per Cu.Yd.

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
A to B 0 9485 (Crushed)	9.29	2.45	1.58	13.32	1500	\$19,980.00
A to B Spot Rock (Crushed)	9.29	2.45	1.58	13.32	590	\$7,858.80
A to B Culvert Backfill (Crushed)	9.29	2.45	1.58	13.32	20	\$266.40
A to B Culvert Surface Rock (Crushed)	9.29	2.45	1.58	13.32	10	\$133.20
				Total C.Y.	2120	Sub Total \$28,238.40

TOTAL ROCKING COSTS \$28,238.40

Move-In Calculations for Project Work not Involving Rocking/Pit Work

Sale: Between Wolves

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
36.0	Pavement	30
0.0	Main Lines	7
13.0	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Excavators (Large)	\$1,319.87	1	\$44.80	0.00	1.50	1.5	\$67.20	\$1,387.07
1	Tractor (D8)	\$1,205.79	2	\$15.10	0.00	1.50	1.5	\$22.65	\$1,228.44
4	Dump Truck (10 cy +)	\$889.11		\$2.85	0.00	1.50	1.5	\$17.10	\$906.21
1	Water Truck (1500 Gal)	\$174.26		\$2.85	0.00	1.50	1.5	\$4.28	\$178.54
TOTAL MOVE-IN COSTS:									\$3,700.26



OREGON DEPARTMENT OF FORESTRY CRUISE REPORT *Between Wolves*

1. **Type of Sale**
Areas 1 & 2: Modified Clearcut, Recovery
2. **Legal Description**
Portions of Sections 11, 12, and 14, T1N, R8W, W.M., Tillamook County, Oregon.
3. **Sale Acreage**
Sale acreage was determined by GPS and orthophotographs along with GIS.

	ACRES	
	<u>Gross</u>	<u>Net</u>
Area 1 (Modified Clearcut)	120	100
Area 2 (Modified Clearcut)	138	117

Gross Acres

Area within the Timber Sale Boundary signs

Net acres

Used for calculating the advertised volume.

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

4. **Cruising Procedures** **A. Cruise Method**

Area 1 has 19 plots cruised for the 100 harvest acres and Area 2 has 19 plots cruised for 117 harvest acres. All plots were full cruise plots at a spacing of 700' x 350'. All conifers 8 inches DBH and greater containing 20 net board feet and all hardwoods 10 inches DBH and greater containing 30 net board feet were recorded on all plots. Species were recorded on all trees and measured for merchantable bole height, diameter, and form factor. Merchantable heights were recorded to 6" and 7" outside bark for conifers and hardwoods respectively.

B. Plot size

A basal area factor of 40 was used for all plots. The point of observation is 4.5 feet.

C. Grading System

All species were graded using Columbia River Log Scaling and Grading Bureau rules favoring a 40' log.

5. Computation Procedure

The volumes and statistics for the timber cruise were computed using SuperACE 2008, developed by Atterbury Consultants, Inc. SuperACE has calculated basal areas, advertised volumes, volume summaries, log stock tables, and stand tables for each species and type. The standard error and the coefficient of variation for the cruise based on net board feet per acre on Area 1 is 10.9% and 46.1% and Area 2 is 12.6% and 53.5% respectively.

6. Hidden Defect and Breakage

An 8% reduction was applied to conifers and a 12% reduction to hardwood volumes for hidden defect and breakage. These numbers are designed to reflect the wind and snow damage in this stand. This was in addition to visual defect deducted during the cruise.

7. Timber Description

The sale areas were burned during the 1950's and planted and seeded in the mid 1950's. See attached stand tables and volume summary for a quantitative evaluation of estimated timber volumes and snags per acre.

