



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Green Lantern
Sale 341-09-11

District: Astoria

Date: February 06, 2009

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,344,808.63	\$0.00	\$1,344,808.63
		Project Work:	\$(278,605.00)
		Advertised Value:	\$1,066,203.63



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timber description

Location: Portions of Sections 26, 34, 35, and 36, T5N, R6W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	96
Western Hemlock / Fir	16	0	96

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	5,232	1,890	139	7,261
Western Hemlock / Fir	886	383	68	1,337
Total	6,118	2,273	207	8,598



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comments: Pond Values Used: 4th Quarter Calendar Year 2008.

Log Markets: Mist, Clatskanie, Tillamook, Forest Grove.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost
\$660/MBF = \$870/MBF - \$210/MBF

Red Alder & Other Hardwoods Stumpage Price = Pond Value minus DF
Logging Cost
\$265/MBF = \$475/MBF - \$210/MBF

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to \$700 daily truck cost.

Other Costs (with Profit & Risk to be added):
100% Brand and Paint: \$1/MBF x 8,598 MBF = \$8,598
Additional log loader slash piling:
3 Hours x \$65.00/hour x 16 Landings = \$3,120
TOTAL Other Costs (with Profit and Risk to be added) = \$11,718

Other Costs (No Profit & Risk added):
Excavator Slash Piling: 150 hours x \$120/hr. = \$18,000
Excavator move-in: \$1,890
Waterbar and block dirt road segments after harvest:
\$13.85/station x 31.5 stations = \$436
TOTAL Other Costs (No Profit & Risk added) = \$20,326



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logging conditions

combination#: 1 Douglas - Fir 20.00%
Western Hemlock / Fir 20.00%

yarding distance: Long (1,500 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 6.0 **bd. ft / load:** 3,500
cost / mbf: \$159.24

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

combination#: 2 Douglas - Fir 42.00%
Western Hemlock / Fir 42.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 7.0 **bd. ft / load:** 3,500
cost / mbf: \$136.49

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

combination#: 3 Douglas - Fir 18.00%
Western Hemlock / Fir 18.00%

yarding distance: Short (400 ft) **downhill yarding:** No
logging system: Shovel **Process:** Manual Falling/Delimiting
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 6.0 **bd. ft / load:** 3,500
cost / mbf: \$68.50

machines: Feller Buncher w/ Delimber

combination#: 4 Douglas - Fir 20.00%
Western Hemlock / Fir 20.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Track Skidder **Process:** Manual Falling/Delimiting
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 9.0 **bd. ft / load:** 4,000
cost / mbf: \$95.57

machines: Log Loader (B)
Track Skidder



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logging costs

Operating Seasons:	3.00	Profit Risk:	14.00%
Project Costs:	\$278,605.00	Other Costs (P/R):	\$11,718.00
Slash Disposal:	\$0.00	Other Costs:	\$20,326.00

Miles of Road

Road Maintenance: \$3.49

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.3
Western Hemlock / Fir	\$0.00	3.0	4.0



Timber Sale Appraisal
 Green Lantern
 Sale 341-09-11

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District: Astoria

Date: February 06, 2009

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$120.62	\$3.63	\$1.53	\$49.50	\$1.36	\$24.73	\$0.00	\$5.00	\$2.36	\$208.73
Western Hemlock / Fir									
\$120.62	\$3.63	\$1.53	\$53.22	\$1.36	\$25.25	\$0.00	\$5.00	\$2.36	\$212.97

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$381.45	\$172.72	\$0.00
Western Hemlock / Fir	\$0.00	\$280.80	\$67.83	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	7,261	\$172.72	\$1,254,119.92
Western Hemlock / Fir	1,337	\$67.83	\$90,688.71

Gross Timber Sale Value

Recovery: \$1,344,808.63

Prepared by: Peter Stone

Phone: 503-325-5451

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Green Lantern

NEW CONSTRUCTION:

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Dirt Roads	2A-2B & 2C-2D	31.50	\$10,818
Rocked Roads	3A-3B, 3C-3D, 3E-3F, & 3G-3H	73.3	\$61,100
TOTALS	1.98 miles	104.80	\$71,918

ROAD IMPROVEMENT:

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	I1-I2, I2-I3, I3-I4, I5-I6, & I7-I8	280.95	\$49,682
TOTALS	5.32 miles	280.95	\$49,682

SPECIAL PROJECTS:

Project No. 1

Project Work Road Maintenance	\$680
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GREEN MOUNTAIN QUARRY NOS. 1 & 2 ROCK CRUSHING:

Project No. 2

Quarry #1: Crush 9,715 yds. and stockpile 1,000 yds 1-1/2"-0"	\$85,330
Quarry #2: Crush 5,093 yds. 4"-0"	\$45,522
Totals	\$130,852

ROADSIDE BRUSHING:

Project No. 3

Mechanical Brushing 11.45 Miles and 5.6 Miles (32 Hours) Hand Brushing	\$19,074
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MOVE IN:

	<u>Equipment</u>	<u>Cost</u>
Dozer (D8)		\$1,220
Dump Trucks (12 cy x 3)		\$423
Dump Trucks (20 cy x 1)		\$166
F E Loader (C966)		\$675
Grader (14G)		\$675
Rubber Tire Skidder (C518)		\$622
Vibratory Roller		\$675
Water Truck (2,500 gallon)		\$165
Backhoe (C 580)		\$279
Excavator (C330)		\$1,220
Brush Cutter (Medium) 15' Vertical Reach		\$279
TOTAL		\$6,399

GRAND TOTAL

\$278,605

Compiled By: P.Stone

Date: 12/18/2008

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Green Lantern (Designed Roads) NEW CONSTRUCTION: 68.60 STATIONS
 ROADS: 3A-3B (62+90), & 3C-3D (5+70) IMPROVEMENT: STATIONS
1.30 MILES
0.00 MILES

CLEARING & GRUBBING Method	Acres/amount	Rate	=	Cost
Scatter Outside of RW 3A-3B & 3C-3D	7.5	\$1,161.00	=	\$8,707.50
SUB TOTAL FOR CLEARING & GRUBBING				\$8,708

EXCAVATION Material	Cy/amount/station	Rate	=	Cost
Common drift excavation \$\$/cy	4.992	\$1.60	=	\$7,987.20
Embankment compaction \$\$/cy	5.048	\$0.60	=	\$3,028.80
Cut Slope Rounding \$\$/Sta	22	\$37.00	=	\$814.00
Rip 1.9 stations rock to develop sub-grade 3A-3B	550	\$3.70	=	\$2,035.00
Landing Construction \$\$/landing Stations 36+20, 41+50, 44+20, and 59+70 Road Segment 3A to 3B & Point 3D.	5	\$338.00	=	\$1,690.00
SUB TOTAL FOR EXCAVATION				\$15,555

CULVERT MATERIALS AND INSTALLATION Location	Dia/type	Lineal ft.	Rate	Cost
3A to 3B	18"CPP	50	\$17.64	\$882.00
3A to 3B	18"CPP	40	\$17.64	\$705.60
3A to 3B	18"CPP	40	\$17.64	\$705.60
3A to 3B	18"CPP	35	\$17.64	\$617.40
3A to 3B	18"CPP	35	\$17.64	\$617.40
3C to 3D	18"CPP	30	\$17.64	\$529.20
Subtotal Culverts & Installation:				\$4,057.20

Other/miscellaneous:	Description	Quantity	Rate	Cost
	Labor 4 hrs. @\$38.00 hr. for waste area	4	\$38.00	\$152.00
	Straw bales @\$10.00 ea. X 20 bales for waste area	20	\$10.00	\$200.00
	Dissipator Rock Placement @\$144.00 hr. x 3 dissipators x 2hrs. ea	6	\$144.00	\$864.00
	Installed 6' Fiberglass Markers @\$18.00 each	6	\$18.00	\$108.00
SUB TOTAL FOR WASTE AREA TREATMENT, CULVERT MATERIALS & INSTALLATION				\$1,324
Grand Total:				\$29,644

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Green Lantern (Field Design) NEW CONSTRUCTION: 31.50 STATIONS 0.60 MILES
 ROAD: 2A to 2B (17.3), 2C to 2D (14.2) IMPROVEMENT: STATIONS 0.00 MILES
 14' Outslopped Dirt Spurs

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	3.0	x	\$1,161.00	=	\$3,483.00
SUB TOTAL FOR CLEARING & GRUBBING					\$3,483

Material	Sta/amount	x	Rate	=	Cost
Balanced Construction	16.00	x	\$106.00	=	\$1,696.00
Common (Drift Earth up to 200') \$\$/sta.	15.50	x	\$165.00	=	\$2,557.50
Landing Construction \$\$/handing	2	x	\$338.00	=	\$676.00
2B and 2D					
SUB TOTAL FOR EXCAVATION					\$4,930

Subgrade prep:	Description	Stations/amount	x	Rate/ sta/amt	Cost
Grade, 14' Outslope		31.50	x	\$15.93	\$501.80
Waterbar		31.50	x	\$13.85	\$436.28
SUB TOTAL FOR SUBGRADE PREP					\$938

CULVERT MATERIALS AND INSTALLATION	Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost			
	2A to 2B: 7+10	18" CPP	30	\$17.64	\$529.20						
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION									\$529		
Other/miscellaneous:											
Description									Quantity	Rate	Cost