Sale Area – Species	DBH	Merchantable Bole Height	Merchantable Top
Area 1: Douglas-fir	14	65	5"
Area 1: Alder	12	40	6"
Area 2: Douglas-fir	13	55	5"
Area 2: Alder	12	30	6"

8. Cruiser Names/Dates

Service Contract 2007
ODF Staff 2008

9. Revenue Distribution

FDF: 100%
Tax Code: 56 (100%)
Deed Numbers: 138 and 161

10. Attachments

Volume Summaries
Stand Table Summary
Log Stock Tables
Logging Plan Map

11. Stand and Log Stock Tables Species Key

DF – Douglas-fir
RA – Red alder
WH – Western hemlock
OC- Other Conifer (Snags)

TC		TLOGSTVB		Log Stock Table - MBF															
Project:										BTWNWLVE									
T01N R08W S12 TSALE										T01N R08W S12 TSAL									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1										
01N	08W	12	AREA 1	SALE	100.00	19	106	Date	9/19/2014										
									Time	9:38:36AM									
Spp	T	So	Gr	Log	Gross	%	Net	%	Net Volume by Scaling Diameter in Inches										
									MBF	Def	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15
DF	CO	2	32		50	8.0	46	2.5						17	10		19		
DF	CO	2	40		355	8.0	327	17.5						22	185	44	75		
DF	CO	3	21		6	8.0	6	.3											
DF	CO	3	22		3	8.0	3	.1			3								
DF	CO	3	23		8	8.0	7	.4						7					
DF	CO	3	24		2	8.0	2	.1			2								
DF	CO	3	32		196	9.1	179	9.6				29	84	30	36				
DF	CO	3	34		5	8.0	5	.3			5								
DF	CO	3	35		18	8.0	17	.9											
DF	CO	3	40		973	8.6	890	47.7				184	433	253	20				
DF	CO	4	11																
DF	CO	4	12		1	8.0	1	.1			1								
DF	CO	4	13		3	8.0	3	.1											
DF	CO	4	14		4	8.0	3	.2			3								
DF	CO	4	16		12	8.0	11	.6			11								
DF	CO	4	17		3	8.0	3	.1			3								
DF	CO	4	18		2	8.0	2	.1			2								
DF	CO	4	19		10	8.0	9	.5			9								
DF	CO	4	20		8	8.0	7	.4			7								
DF	CO	4	21		5	8.0	5	.3			5								
DF	CO	4	22		5	8.0	4	.2			4								
DF	CO	4	23		9	8.0	8	.4			8								
DF	CO	4	24		47	8.0	43	2.3			15	11	12	6					
DF	CO	4	25		16	8.0	14	.8			14								
DF	CO	4	26		34	8.0	31	1.7			31								
DF	CO	4	27		4	8.0	3	.2			3								
DF	CO	4	28		22	8.0	20	1.1			11			9					
DF	CO	4	29		30	8.0	28	1.5			28								
DF	CO	4	30		36	8.0	33	1.8			33								
DF	CO	4	31		14	8.0	13	.7			13								
DF	CO	4	32		34	8.0	31	1.7			31								
DF	CO	4	33		19	8.0	18	.9			18								
DF	CO	4	34		3	8.0	2	.1			2								
DF	CO	4	36		5	8.0	5	.3			5								
DF	CO	4	37		22	8.0	20	1.1			20								
DF	CO	4	40		62	8.0	57	3.0			35	22							
DF	CO	4	41		10	8.0	9	.5			9								
DF	Totals				2,035	8.4	1,864	85.1			332	245	554	318	266	54	75	19	
RA	H	2	32		15	12.0	13	4.4						13					
RA	H	3	32		14	12.0	12	4.1					12						
RA	H	4	14		4	12.0	3	1.2				3							
RA	H	4	19		2	12.0	2	.6				2							
RA	H	4	30		19	12.0	17	5.6				17							
RA	H	2	28		19	12.0	16	5.5						16					
RA	H	2	40		41	14.1	35	11.8						35					
RA	H	3	26		17	12.0	15	4.9						15					
RA	H	3	40		39	12.0	35	11.6						35					
RA	H	4	14		10	12.0	8	2.8				2	6						
RA	H	4	15		5	12.0	4	1.4				4							