GRAND TOTAL FOR EXCAVATION & CULVERTS \$10,818

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Green Lantern (Field Design)
 ROAD: 3E to 3F (3.00) and 3G to 3H (1.70)

NEW CONSTRUCTION: 4.70 STATIONS
 IMPROVEMENT: STATIONS

0.09 MILES
 0.00 MILES

CLEARING & GRUBBING		Acres/amount	x	Rate	=	Cost
Method						
Scatter Outside of RM		0.5	x	\$1,161.00	=	\$580.50
SUB TOTAL FOR CLEARING & GRUBBING						\$581

EXCAVATION		Sta/amount	x	Rate	=	Cost
Material						
Balanced Construction		2	x	\$106.00	=	\$212.00
Common (Drift Earth up to 200')	\$\$/sta.	2.7	x	\$165.00	=	\$445.50
Landing Construction	\$\$/landing 3F and 3H	2	x	\$338.00	=	\$676.00
SUB TOTAL FOR EXCAVATION						\$1,334

CULVERT MATERIALS AND INSTALLATION		Lineal ft.	Rate	No. bands	Rate	Cost
Location	Dia/type					
Other/miscellaneous:						
	Description	Quantity	Rate			Cost
	Culvert markers:					\$0.00
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION						\$0
Subtotal						\$1,914

Project No. 1 New Road Construction

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Green Lantern
 ROAD: 3A-3B (62+60), 3C-3D (6+70), 3E-3F (3+60), 3G-3H (1+70)

NEW CONSTRUCTION: 73.30 STATIONS
 IMPROVEMENT: 0.00 STATIONS

1.39 MILES
 0.00 MILES

Subgrade prep:	Description	Stations/amount	Rate/ Sta/amt	Cost
Grade, Shape and Ditch 16'		73.30	x	\$1,579.62
Subgrade Compaction		73.30	x	\$1,284.22
				\$2,863.83

ROAD SEGMENT			POINT TO POINT			Sta. to Sta.			TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost
Application	Rock Size and Type	Location	3A to 3B	3C to 3D	3E to 3F	3G to 3H	0+00 to 62+60	62+60 to 6+70			
Base Rock	4'-0" Crushed	0+00 to 62+60	station	station	station	station	62.90	62.90	3,963	\$2.57	\$10,184
Traction Rock	1 1/2"-0" Crushed	12+00 to 60+00	station	turnout	turnout	turnout	13	48	624	\$2.57	\$1,604
Turnouts	4'-0" Crushed	various	turnout	turnout	turnout	turnout	24	13	312	\$2.57	\$802
Curve Widening	1 1/2"-0" Crushed	various	turnout	turnout	turnout	turnout	10	7	70	\$2.57	\$180
Curve Widening	4'-0" Crushed	various	turnout	turnout	turnout	turnout	10	7	116	\$2.57	\$298
Turnaround	4'-0" Crushed	Sta. 59+70, 62+10	TA	TA	TA	TA	24	2	48	\$2.57	\$123
Junction	4'-0" Crushed	3C, 3E, 3G	junction	junction	junction	junction	10	3	30	\$2.57	\$231
Junction	1 1/2"-0" Crushed	3C, 3E, 3G	junction	junction	junction	junction	10	3	30	\$2.57	\$77
Dissipator	24"-6" Riprap	N/A	dissipator	dissipator	dissipator	dissipator	10	3	30	\$3.90	\$117
Landing	6'-0" Pit-run	Sta. 38+20, 41+50	landing	landing	landing	landing	50	2	100	\$3.90	\$390
Landing	6'-0" Pit-run	Sta. 44+20, 59+70	landing	landing	landing	landing	80	2	160	\$3.90	\$624
Total Rock for Road Segment:									5,591		\$14,754

ROAD SEGMENT			POINT TO POINT			Sta. to Sta.			TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost
Application	Rock Size and Type	Location	3C to 3D	3E to 3F	3G to 3H	0+00 to 3+60	3+60 to 6+70				
Base Rock	4'-0" Crushed	0+00 to 6+70	station	turnout	turnout	station	5.70	285	285	\$2.57	\$732
Turnout	4'-0" Crushed	N/A	turnout	turnout	turnout	turnout	1	22	22	\$2.57	\$57
Turnaround	4'-0" Crushed	N/A	landing	landing	landing	landing	22	1	22	\$2.57	\$57
Landing	6'-0" Pit-run	3D	landing	landing	landing	landing	80	1	80	\$3.90	\$312
Total Rock for Road Segment:									409		\$1,158

ROAD SEGMENT			POINT TO POINT			Sta. to Sta.			TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost
Application	Rock Size and Type	Location	3E to 3F	3G to 3H	3I to 3J	0+00 to 3+60	3+60 to 6+70				
Base Rock	4'-0" Crushed	3E to 3F	station	landing	landing	station	3.00	150	150	\$2.57	\$386
Landing	6'-0" Pit-run	3F	landing	landing	landing	landing	1	80	80	\$3.90	\$312
Total Rock for Road Segment:									230		\$698

ROAD SEGMENT			POINT TO POINT			Sta. to Sta.			TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost
Application	Rock Size and Type	Location	3G to 3H	3I to 3J	3K to 3L	0+00 to 3+60	3+60 to 6+70				
Base Rock	4'-0" Crushed	3G to 3H	station	landing	landing	station	1.70	85	85	\$2.57	\$218
Landing	6'-0" Pit-run	3H	landing	landing	landing	landing	1	80	80	\$3.90	\$312
Total Rock for Road Segment:									165		\$530

SUB TOTAL FOR SURFACING			Description			No. Sta	Rate/ Sta	Cost
Processing	Water, Process & Compact Crushed Base Rock	In two lifts				146.6	\$49.02	\$7,186
Processing	Water, Process & Compact Traction Rock	3A-3B, 35 sta. 12+00 to 60+00				48.0	\$49.02	\$2,353
SUB TOTAL FOR SURFACING								\$9,539

SPECIAL PROJECTS			Description			No. Sta	Rate/ Sta	Cost
SUB TOTAL FOR SPECIAL PROJECTS								\$0

GRAND TOTAL \$61,100

Project No. 1 Road Improvement

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Green Lantern NEW CONSTRUCTION: 0.00 STATIONS 0.00 MILES
 ROAD: 11-12 (151.9), 12-13 (16.9), 13-14 (35.65), 15-16 (61.5), 17-18 (15.0) IMPROVEMENT: 280.95 STATIONS 5.32 MILES

SURFACING		Description		Stations/ amount	Rate/ sta./amt	Cost
Subgrade prep:		Grade, Shape and Ditch		280.95	x	\$6,054.47
		Surfacing Rock Processing and Compaction (Subgrade Leveling)		280.95	x	\$4,922.24
		Scatter Ditch Waste Materials		60.00	x	\$646.80
		Load and Haul Ditch Waste Materials		107.00	x	\$2,128.23
						\$13,751.74
ROAD SEGMENT		11 to 12 Stanley/Green Mt. Rd.		POINT TO POINT		Sta. to Sta.
Application	Rock Size and Type	Location	Depth of Rock (inches)	11 to 12 Stanley/Green Mt. Rd. Volume (CY) per	Sta. to Sta. Number of	Cost
Surfacing	1 1/2"-0" Crushed	11 to 12	4	station 25	stations 151.90	\$9,760
Subgrade Leveling	1 1/2"-0" Crushed	11 to 12	N/A			\$493
Curve Widening	1 1/2"-0" Crushed	11 to 12	4	curve	N/A	\$278
Turnouts	1 1/2"-0" Crushed	11 to 12	4	turnout	21	\$594
Junction	1 1/2"-0" Crushed	11 to 12	N/A	junction	3	\$185
Dissipator Rock	24" 6" Riprap	Sta. 127+60	N/A	dissipator	1	\$33
Total Rock for Road Segment:						\$11,343
ROAD SEGMENT		12 to 13		POINT TO POINT		Sta. to Sta.
Application	Rock Size and Type	Location	Depth of Rock (inches)	12 to 13 Volume (CY) per	Sta. to Sta. Number of	Cost
Surfacing	1 1/2"-0" Crushed	12 to 13	3	station 19	stations 16.90	\$825
Subgrade Leveling	1 1/2"-0" Crushed	12 to 13	N/A			\$185
Curve Widening	1 1/2"-0" Crushed	12 to 13	3	curve	N/A	\$31
Turnouts	1 1/2"-0" Crushed	12 to 13	3	turnout	2	\$41
Junction	1 1/2"-0" Crushed	12 to 13	N/A	junction	6	\$185
Total Rock for Road Segment: Green Mt. Road to Area 2						\$1,267
ROAD SEGMENT		13-14 Area 2 Road		POINT TO POINT		Sta. to Sta.
Application	Rock Size and Type	Location	Depth of Rock (inches)	13-14 Area 2 Road Volume (CY) per	Sta. to Sta. Number of	Cost
Surfacing	1 1/2"-0" Crushed	13 to 14	3	station 19	stations 35.65	\$1,741
Subgrade Leveling	1 1/2"-0" Crushed	13 to 14	N/A			\$308
Curve Widening	1 1/2"-0" Crushed	13 to 14	N/A	curve	N/A	\$154
Turnaround	1 1/2"-0" Crushed	30+75 & 34+50	N/A	turnaround	2.00	\$62
Turnouts	1 1/2"-0" Crushed	13 to 14	N/A	turnout	3	\$62
Junction	1 1/2"-0" Crushed	13 to 14	N/A	junction	3	\$93
Total Rock for Road Segment:						\$2,419
						\$28,780.74

ROAD SEGMENT		15-16 Area 1 Road		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	15-16 Area 1 Road Volume (CY) per	Number of	0+00 to 61+50				
Surfacing	1 1/2"-0" Crushed	15 to 16	3	station	19	stations	61.50	1,169	\$2.57	\$3,003
Subgrade Leveling	1 1/2"-0" Crushed	15 to 16	N/A					240	\$2.57	\$617
Curve Widening	1 1/2"-0" Crushed	15 to 16	N/A	curve	N/A	curves	N/A	240	\$2.57	\$617
Turnouts	1 1/2"-0" Crushed	15 to 16	N/A	turnout	8	turnouts	11	88	\$2.57	\$226
Junction	1 1/2"-0" Crushed	15 to 16	N/A	junction	12	junctions	4	48	\$2.57	\$123
Turnaround	1 1/2"-0" Crushed	15 to 16	N/A	turnaround	12	turnarounds	1	12	\$2.57	\$31
Culvert Bedding	1 1/2"-0" Crushed	Sta. 23+20	N/A	culvert	20	culverts	1	20	\$2.57	\$51
Total Rock for Road Segment:								1,817		\$4,668
ROAD SEGMENT		17-18 Area 1 Spur		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	17-18 Area 1 Spur Volume (CY) per	Number of	0+00 to 15+00				
Surfacing	1 1/2"-0" Crushed	17 to 18	2	station	13	stations	15.00	195	\$2.41	\$470
Subgrade Leveling	1 1/2"-0" Crushed	17 to 18	N/A					36	\$2.41	\$87
Curve Widening	1 1/2"-0" Crushed	17 to 18	N/A	curve	N/A	curves	N/A	24	\$2.41	\$58
Turnouts	1 1/2"-0" Crushed	17 to 18	N/A	turnout	6	turnouts	2	12	\$2.41	\$29
Junction	1 1/2"-0" Crushed	17 to 18	N/A	junction	12	junctions	1	12	\$2.41	\$29
Turnaround	1 1/2"-0" Crushed	17 to 18	N/A	turnaround	12	turnarounds	1	12	\$2.41	\$29
Total Rock for Road Segment:								291		\$701
Processing:		Description		17-18 Area 1 Spur		Description		No. sta	Rate/sta	Cost
		Water, Process & Compact Crushed Rock in one lift						280.95	\$49.02	\$13,772
		Construct Dissipaters W/Excavator @ \$144/hr. X 2hrs. X 1 dissipator= 2hrs						2	\$144.00	\$288
SUB TOTAL FOR SURFACING										

\$48,209.74

CULVERT MATERIALS AND INSTALLATION										
Location	Dia/type	Lineal ft.	Rate	No. bands	Rate	Cost				
15 to 16	18" CPP	40	\$17.64			\$705.60				
Other/miscellaneous:							Quantity	Rate	Cost	
Culvert stakes & markers:							2 1/2" x 6" White Carsonite post (installed)	18	\$18.00	\$324.00
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION										
\$1,030										

\$1,030

SPECIAL PROJECTS									
Description	Quantity	Rate	Cost						
Hand Grass Seeding Pasture Mix (seed, labor) .06 acres @ \$445.00 per acre for a waste area	0.23	\$445.00	=						
Straw Bales, 10 Bales @ \$10.00 per Bale	15	\$10.00	=						
Labor 4 Hours Labor for Spreading Straw Bales @ \$38.00 per Hour	5	\$38.00	=						
SUB TOTAL FOR SPECIAL PROJECTS									
\$442									

\$49,681.74

GRAND TOTAL \$49,681.74

L. Freeman 12/15/2008

Road Maintenance after completion of Projects

Sale: Green Lantern
Date: 05-Nov-08
By: L. Freeman

Type	Equipment/Rationale	Hours	Rate	Cost
Final Haul Road Maintenance Haul Route	Grader 14G Dump Truck 12CY x 3 FE Loader C966 Vibratory Roller Water Truck 2,500 gallon	2 2 2 1 1	\$93 \$73 \$77 \$72 \$83	\$186 \$146 \$154 \$90 \$104
Total				\$680

Miles/day	Distance(miles)	Days
1.5	0.2	0.1
1.5	0.2	0.1

*Project work road maintenance is to be performed from Green Mountain Quarry #2 to Pt. "I3"

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 2 Timber Sale Name: Green Lantern
 Quarry: Green Mountain No. 1 Swell: _____
 Location: NW 1/4, NE 1/4, Sec. 34, T5N, R6W Shrink: 16%
 County: Clatsop
 By: d.mellison Loading Hopper: Yes
 Date: revised 12/15/08

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"	6%	CR		9,715	9,715
4"-0"		CR			
6"-0"		PR			
24"-6"		RR		40	40
36"		RR			
TOTAL CUBIC YARDS OF ROCK:				9,755	9,755

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Full Move				Hourly move allowance from GM #2 to GM#1			
Drill & Compressor	1	\$1,180	\$1,180	Loader	1	\$51	\$51
1 Stage Crusher	1	\$667	\$667	Off Highway Dump Truck	1	\$60	\$60
Screening Plant	1	\$515	\$515	D6 Cat	1	\$53	\$53
Powder	1	\$327	\$327	Excavator	1	\$72	\$72
Partial Move (0.58)							
Loading Hopper	1	\$299	\$299				
2 Stage Crusher	1	\$1,176	\$1,176				
Screening Plant	1	\$299	\$299				
SUB TOTAL FOR MOBILIZATION							\$4,699

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,205	\$3,205
Screening Plants	2	\$273	\$546
Loading Hopper	1	\$273	\$273

SUB TOTAL FOR SET UP COSTS **\$4,024**

TOTAL MOBILIZATION & SET UP COSTS **\$8,723**

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Light Alder clearing w/Excavator (Scatter in Waste Area)	3.0	hours	\$144	\$432

TOTAL CLEARING & GRUBBING COSTS **\$432**

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden removal (excavate/load/haul)	3,000	bcy	\$1.62	\$4,860
Waste Area compaction (includes reject)	3,583	bcy	\$0.30	\$1,075
Shape waste area (D6 Dozer)	2	hours	\$105.00	\$210

TOTAL EXCAVATION COSTS \$6,145

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd.	Vol. Weight	Ripping				
crushed	9,715	100%	Drill & shoot	100%	10,338	\$2.30	\$23,777
pit run	0	0	Oversize red	2%	194	\$5.80	\$1,127
rip rap	40	0%	Other				
Total	9,755						
reject	583	6.0%					

TOTAL ROCK DEVELOPMENT COSTS \$24,904

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	1	\$507.00	\$507
Calibrate			
Test	5	\$57.30	\$287
Test			

TOTAL CALIBRATION & TESTING COSTS \$794

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	10,298	\$0.79	\$8,153

TOTAL FEEDING & LOADING COSTS \$8,153

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed					
1-1/2"-0"	crushed	9,715	3 stage w/s	120	\$3.24	\$31,493
4"-0"	crushed					

TOTAL ROCK CRUSHING COSTS \$31,493

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

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. Green Mountain #1 Quarry floor		loader	1,000	\$1.64	\$1,636
2.					
3.					
4.					
5.					
6.					

SUB TOTAL

\$1,636

TOTAL STOCKPILING COSTS

\$1,636

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$944
\$1.62 /CY 583 CY	
Seed & Mulch waste area: 1.1 acres @ \$1,558/acre	\$1,714
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access:	
2 hours Excavator	\$288
1 hour D6	\$105

TOTAL MISCELLANEOUS COSTS

\$3,051

10) GRAND TOTAL:

\$85,330

\$/Cubic Yard

\$8.78

Footnotes:

Moving from between Green Mountain quarries entails travel of less than 1/2 mile for the equipment that can travel under its own power, hence 1/2 hr allowed for this equipment. Equipment needing a lowboy to go between the two quarries, I used a 0.58 factor due to one tractor ferring the equipment.
1,000 cy of the 1 1/2"-0" crushed rock will be truck measured in a stockpile at the Green Mount #1 quarry site.