Log Stock Table - MBF
Project: BTWNWLVE

T01N R08W S12 TSALE

T01N R08W S12 TSAL

Twp Rge Sec Tract Type Acres Plots Sample Trees Page
01N 08W 12 AREA 1 SALE 100.00 19 106 Date 9/19/2014
Time 9:38:36AM

Spp	T	S	So	Gr	Log	Gross	%	Net	%	Net Volume by Scaling Diameter in Inches										
										MBF	Def	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15
RA	H	4	16			9	12.0	8	2.7				8							
RA	H	4	18			8	12.0	7	2.3			7								
RA	H	4	21			3	12.0	3	.9			3								
RA	H	4	23			18	12.0	16	5.5			16								
RA	H	4	26			3	12.0	3	.9			3								
RA	H	4	27			4	12.0	4	1.2			4								
RA	H	4	28			12	12.0	10	3.4			10								
RA	H	4	31			10	12.0	9	3.1			9								
RA	H	4	36			23	12.0	20	6.9			20								
RA	H	4	37			23	12.0	20	6.9			20								
RA	H	4	40			42	12.0	37	12.4			37								
RA		Totals				339	12.3	297	13.6			157	26	62	51					
WH	CO	3	32			30	10.0	27	89.3			10		17						
WH	CO	4	24			4	10.0	3	10.7		3									
WH		Totals				33	10.0	30	1.4		3	10		17						
Total All Species						2,407	8.9	2,191	100.0		335	403	589	381	335	54	75	19		

TC		TLOGSTVB		Log Stock Table - MBF															
Project:										BTWNWLVE									
T01N R08W S12 TSALE										T01N R08W S12 TSAL									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1										
01N	08W	12	AREA 2	SALE	117.00	19	104	Date	9/19/2014										
								Time	9:38:36AM										
Spp	T	So	Gr	Log	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
DF		CO	2	20	36	8.0	33	1.8				15		19					
DF		CO	2	40	160	11.7	141	7.5				40	79	22					
DF		CO	3	32	60	8.0	55	2.9			38		17						
DF		CO	3	40	1,040	8.6	950	50.7			163	305	351	108	23				
DF		CO	4	13	6	8.0	6	.3		6									
DF		CO	4	15	4	8.0	4	.2		4									
DF		CO	4	17	33	16.8	27	1.4		27									
DF		CO	4	18	15	17.6	12	.7		12									
DF		CO	4	19	6	8.0	6	.3		6									
DF		CO	4	20	17	8.0	16	.8		16									
DF		CO	4	21	12	8.0	11	.6		3		7							
DF		CO	4	22	49	8.0	45	2.4		9		12	24						
DF		CO	4	23	24	8.0	22	1.2		22									
DF		CO	4	24	108	17.0	89	4.8		34	12	26	17						
DF		CO	4	25	31	8.0	29	1.5		29									
DF		CO	4	26	35	8.0	32	1.7		17	15								
DF		CO	4	27	53	8.0	49	2.6		49									
DF		CO	4	28	33	8.0	30	1.6		30									
DF		CO	4	29	22	8.0	20	1.1		20									
DF		CO	4	30	24	8.0	22	1.2		22									
DF		CO	4	31	5	8.0	5	.3		5									
DF		CO	4	32	3	8.0	3	.2		3									
DF		CO	4	33	13	8.0	12	.7		12									
DF		CO	4	34	29	8.0	27	1.4		27									
DF		CO	4	35	43	8.0	40	2.1		40									
DF		CO	4	36	27	8.0	25	1.3		25									
DF		CO	4	37	15	8.0	14	.7		14									
DF		CO	4	38	19	8.0	17	.9		17									
DF		CO	4	40	145	9.1	132	7.0		41	73	18							
DF		Totals			2,068	9.3	1,875	92.1		490	302	368	464	188	63				
RA		H	2	40	17	12.0	15	9.5					15						
RA		H	3	20	16	24.6	12	7.5					12						
RA		H	4	17	14	12.0	12	7.7			12								
RA		H	4	19	6	12.0	6	3.4			6								
RA		H	4	20	13	12.0	11	6.8				11							
RA		H	4	21	13	12.0	11	6.8				11							
RA		H	4	23	5	12.0	5	2.9			5								
RA		H	4	24	7	12.0	6	3.8			6								
RA		H	4	26	14	12.0	12	7.5				12							
RA		H	4	29	9	12.0	8	5.0			8								
RA		H	4	32	21	31.6	14	8.8				14							
RA		H	4	40	57	14.4	49	30.2			34	15							
RA		Totals			192	15.9	161	7.9			70	64	12	15					
Total All Species					2,260	9.9	2,036	100.0		490	372	431	476	203	63				

TC		Stand Table Summary														
TSTNDSUM		Project BTWNWLV														
T01N R08W S12 TSALE											T01N R08W S12 TSALE					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
01N	08W	12	AREA 1	SALE	100.00	19	106	Date:	09/19/2014							
								Time:	9:40:33AM							
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF
DF		8	2	79	23	12.062	4.21	6.03	3.0	20.0	.56	18	121	56	18	12
DF		9	1	83	65	4.765	2.11	4.77	7.8	30.0	1.05	37	143	105	37	14
DF		10	5	85	78	19.300	10.53	27.02	8.9	38.6	6.82	239	1,042	682	239	104
DF		11	3	84	74	9.570	6.32	12.76	11.9	42.5	4.32	152	542	432	152	54
DF		12	9	84	106	24.125	18.95	48.25	13.4	54.4	18.37	645	2,627	1,837	645	263
DF		13	9	83	87	20.742	18.95	36.92	15.3	54.8	16.19	567	2,025	1,619	567	202
DF		14	7	85	105	14.083	14.74	30.13	17.2	70.8	14.75	517	2,132	1,475	517	213
DF		15	5	84	88	8.698	10.53	13.96	20.5	83.7	8.18	287	1,169	818	287	117
DF		16	7	82	103	10.554	14.74	22.62	22.8	82.7	14.69	515	1,870	1,469	515	187
DF		17	6	83	101	8.096	12.63	16.19	26.7	99.8	12.34	433	1,616	1,234	433	162
DF		18	5	84	122	5.957	10.53	16.68	25.5	97.9	12.13	425	1,632	1,213	425	163
DF		19	6	83	111	6.415	12.63	17.11	27.4	103.8	13.39	469	1,775	1,339	469	177
DF		20	3	83	125	2.945	6.32	8.84	29.7	119.0	7.47	262	1,052	747	262	105
DF		22	1	85	106	.798	2.11	2.39	33.0	140.0	2.25	79	335	225	79	33
DF		23	1	85	79	.730	2.11	1.46	42.5	135.0	1.77	62	197	177	62	20
DF		24	3	85	116	2.039	6.32	6.12	41.7	182.2	7.28	255	1,115	728	255	111
DF		25	2	83	129	1.261	4.21	3.14	41.6	176.9	3.72	130	555	372	130	56
DF		32	1	77	119	.377	2.11	.75	92.2	420.0	1.98	70	317	198	70	32
DF		42	1	99	17	.219	2.11									
DF		48	1	99	18	.168	2.11									
DF	Totals	78	83	90		152.903	164.21	275.13	18.8	73.6	147.27	5,161	20,263	14,727	5,161	2,026
RA		9	1	80	72	4.765	2.11	4.77	9.6	40.0	1.25	46	191	125	46	19
RA		10	6	80	64	23.160	12.63	23.16	11.2	43.3	7.17	259	1,004	717	259	100
RA		12	1	82	75	2.681	2.11	2.68	21.1	70.0	1.55	56	188	155	56	19
RA		13	2	76	57	4.568	4.21	9.14	8.4	30.0	2.11	77	274	211	77	27
RA		14	1	80	67	1.969	2.11	3.94	13.3	45.0	1.44	52	177	144	52	18
RA		16	1	80	84	1.508	2.11	3.02	21.2	75.0	1.76	64	226	176	64	23
RA		17	2	82	76	2.671	4.21	5.34	23.1	85.0	3.39	123	454	339	123	45
RA		19	3	82	79	3.208	6.32	6.42	31.8	101.7	5.60	204	652	560	204	65
RA		20	1	82	85	.965	2.11	1.93	38.3	110.0	2.03	74	212	203	74	21
RA	Totals	18	80	67		45.494	37.89	60.38	15.8	55.9	26.30	955	3,378	2,630	955	338
WH		18	1	82	114	1.191	2.11	3.57	23.5	93.3	2.69	84	334	269	84	33
WH	Totals	1	82	114		1.191	2.11	3.57	23.5	93.3	2.69	84	334	269	84	33
OC		18	1	88	90	1.191	2.11									
OC		23	1	86	114	.730	2.11									
OC		30	1	89	20	.429	2.11									
OC		35	1	90	37	.315	2.11									
OC		40	2	89	53	.482	4.21									
OC		45	3	89	51	.572	6.32									
OC	Totals	9	88	71		3.719	18.95									
Totals		106	83	85		203.308	223.16	339.09	18.3	70.7	176.26	6200	23,975	17,626	6,200	2,397