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 2 Timber Sale Name: Green Lantern
 Quarry: Green Mountain No. 2 Swell: _____
 Location: NE 1/4, NE 1/4, Sec. 34, T5N, R6W Shrink: 16%
 County: Clatsop
 By: d.mellison Loading Hopper: Yes
 Date: Revised 12/15/08

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR	_____	_____	_____
1-1/2"-0"		CR	_____	_____	_____
4"-0"	10%	CR	_____	5,093	5,093
6"-0"		PR	_____	500	500
24"-6"		RR	_____	_____	_____
36"		RR	_____	_____	_____
TOTAL CUBIC YARDS OF ROCK:				5,593	5,593

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
2 Stage Crusher	1	\$2,027	\$2,027				
Screening Plants	1	\$515	\$515				
Excavator	1	\$1,220	\$1,220				
D6 Cat	1	\$675	\$675				
Off Highway Dump	1	\$661	\$661				
Fire Truck	1	\$137	\$137				
Loading Hopper	1	\$515	\$515				
Loader	1	\$699	\$699				

SUB TOTAL FOR MOBILIZATION

\$6,449

EQUIPMENT SET UP	TIMES	RATE	COST
2 Stage Crusher	1	\$2,027	\$2,027
Screening Plants	1	\$273	\$273
Loading Hopper	1	\$273	\$273
Original Calibration	1	\$507	\$507

SUB TOTAL FOR SET UP COSTS

\$3,080

TOTAL MOBILIZATION & SET UP COSTS

\$9,529

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Pile and Burn:				
Excavator (clear/grub)(0.137 acres)	3.0	hours	\$144	\$432
Excavator (tend burn pile)	2.0	hours	\$144	\$288

TOTAL CLEARING & GRUBBING COSTS

\$720

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate/load/haul)	1,488	bcy	\$1.62	\$2,411
Waste area compaction (includes reject)	1,997	bcy	\$0.30	\$599
Shape waste area (D6 dozer)	2	hours	\$105.00	\$210

TOTAL EXCAVATION COSTS \$3,220

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping	100%	5,593	\$2.20	\$12,305
crushed	5,093	91%	Drill & shoot			\$2.30	
pit run	500	9%	Oversize red	1%	56	\$5.80	\$324
rip rap	0	0	Other				
Total	5,593						
reject	509	9.1%					

TOTAL ROCK DEVELOPMENT COSTS \$12,629

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	1	\$507.00	\$507
Calibrate			
Test	3	\$57.30	\$172
Test			

TOTAL CALIBRATION & TESTING COSTS \$679

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	5,602	\$0.68	\$3,802

TOTAL FEEDING & LOADING COSTS \$3,802

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed	5,093			\$2.48	\$12,623
1-1/2"-0"	crushed					
4"-0"	crushed		2 stage w/s	140		

TOTAL ROCK CRUSHING COSTS \$12,623

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

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

SUB TOTAL

TOTAL STOCKPILING COSTS

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and dump reject material at waste area.	\$825
\$1.62 /CY 509 CY	
Seed & Mulch waste area: 0.64 acres @ \$1,558/acre	\$997
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access:	
Excavator (hours) 2 \$144	\$288
D6 Dozer (hours) 2 \$105	\$210

TOTAL MISCELLANEOUS COSTS

\$2,320

10) GRAND TOTAL:

\$45,522

\$/Cubic Yard

\$8.94

Footnotes:

Project No. 3 Green Lantern Brushing

Segment	Name	Length (Miles)	Brush Type	Cost/Mile	Cost
B2-B22	Buster Creek	5.3	M	\$1,599.00	\$8,474.70
B4-B5	Green Mountain	1.55	L	\$1,362.00	\$2,111.10
B4-B5	Green Mountain	0.60	M	\$1,599.00	\$959.40
B6-B7	GM70	1.22	M	\$1,599.00	\$1,950.78
B8	GM7030	0.28	M	\$1,599.00	\$447.72
B9	GM720	0.33	M	\$1,599.00	\$527.67
B10-B11	GM80	0.67	M	\$1,599.00	\$1,071.33
B12	n/a	0.10	M	\$1,599.00	\$159.90
B13	GM8010	0.50	M	\$1,599.00	\$799.50
B14	n/a	0.05	L	\$1,362.00	\$68.10
B15	GM110	0.05	M	\$1,599.00	\$79.95
B16	GM120	0.15	L	\$1,362.00	\$204.30
B16	GM120	0.05	M	\$1,599.00	\$79.95
B17	GM2010	0.10	M	\$1,599.00	\$159.90
B18	GM130	0.10	L	\$1,362.00	\$136.20
B19	GM140	0.05	L	\$1,362.00	\$68.10
B20	n/a	0.15	M	\$1,599.00	\$239.85
B21	GM160	0.20	M	\$1,599.00	\$319.80

Segment	Name	Hours	Brush Type	Cost/Hour	Cost
B1-B2	Wage	16	Hand Brushing	\$38.00	\$608.00
B2-B3	Stanley Creek	8	Hand Brushing	\$38.00	\$304.00
B3-B4	Green Mountain	8	Hand Brushing	\$38.00	\$304.00

Total Miles 11.45 **Total Project Cost** **\$19,074**

Hand Brushing Hours 32

L = Light brushing, red alder, salmonberry \$1,362.00 / mile

M = Medium brushing (mixed brush & conifer reproduction) \$1,599.00 / mile

H = Heavy brushing (dense conifer reproduction and saplings) \$1,954.00 / mile

VH = Very heavy \$2,724.00 / mile

HB = - Hand Brushing \$38.00 / hour

Final Road Maintenance Cost Summary

Sale: Green Lantern
 Date: 10-Dec-08
 By: L. Freeman

MBF: 8,598
 \$\$/MBF: \$3.49

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Miles/day	Distance(miles)	Days	
Progressive Operations 1st Entry(5 mi.)	Grader 14G	\$675	1	20	\$93	\$2,535	Grader	2.5	5.0	2.0
	Dump Truck 12CY x 2	\$141	2	16	\$73	\$1,450				
	FE Loader C966	\$675	1	8	\$77	\$1,291				
Progressive Operations 2nd. Entry(5 mi.)	Grader 14G	\$675	1	20	\$93	\$2,535	Grader	2.5	5.0	2.0
	Dump Truck 12CY x 2	\$141	2	16	\$73	\$1,450				
	FE Loader C966	\$675	1	8	\$77	\$1,291				
Final Road Maintenance 9.6 miles	Grader 14G	\$675	1	64	\$93	\$6,627				
	Dump Truck 12CY x 4	\$141	4	40	\$73	\$3,484	Grader	1.5	9.6	6.4
	FE Loader C966	\$675	1	12	\$77	\$1,599	Vibratory Roller*	1.5	9.6	6.4
	*Vibratory Roller	\$675	1	64	\$72	\$5,283				
	Water Truck 2,500 gallon Labor	\$165	1	24	\$83	\$2,157				
Total						\$30,006				

*Final Road Maintenance Only

TIMBER CRUISE REPORT
Green Lantern
FY 2009

1. **Sale Area Location:** Areas are located in Portions of Sections 26, 34, 35, and 36 of T5N, R6W; 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	Net Acres	Survey Method
1	Modified CC	78.0	3.0	0.0	3.0	72.0	GIS
2	Modified CC	56.0	0.0	3.0	3.0	50.0	GIS
3	Modified CC	99.0	0.0	5.0	2.0	92.0	GIS
4 R/W	In-Sale R/W	8.0	0.0	0.0	0.0	8.0	GIS
5 R/W	Out-of-Sale R/W	3.0	0.0	0.0	0.0	3.0	GIS
TOTALS		244.0	3.0	8.0	8.0	225.0	

4. **Cruisers and Cruise Dates:** Areas were cruised by Peter Stone, Jasen McCoy, Jon Long, David Wolfgram, and Ed Holloran in September 2008.

5. **Cruise Method and Computation:** The three clearcut Areas and Area 4 R/W were not combined on a single cruise because they all have substantially different timber types.

Area 1 is 72 acres and was variable plot cruised using a 40 BAF. A total of 23 plots were sampled, with 7 measured and graded plots, and 16 count plots. These plots are located on a 4 by 7 chain grid, with every third plot measured and graded. All cedars are reserve species, and were recorded as "leave" trees. Wildlife trees and cedar were not included in the net volume.

Area 2 is 50 acres and was variable plot cruised using a 40 BAF. A total of 20 plots were sampled, with 7 measured and graded plots, and 13 count plots. These plots are located on a 3 by 7 chain grid, with every third plot measured and graded. All cedars are reserve species, and were recorded as "leave" trees. Wildlife trees and cedar were not included in the net volume.

Area 3 is 92 acres and was variable plot cruised using a 40 BAF. A total of 20 plots were sampled, with 7 measured and graded plots, and 17 count plots. These plots are located on a 5 by 8 chain grid, with every third plot measured and graded. All cedars are reserve species, and were recorded as "leave" trees. Wildlife trees and cedar were not included in the net volume.

Area 4 R/W The in-sale Right-of-Way area (8 acres) was extrapolated from the Area 3 cruise report.

Area 5 R/W The out-of-sale Right-of-Way area was variable plot cruised using a 40 BAF on a 2.2 chain spacing. Out-of-sale Right of Way totals 3 acres. A total of 17 plots were sampled, with 8 measured and graded plots, and 9 count plots.

All cruisers used Corvallis MicroTechnology (CMT) data collectors, 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
1	05N06W SEC 26	1	TAKE
2	05N06W SEC 34 & 35	2	TAKE
3	05N06W SEC 35 & 36	3	TAKE
4 R/W	05N06W SEC 34 & 35	4R/W	4RW
5 R/W	05N06W SEC 35	RW	00RW

TIMBER CRUISE REPORT
Green Lantern

6. Timber Description: Areas 1, 2 and 3 are modified clear cut units, approximately 50 years old, consisting mostly of Douglas-fir and western hemlock stands. Area 1 was thinned in 1995 down to 120sqft/ba. Area 2 has areas of poorly stocked timber as well as areas that are overstocked. Area 3 is densely stocked with few scattered patches of low stocked phellinus pockets. The average volumes (net) are approximately: Area 1 - 34 MBF/acre; Area 2 – 27 MBF/acre; and Area 3 – 47 MBF/acre.

Area 4 R/W consists of Douglas-fir and western hemlock similar to Area 3. The average volume (net) is approximately 47 MBF/acre.

Area 5 R/W consists mostly of Douglas-fir and western hemlock stands. The average volume (net) is approximately 31 MBF/acre.

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

Statistics for Net B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1 (MC)	40%	11%	35.9%	7.6%
2 (MC)	40%	11%	66.9%	15.3%
3 (MC)	40%	11%	40.5%	8.4%
5 (R/W)	55%	12%	56.0%	14.0%

8. Volumes by Species and Log Grade: (See "Species, Sort, Grade - Type and Project Reports, attached, for individual sale areas and combined sale areas.)

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

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	% D & B	% Sale
Douglas-fir	19"	7,261	5,232	1,890	139	1.7	84
Hemlock	16"	1,335	884	383	68	4.2	16
Noble Fir	26"	2	2	0	0	0	0
TOTALS		8,598	6,118	2,273	207		

9. Approvals:

Prepared by: Peter Stone Date: December 16, 2008

Unit Forester Approval:  Date: 12/26/08

10. Attachments:

- Cruise Designs - 8 pages
- Cruise Maps - 1 page
- Volume Reports - 6 pages
- Statistics Reports - 5 pages
- Log Stock Tables - 3 pages

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Green Lantern **Area(s)** 1

Harvest Type: (MC)

Approx. Cruise Acres: 71 **Estimated CV%** 40 Net BF **SE% Objective** 11 Net BF

Planned Sale Volume : 2,130 MBF **Estimated Sale Area Value/Acre:** \$9,000/Ac
(Area 1) (30 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 30 conifer:
(b) Sample 20 cruise plots (6 grade/ 14 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 180° (South/North)
Cruise Line Spacing 7 (chains)
Cruise Plot Spacing 4 (chains)
Grade/Count Ratio 1:2

Cruise all take and leave trees. Record all wildlife trees as leave trees. If a cruise line ends up paralleling in a buffer offset by 1 chain and continue. All cedar are leave trees.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest $\frac{1}{2}$ " 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 is 7" for conifers and 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 8'. 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:

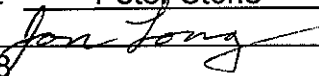
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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; 0 = Cull

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 inter-visible 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.

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: Peter Stone
Approved by: 
Date: 9-02-08

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Green Lantern **Area(s)** 2

Harvest Type: (MC)

Approx. Cruise Acres: 47 **Estimated CV%** 40 Net BF **SE% Objective** 11 Net BF

Planned Sale Volume : 1,410 MBF **Estimated Sale Area Value/Acre:** \$9,000/Ac
(Area 2) (30 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 35 conifer:
(b) Sample 21 cruise plots (7 grade/ 14 count); (c) Other goals (____ Determine
"automark" thinning standards; X Determine log grades for sale value; X
Determine snag and leave tree species and sizes.

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 180° (South/North)
Cruise Line Spacing 7 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1:2

Cruise all take and leave trees. Record all wildlife trees as leave trees. If a cruise line ends up paralleling in a buffer offset by 1 chain and continue. All cedar are leave trees.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" 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 is 7" for conifers and 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 8'. 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; 0 = Cull

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 inter-visible 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.

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: Peter Stone

Approved by: *Jon Long*

Date: 9-04-08

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Green Lantern **Area(s)** 3

Harvest Type: (MC)

Approx. Cruise Acres: 97 **Estimated CV%** 40 Net BF **SE% Objective** 11 Net BF

Planned Sale Volume: 2,910MBF **Estimated Sale Area Value/Acre:** \$9,000/Ac
(Area 3) (30 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 35 conifer:
(b) Sample 22 cruise plots (7 grade/ 15 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 90° (West/East)
Cruise Line Spacing 8 (chains)
Cruise Plot Spacing 5 (chains)
Grade/Count Ratio 1:2

Cruise all take and leave trees. Record all wildlife trees as leave trees. If a cruise line ends up paralleling in a buffer offset by 1 chain and continue. All cedar are leave trees.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" 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 is 7" for conifers and 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 8'. 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; 0 = Cull

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 inter-visible 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.

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: Peter Stone
Approved by: *Jon Long*
Date: 9-04-08

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Green Lantern **Area(s)** 5

Harvest Type: Out of Sale R/W

Approx. Cruise Acres: 2 **Estimated CV%** 55 Net BF **SE% Objective** 12 Net BF

Planned Sale Volume: 16 MBF **Estimated Sale Area Value/Acre:** \$2,400/Ac
(Area 5) (8 MBF/Ac)

A. Cruise Goals: (a) Grade minimum 35 conifer:
(b) Sample 15 cruise plots (7 grade/8 count); (c) Other goals (Determine
"automark" thinning standards; X Determine log grades for sale value; X

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Directions Center of R/W
Cruise Line Spacing N/A (chains)
Cruise Plot Spacing 2.2 (chains)
Grade/Count Ratio 1:1

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" 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 is 7" for conifers and 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 8'. 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; 0 = Cull

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 inter-visible 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.

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: Peter Stone
Approved by: *Jon Long*
Date: 9-04-08

Cruise Map

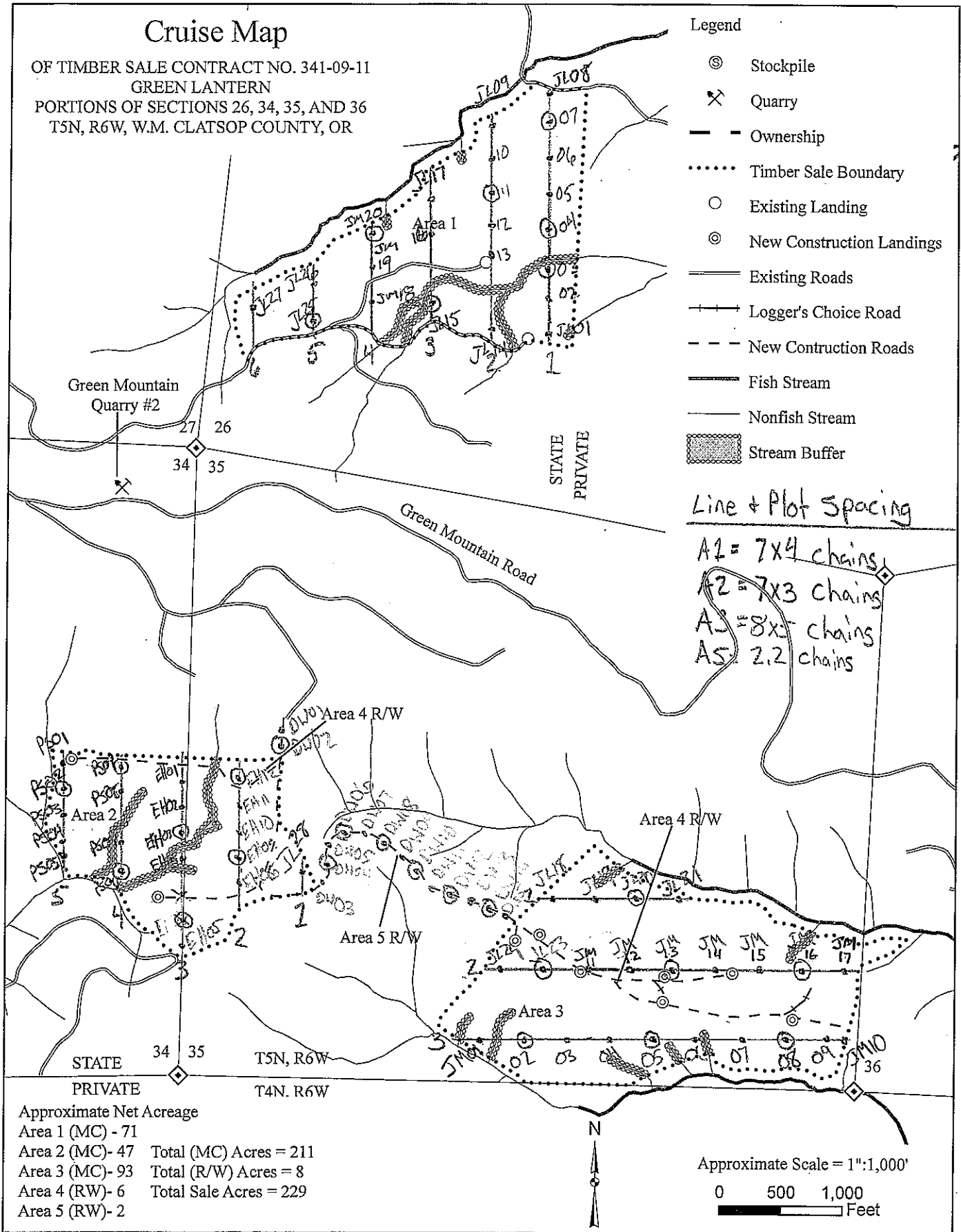
OF TIMBER SALE CONTRACT NO. 341-09-11
 GREEN LANTERN
 PORTIONS OF SECTIONS 26, 34, 35, AND 36
 T5N, R6W, W.M. CLATSOP COUNTY, OR