TC		TSTNDSUM											Stand Table Summary			
Project													BTWNWLV			
T01N R08W S12 TSALE											T01N R08W S12 TSALE					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
01N	08W	12	AREA 2	SALE	117.00	19	104	Date:	09/19/2014							
								Time:	9:40:33AM							
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF
DF		7	1	85	62	7.877	2.11	7.88	5.7	30.0	1.27	45	236	148	52	28
DF		8	2	81	55	12.062	4.21	12.06	5.8	25.0	2.00	70	302	234	82	35
DF		9	6	83	79	28.592	12.63	33.36	8.6	35.7	8.22	288	1,191	962	337	139
DF		10	2	87	96	7.720	4.21	15.44	7.3	32.5	3.20	112	502	375	131	59
DF		11	6	84	94	19.140	12.63	25.52	11.8	47.5	8.58	301	1,212	1,004	352	142
DF		12	9	84	88	24.125	18.95	48.25	11.2	43.3	15.37	539	2,091	1,798	631	245
DF		13	3	83	69	6.852	6.32	11.42	13.6	46.0	4.43	155	525	518	182	61
DF		14	4	84	101	7.877	8.42	15.75	18.5	73.8	8.32	292	1,162	973	341	136
DF		15	7	84	79	12.009	14.74	25.73	15.7	59.3	11.54	405	1,527	1,350	474	179
DF		16	10	85	83	15.078	21.05	27.14	21.2	75.0	16.38	574	2,036	1,917	672	238
DF		17	7	84	85	9.349	14.74	18.70	24.1	84.3	12.84	450	1,576	1,502	527	184
DF		18	7	83	90	8.339	14.74	16.68	28.5	100.0	13.53	475	1,668	1,583	556	195
DF		19	4	84	84	4.277	8.42	8.55	30.2	102.5	7.35	258	877	860	302	103
DF		20	4	85	87	3.860	8.42	8.68	29.8	107.8	7.38	259	936	863	303	110
DF		21	4	86	83	3.501	8.42	7.00	37.4	123.8	7.46	262	867	873	306	101
DF		22	1	82	95	.798	2.11	1.60	45.7	140.0	2.08	73	223	243	85	26
DF		23	2	83	97	1.459	4.21	2.92	50.4	167.5	4.19	147	489	490	172	57
DF		45	1	89	36	.191	2.11									
DF		50	1	89	20	.154	2.11									
DF	Totals	81	84	83		173.261	170.53	286.69	16.4	60.8	134.14	4,706	17,419	15,694	5,506	2,038
RA		8	1	81	44	6.031	2.11	6.03	4.6	20.0	.77	28	121	90	33	14
RA		9	2	77	31	9.531	4.21									
RA		10	1	76	21	3.860	2.11									
RA		11	1	79	36	3.190	2.11									
RA		12	4	79	58	10.722	8.42	10.72	12.4	42.5	3.65	133	456	427	155	53
RA		14	4	81	72	7.877	8.42	11.82	17.5	55.0	5.69	207	650	666	242	76
RA		16	1	80	74	1.508	2.11	1.51	8.5	30.0	.35	13	45	41	15	5
RA		17	1	81	67	1.336	2.11	1.34	40.4	110.0	1.48	54	147	173	63	17
RA		25	1	81	70	.618	2.11	.62	92.2	240.0	1.57	57	148	183	67	17
RA	Totals	16	79	49		44.672	33.68	32.03	15.3	48.9	13.51	491	1,567	1,581	574	183
OC		12	1	86	89	2.681	2.11									
OC		20	1	98	17	.965	2.11									
OC		30	1	98	17	.429	2.11									
OC		35	1	67	26	.315	2.11									
OC		45	1	98	17	.191	2.11									
OC		50	2	91	35	.309	4.21									
OC	Totals	7	89	58		4.889	14.74									
Totals		104	83	75		222.822	218.95	318.72	16.3	59.6	147.65	5197	18,986	17,275	6,081	2,221