Legend

- ⊙ Stockpile
- ✕ Quarry
- Ownership
- ⋯ Timber Sale Boundary
- Existing Landing
- ⊙ New Construction Landings
- Existing Roads
- +— Logger's Choice Road
- - - New Construction Roads
- Fish Stream
- Nonfish Stream
- ▨ Stream Buffer

Line + Plot Spacing

- A1 = 7x4 chains
- A2 = 7x3 chains
- A3 = 8x5 chains
- A5 = 2.2 chains

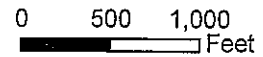


Approximate Net Acreage

Area 1 (MC) - 71	
Area 2 (MC) - 47	Total (MC) Acres = 211
Area 3 (MC) - 93	Total (R/W) Acres = 8
Area 4 (RW) - 6	Total Sale Acres = 229
Area 5 (RW) - 2	



Approximate Scale = 1":1,000'



Species, Sort Grade - Board Foot Volumes (Project)

T005 R006 S35 Ty00RW
 THRU
 T05N R06W S35 Ty4RW

Project: LANTERN
Acres 225.00

Page 1
Date 12/16/2008
Time 10:49:58AM

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre					
					Def%	Gross	Net		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																							
H		DO2S		66	4.0	4,092	3,930	884			4	76	20		0	1	27	72	8			0.00		1.5	
H		DO3S		28	5.4	1,800	1,703	383			100					8	37	55	37	242		1.60		16.3	
H		DO4S		6		300	300	68		11	89				29	60		11	35	71		0.66		24.1	
H	Totals			16	4.2	6,193	5,934	1,335		1	36	50	13		2	6	28	64	22	28		0.44		10.6	
H	Totals			16	4.2	6,193	5,934	1,335		1	36	50	13		2	6	28	64	32	113		0.96		52.4	
D		DOCU																							
D		DO2S		72	1.2	23,539	23,254	5,232			5	58	37			1	38	60	6			0.00		7.7	
D		DO3S		26	1.0	8,486	8,398	1,890			92	8	0		1	10	38	51	36	307		1.88		75.8	
D		DO4S		2		619	619	139			100				57	42	1		34	79		0.69		106.9	
D	Totals			84	1.1	32,645	32,271	7,261			29	44	27		1	4	38	57	17	23		0.43		-26.6	
D	Totals			84	1.1	32,645	32,271	7,261			29	44	27		1	4	38	57	32	149		1.14		217.0	
NF		DO2S		94		7	7	2				28	72				28	72	36	415		2.36		.0	
NF		DO4S		6		0	0	0			100				100				19	50		0.84		.0	
NF	Totals			0		7	7	2			6	26	68		6		68	30	293		2.04		.0		
Totals					1.6	38,845	38,212	8,598		0	30	45	25		1	4	36	58	32	142		1.11		269.5	

T05N R06W S26 TTAKE										T05N R06W S26 TTAKE		
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt			
05N	06W	26	1	TAKE	72.00	23	28	1	W			

Spp	S T	So rt	Gr 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		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU														6		0.00	12.0	
D		DO	2S	89	1.9	26,556	26,041	1,875		6	40	54		3	35	62	37	360	2.15	72.4	
D		DO	3S	10	2.0	2,854	2,796	201		100				2	25	40	32	33	70	0.71	39.8
D		DO	4S	1		194	194	14		100				62	38		18	32	0.58	6.0	
D	Totals			85	1.9	29,604	29,031	2,090		16	36	49		1	5	36	58	32	223	1.61	130.2
H		DO	CU														6		0.00	2.4	
H		DO	2S	82	2.7	4,393	4,275	308			81	19			42	58	37	249	1.66	17.2	
H		DO	3S	18		902	902	65		100					59	41	35	60	0.65	15.0	
H	Totals			15	2.2	5,295	5,177	373		17	67	16			44	56	34	150	1.18	34.6	
Type Totals					2.0	34,899	34,208	2,463		16	40	44		1	5	37	58	32	208	1.52	164.8

T05N R06W S35 TTAKE										T05N R06W S35 TTAKE			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
05N	06W	35	2	TAKE	50.00	20	31	1	W				

Spp	S T	So rt	Gr 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		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
H		DO	CU														9		0.00	2.0	
H		DO	2S	61	3.3	8,714	8,426	421			72	28			2	16	81	37	258	1.68	32.6
H		DO	3S	29	5.2	4,268	4,047	202		100					14	23	62	34	95	0.83	42.7
H		DO	4S	10		1,339	1,339	67		11	89				30	59	11	22	28	0.43	47.3
H	Totals			50	3.6	14,321	13,812	691	1	38	44	17		3	11	17	69	30	111	0.99	124.7
D		DO	CU															8		0.00	1.7
D		DO	2S	76	4.2	10,980	10,516	526			39	61			1	19	80	37	404	2.43	26.0
D		DO	3S	19	.3	2,634	2,625	131		100					6	76	18	34	78	0.71	33.7
D		DO	4S	5		557	557	28		100				38	62			16	23	0.44	24.0
D	Totals			50	3.3	14,170	13,698	685		23	30	47		2	4	29	65	29	160	1.32	85.5
Type Totals					3.4	28,491	27,509	1,375	1	31	37	32		2	8	23	67	30	131	1.12	210.2

T05N R06W S35 TTAKE										T05N R06W S35 TTAKE			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
05N	06W	35	3	TAKE	92.00	24	54	i	W				

Spp	S T	So rt	Gr 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		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU															7		0.00	7.3
D		DO	2S	63	.1	27,884	27,853	2,562	5	74	21				44	56		36	267	1.68	104.1
D		DO	3S	34	1.0	15,452	15,300	1,408	90	10				1	8	34	56	34	80	0.69	192.1
D		DO	4S	3		936	936	86	100					63	37			17	22	0.41	42.2
D		Totals		94	.4	44,272	44,089	4,056	37	50	13			2	4	40	55	32	128	1.00	345.8
H		DO	2S	57	8.2	1,633	1,499	138	25	75					25	75		37	196	1.33	7.7
H		DO	3S	43	9.0	1,202	1,094	101	100						50	50		35	52	0.50	21.1
H		Totals		6	8.5	2,835	2,593	239	57	43					36	64		35	90	0.73	28.8
Type Totals					.9	47,107	46,681	4,295	38	50	13			2	3	39	56	33	125	0.98	374.5

T05N	R06W	S35	T4RW										T05N	R06W	S35	T4RW
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt							
05N	06W	35	4R/W	4RW	8.00	24	55	1	W							

Spp	Sp	Gr	% 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					
				4-5	6-11	12-16					17+	12-20	21-30	31-35	36-99												
D	DO	CU																									
D	DO	2S	63	.4	28,008	27,899	223		5	74	21				43	57				7			0.00				7.2
D	DO	3S	34	1.0	15,299	15,150	121		90	10				1	8	34	56			36			1.69				104.0
D	DO	4S	3		923	923	7		100					63	37					34			0.69				190.7
D	Totals		94	.6	44,230	43,972	352		36	50	13			2	4	39	55			17			0.41				41.6
D	Totals								36	50	13			2	4	39	55			32			1.01				343.5
H	DO	2S	57	8.2	1,633	1,499	12		25	75					25	75				37			1.33				7.7
H	DO	3S	43	9.0	1,202	1,094	9		100						50	50				35			0.50				21.1
H	Totals		6	8.5	2,835	2,593	21		57	43					36	64				35			0.73				28.8
Type Totals									37	50	13			2	3	39	56			33			0.98				372.3

T005 R006 S35 T00RW		T005 R006 S35 T00RW
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt		W
005 006 35 RW 00RW 3.00 17 44 1		

Spp	S	So	Gr	% 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		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU														10		0.00	19.9	
D		DO	2S	58	.6	15,301	15,208	46		2	44	54		2	68	30	34	340	2.18	44.7	
D		DO	3S	36	.7	9,455	9,385	28		72	26	2		5	3	55	34	95	0.77	98.7	
D		DO	4S	6		1,346	1,346	4		100				35	47	19	22	30	0.47	45.6	
D	Totals			85	.6	26,102	25,940	78		33	35	32		3	5	61	31	29	124	1.05	208.9
H		DO	CU														13		0.00	20.6	
H		DO	2S	42	1.0	1,786	1,767	5			84	16		16		39	45	31	216	1.63	8.2
H		DO	3S	52	.9	2,199	2,181	7		100						39	61	37	74	0.69	29.6
H		DO	4S	6		220	220	1		100				100			30	40	0.60	5.5	
H	Totals			14	.9	4,205	4,168	13		58	36	7		7	5	37	51	28	65	0.71	63.9
NF		DO	2S	94		530	530	2			28	72				28	72	36	415	2.36	1.3
NF		DO	4S	6		32	32	0		100				100				19	50	0.84	.6
NF	Totals			2		562	562	2		6	26	68		6		26	68	30	293	2.04	1.9
Type Totals					.6	30,869	30,669	92		35	35	29		4	5	57	34	29	112	0.98	274.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		LANTERN		DATE	12/16/2008	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	26	1	TAKE	72.00	23	97	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	23	97	4.2							
CRUISE	7	28	4.0	4,209			.7			
DBH COUNT										
REFOREST										
COUNT	16	69	4.3							
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
DOUG FIR	22	43.4	24.1	99		137.4	29,604	29,031	6,698	6,698
WHEMLOCK	6	15.0	19.5	81		31.3	5,295	5,177	1,390	1,390
TOTAL	28	58.5	23.0	94		168.7	34,899	34,208	8,088	8,088
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	56.4	12.3	740	844	947					
WHEMLOCK	38.9	17.3	295	357	418					
TOTAL	63.6	12.2	649	739	830	167	42	19		
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	37.7	8.0	40	43	47					
WHEMLOCK	142.4	30.3	10	15	20					
TOTAL	38.4	8.2	54	58	63	62	15	7		
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	39.1	8.3	126	137	149					
WHEMLOCK	143.9	30.7	22	31	41					
TOTAL	32.7	7.0	157	169	180	45	11	5		
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	43.9	9.4	26,316	29,031	31,746					
WHEMLOCK	146.3	31.2	3,564	5,177	6,790					
TOTAL	35.9	7.6	31,596	34,208	36,821	54	13	6		