"STEWARDSHIP IN FORESTRY"

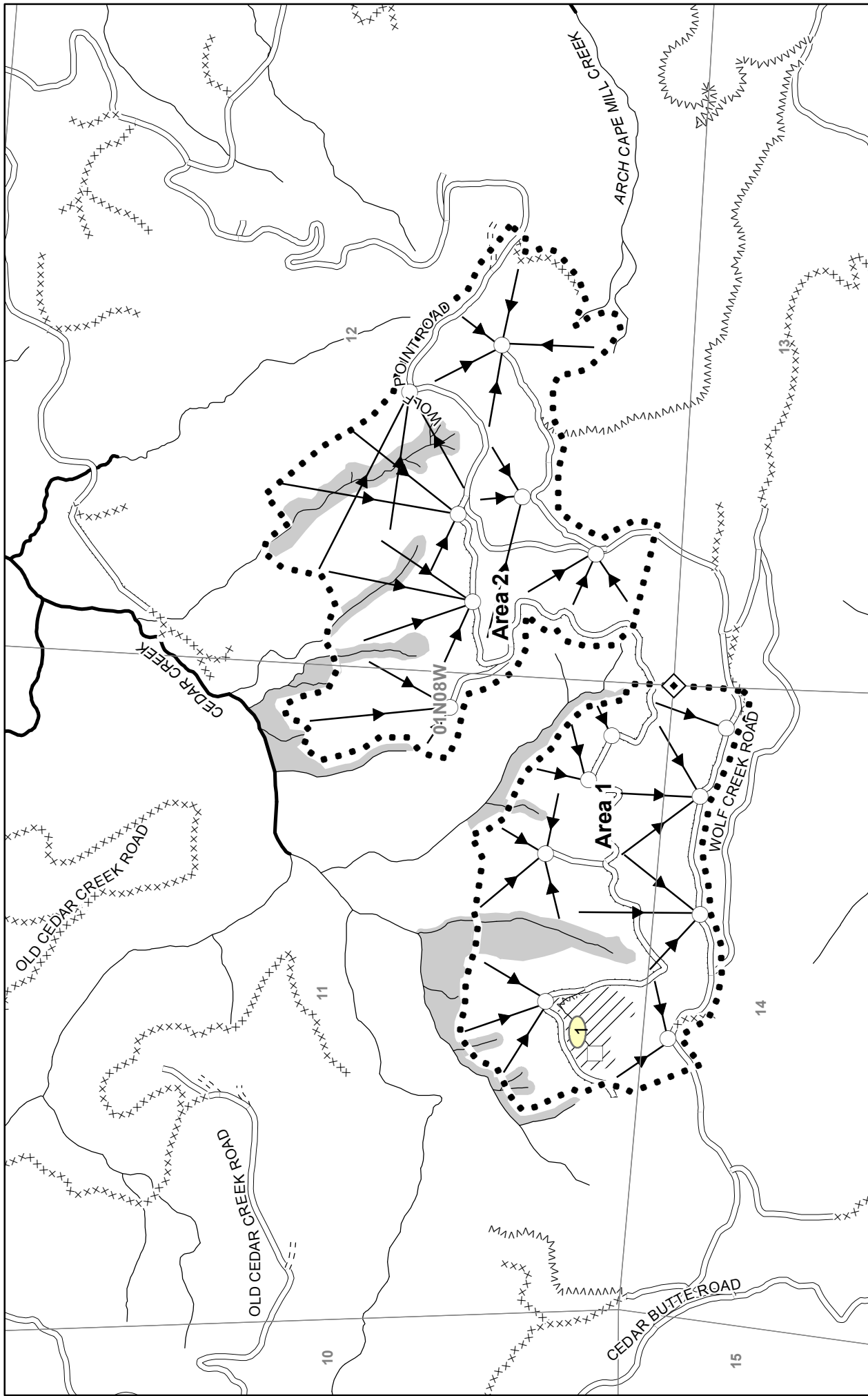
Between Wolves

Volume Summary

Area 1-Modified Clearcut				
100 acres				
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	20.4	2035	8%	1864
Alder	3.4	338	12%	297
TOTAL	23.7	2373		2161

Area 2-Modified Clearcut				
117 acres				
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	17.7	2068	8%	1875
Alder	1.6	192	12%	161
TOTAL	19.3	2260		2036

TOTAL SALE VOLUME			217	acres
SPECIES	Cruised Net (MBF)	Net Sale (MBF)		
Douglas-fir	4103	3739		
Alder	530	458		
TOTAL	4633	4197		



Rock source
 ⓧ Rock pile
 Ⓞ Waste area
 Ⓜ Bridge
 Ⓜ Gate
 Ⓜ Survey corner
 Ⓜ Domestic water supply intake
 Ⓜ Truck turn-around
 Ⓜ Helicopter landing zone
 Ⓜ Cultural site

Buffer
 ▨ Non-required thinning
 ▨ Cable yarding
 ▨ Ground yarding
 ▨ Helicopter yarding
 ▨ Downhill yarding
 ▨ Green tree retention area

Restricted area
 ▨ Area boundary
 ▨ Sale boundary
 ▨ Ownership boundary
 ▨ Fish stream
 ▨ Non-fish stream
 ▨ Unsurfaced road
 ▨ Surfaced road
 ▨ Paved road
 ▨ Abandoned road

Swing road
 -A- Non-project road
 ⊗ Blocked road
 // OHV trail
 Non-motorized trail
 - - - Transmission line
 + + + Railroad
 ▸ Cable yarding
 □ Tractor Landing
 ○ Yarder Landing

Logging Plan
 Timber Sale Contract No. 341-15-73
 BETWEEN WOLVES
 Portions of Sections 11, 12, and 14
 T1N, R8W, W.M.,
 Tillamook County, Oregon

1,000 0 1,000 Feet

Type of Operation

Area	Type of Operation	Acres	Gross Net
1	Modified clearcut	120	100
2	Modified clearcut	138	117
Total		258	217

Tillamook District GIS
 9/29/2014
 This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.