TC TSTATS		STATISTICS							PAGE	1
		PROJECT LANTERN					DATE	12/16/2008		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	35	2	TAKE	50.00	20	87	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		20	87	4.3						
CRUISE DBH COUNT		6	31	5.2	5,145	.6				
REFOREST COUNT		13	56	4.3						
BLANKS		1								
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	16	64.8	16.3	60		94.0	14,321	13,812	3,691	3,691
DOUG FIR	15	38.1	19.6	68		80.0	14,170	13,698	3,308	3,308
TOTAL	<i>31</i>	<i>102.9</i>	<i>17.6</i>	<i>63</i>		<i>174.0</i>	<i>28,491</i>	<i>27,509</i>	<i>6,999</i>	<i>6,999</i>
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	56.8	14.7	262	308	353					
DOUG FIR	90.0	24.1	513	676	839					
TOTAL	<i>97.2</i>	<i>17.5</i>	<i>401</i>	<i>486</i>	<i>571</i>		<i>378</i>	<i>94</i>	<i>42</i>	
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	141.3	32.4	44	65	86					
DOUG FIR	94.8	21.7	30	38	46					
TOTAL	<i>85.4</i>	<i>19.6</i>	<i>83</i>	<i>103</i>	<i>123</i>		<i>307</i>	<i>77</i>	<i>34</i>	
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	127.5	29.2	67	94	121					
DOUG FIR	82.7	19.0	65	80	95					
TOTAL	<i>67.7</i>	<i>15.5</i>	<i>147</i>	<i>174</i>	<i>201</i>		<i>192</i>	<i>48</i>	<i>21</i>	
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	125.5	28.8	9,838	13,812	17,786					
DOUG FIR	85.8	19.7	11,003	13,698	16,392					
TOTAL	<i>66.9</i>	<i>15.3</i>	<i>23,292</i>	<i>27,509</i>	<i>31,727</i>		<i>188</i>	<i>47</i>	<i>21</i>	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT LANTERN		DATE 12/16/2008				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	35	3	TAKE	92.00	24	177	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		24	177	7.4						
CRUISE		7	54	7.7	17,421		3			
DBH COUNT										
REFOREST										
COUNT		17	123	7.2						
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
DOUG FIR	49	168.2	17.3	69		273.3	44,272	44,089	11,156	11,156
WHEMLOCK	5	21.1	13.7	50		21.7	2,835	2,593	759	743
TOTAL	54	189.4	16.9	67		295.0	47,107	46,681	11,915	11,899
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	56.8	8.1	330	359	388					
WHEMLOCK	70.7	35.1	114	176	238					
TOTAL	59.7	8.1	314	342	370	142	36	16		
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	35.7	7.4	156	168	181					
WHEMLOCK	147.7	30.8	15	21	28					
TOTAL	35.4	7.4	175	189	203	52	13	6		
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	36.8	7.7	252	273	294					
WHEMLOCK	153.8	32.0	15	22	29					
TOTAL	37.0	7.7	272	295	318	57	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		
DOUG FIR	40.7	8.5	40,349	44,089	47,829					
WHEMLOCK	158.4	33.0	1,737	2,593	3,448					
TOTAL	40.5	8.4	42,745	46,681	50,618	68	17	8		

TC TSTATS		STATISTICS							PAGE	1
		PROJECT LANTERN					DATE	12/16/2008		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	35	4R/W	4RW	8.00	24	178	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		24	178	7.4						
CRUISE		7	55	7.9	1,506	3.7				
DBH COUNT										
REFOREST										
COUNT		17	123	7.2						
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	50	167.2	17.4	69		275.0	44,230	43,972	11,185	11,185
WHEMLOCK	5	21.1	13.7	50		21.7	2,835	2,593	759	743
TOTAL	55	188.3	17.0	67		296.7	47,065	46,565	11,944	11,928
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	7.9	331	360	388					
WHEMLOCK	70.7	35.1	114	176	238					
TOTAL	59.0	8.0	316	343	370	139	35	15		
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	35.8	7.5	155	167	180					
WHEMLOCK	147.7	30.8	15	21	28					
TOTAL	35.5	7.4	174	188	202	52	13	6		
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	36.2	7.5	254	275	296					
WHEMLOCK	153.8	32.0	15	22	29					
TOTAL	36.4	7.6	274	297	319	55	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		
DOUG FIR	40.0	8.3	40,306	43,972	47,638					
WHEMLOCK	158.4	33.0	1,737	2,593	3,448					
TOTAL	39.8	8.3	42,702	46,565	50,428	66	17	7		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		LANTERN		DATE	12/16/2008	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
005	006	35	RW	00RW	3.00	17	93	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		17	93	5.5						
CRUISE		8	44	5.5	472		9.3			
DBH COUNT										
REFOREST										
COUNT		9	49	5.4						
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
DOUG FIR	35	108.9	16.9	57		169.4	26,102	25,940	6,312	6,312
WHEMLOCK	8	47.7	13.4	39		47.1	4,205	4,168	1,262	1,262
NOB FIR	1	.6	26.0	94	0	2.4	562	562	119	119
TOTAL	44	157.3	16.0	52		218.8	30,869	30,669	7,693	7,693
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		99.6	16.8	397	477	558				
WHEMLOCK		82.2	31.0	103	149	195				
NOB FIR										
TOTAL		105.4	15.9	359	427	495	444	111	49	
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		92.5	23.1	84	109	134				
WHEMLOCK		143.1	35.7	31	48	65				
NOB FIR		412.3	103.0		1	1				
TOTAL		64.0	16.0	132	157	182	174	43	19	
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		66.0	16.5	141	169	197				
WHEMLOCK		141.7	35.4	30	47	64				
NOB FIR		412.3	103.0		2	5				
TOTAL		47.5	11.9	193	219	245	96	24	11	
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		68.6	17.1	21,495	25,940	30,384				
WHEMLOCK		142.4	35.6	2,685	4,168	5,650				
NOB FIR		412.3	103.0		562	1,140				
TOTAL		56.0	14.0	26,381	30,669	34,957	133	33	15	

Log Stock Table - CCF

T05 R006 S35 Ty00RW
THRU
T05N R06W S35 Ty4RW

Project: **LANTERN**
Acres **225.00**

Page **3**
Date **12/16/2008**
Time **10:53:15AM**

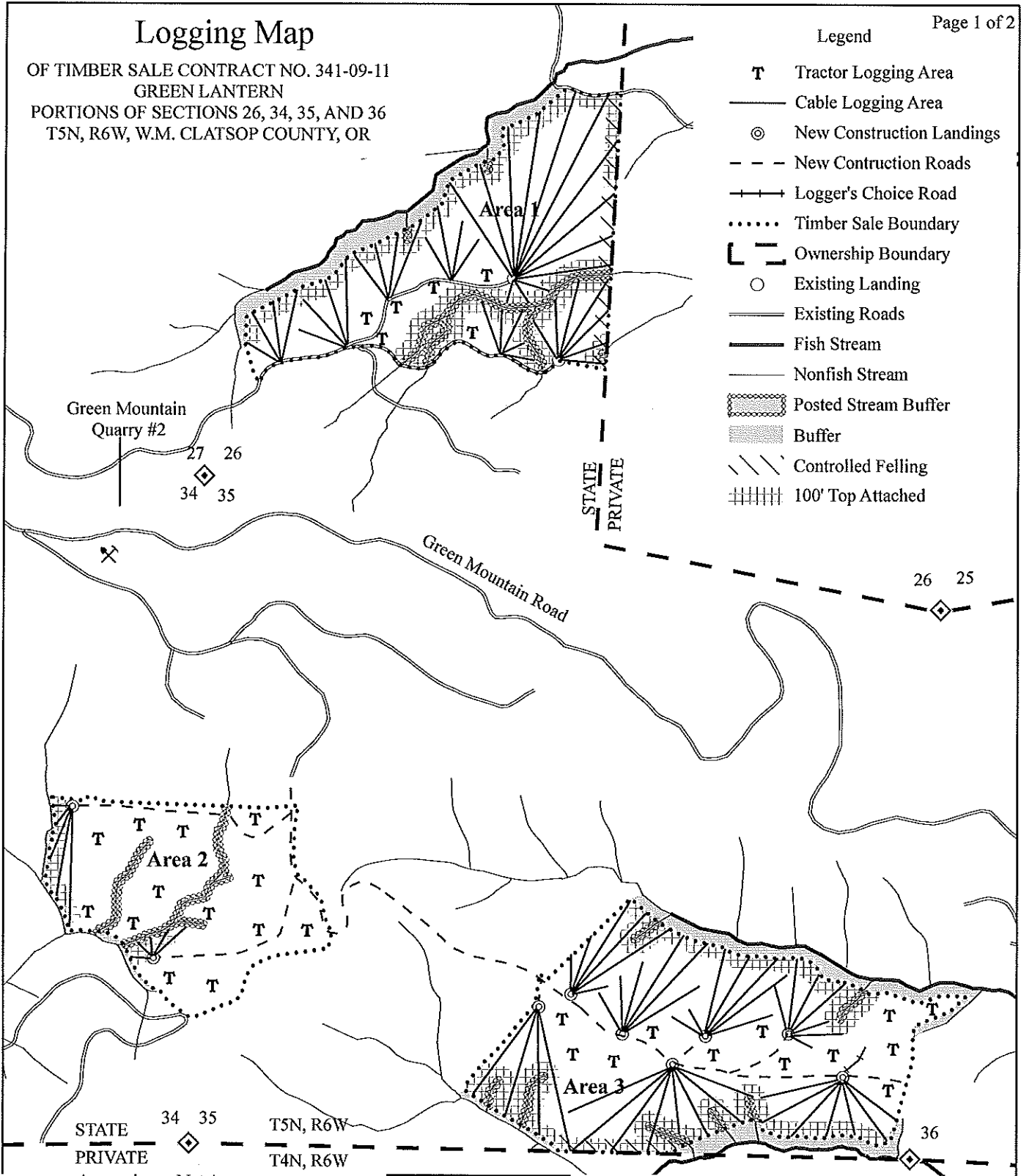
S T	So rt	Gr de	Log Len	Gross CCF	Def %	Net CCF	% Spc	Net Volume by Scaling Diameter in Inches												
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
D	DO	4S	17	10		10	.1			1	9									
D	DO	4S	18	12		12	.1			12										
D	DO	4S	19	15		15	.1				15									
D	DO	4S	20	2		2	.0			2										
D	DO	4S	21	23		23	.1			23										
D	DO	4S	22	40		40	.2			20	20									
D	DO	4S	23	1		1	.0			1										
D	DO	4S	24	2		2	.0			2										
D	DO	4S	25	1		1	.0				1									
D	DO	4S	27	1		1	.0				1									
D	DO	4S	29	33		33	.2			32	1									
D	DO	4S	30	106		106	.6			106										
D	DO	4S	32	1		1	.0				1									
D	DO	4S	35	2		2	.0			2										
D	Totals			17,825		17,825	83.1			2958	1435	2006	3252	2509	4042	1218	401			4
NF	DO	2S	32	1		1	29.0							1						
NF	DO	2S	40	2		2	62.4								2					
NF	DO	4S	19	0		0	8.6				0									
NF	Totals			4		4	.0				0			1	2					
Total	All Species			21,471		21,455	100.0		34	3921	1622	2405	4077	3359	4416	1218	401			4

Logging Map

OF TIMBER SALE CONTRACT NO. 341-09-11
 GREEN LANTERN
 PORTIONS OF SECTIONS 26, 34, 35, AND 36
 T5N, R6W, W.M. CLATSOP COUNTY, OR

Legend

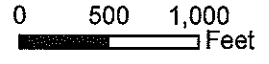
- T Tractor Logging Area
- Cable Logging Area
- ⊙ New Construction Landings
- New Construction Roads
- == Logger's Choice Road
- ⋯ Timber Sale Boundary
- [-] Ownership Boundary
- Existing Landing
- Existing Roads
- Fish Stream
- Nonfish Stream
- ▨ Posted Stream Buffer
- ▩ Buffer
- / / Controlled Felling
- ||||| 100' Top Attached



Approximate Net Acreage	
Area 1 (MC) - 72	Total (MC) Acres = 214
Area 2 (MC) - 50	
Area 3 (MC) - 92	
Area 4 (RW) - 8	Total (R/W) Acres = 11
Area 5 (RW) - 3	Total Sale Acres = 225

	Logging Breakdown	
	Cable	Tractor
Area 1	97%	3%
Area 2	15%	85%
Area 3	74%	26%
Total	65%	35%

Approximate Scale = 1":1,000'

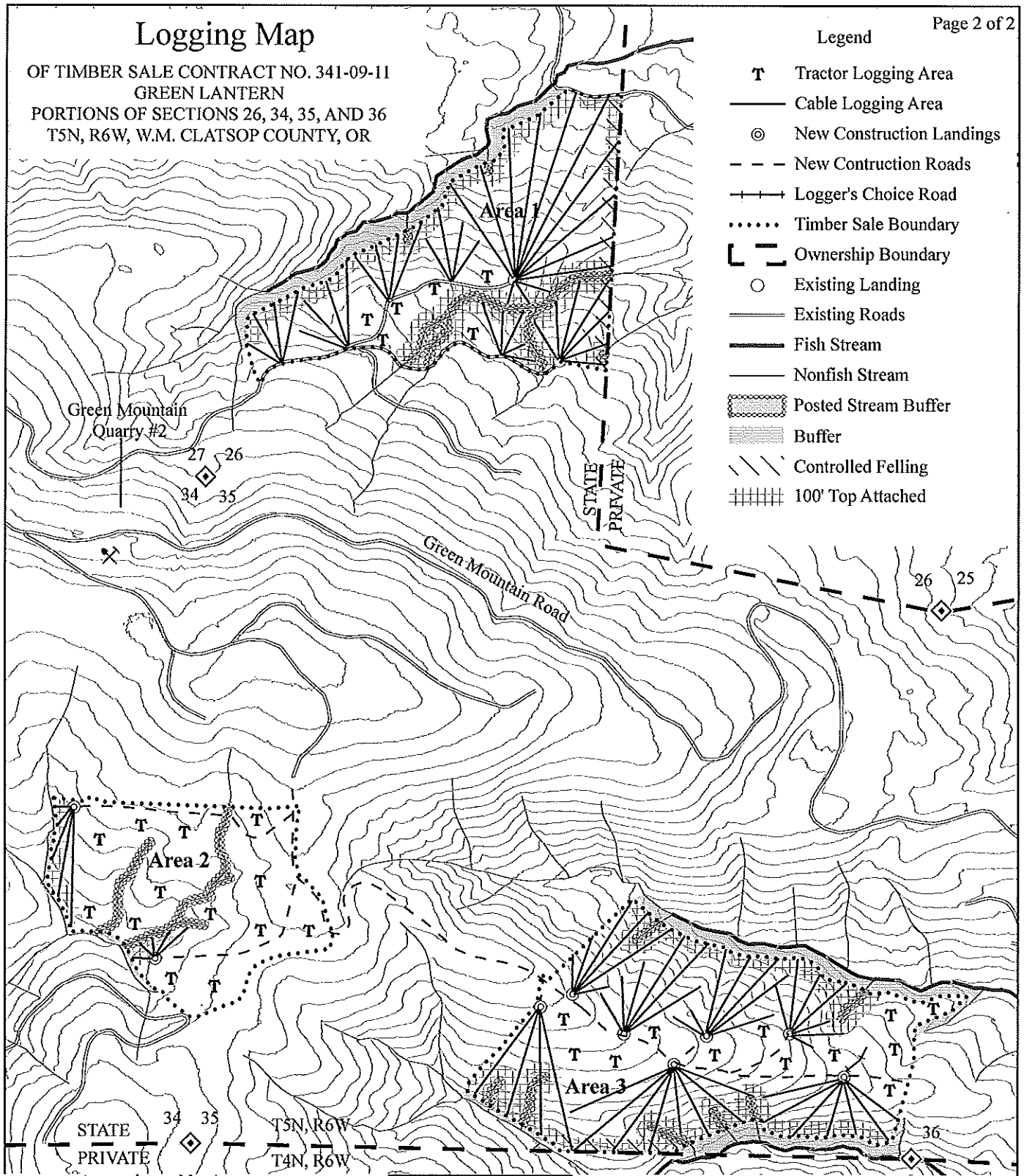


Logging Map

OF TIMBER SALE CONTRACT NO. 341-09-11
 GREEN LANTERN
 PORTIONS OF SECTIONS 26, 34, 35, AND 36
 T5N, R6W, W.M. CLATSOP COUNTY, OR

Legend

- T** Tractor Logging Area
- Cable Logging Area
- ⊙ New Construction Landings
- - - New Construction Roads
- +—+ Logger's Choice Road
- Timber Sale Boundary
- [-] Ownership Boundary
- Existing Landing
- Existing Roads
- Fish Stream
- Nonfish Stream
- [] Posted Stream Buffer
- [] Buffer
- /// Controlled Felling
- ||||| 100' Top Attached



Approximate Net Acreage

Area 1 (MC) - 72	
Area 2 (MC) - 50	Total (MC) Acres = 214
Area 3 (MC) - 92	Total (R/W) Acres = 11
Area 4 (RW) - 8	Total Sale Acres = 225
Area 5 (RW) - 3	

Logging Breakdown		
	Cable	Tractor
Area 1	97%	3%
Area 2	15%	85%
Area 3	74%	26%
Total	65%	35%



Approximate Scale = 1":1,000'

