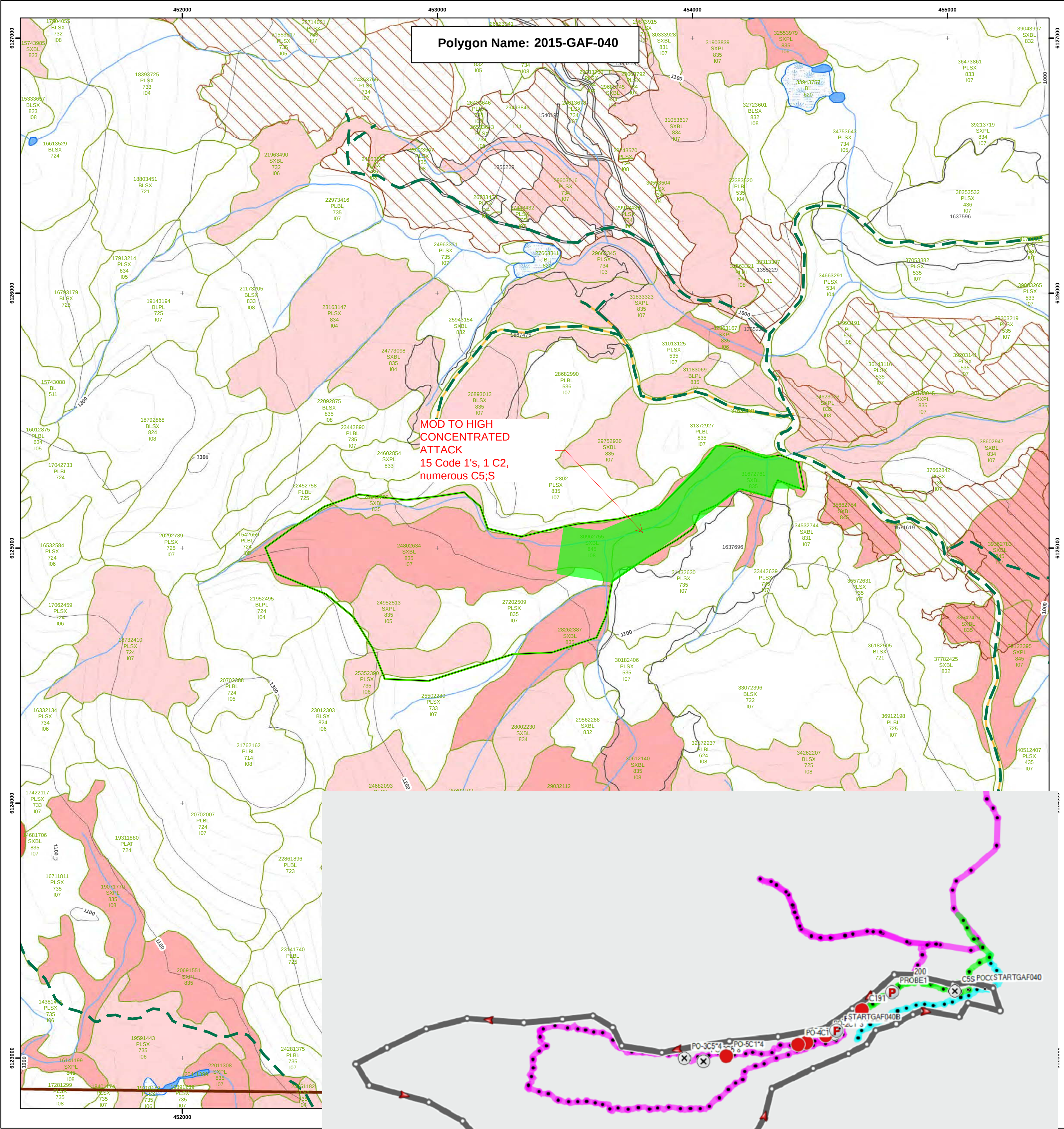
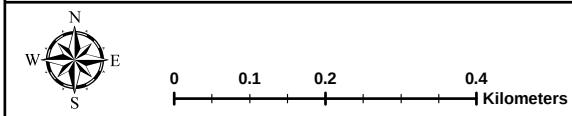




Spruce Bark Beetle Field Map

Polygon Name: 2015-GAF-040

Landscape
Unit/BMU: Gaffney
Region: Omineca
District: Mackenzie
Mapsheet: 093005
Hectares: 80.13
Scale: 1:10,000
When plotted on ANSIC
Coordinate System: NAD 1983 UTM Zone 10N
Datum: North American 1983
Date Drawn: 03/12/2015
Drawn By: msnively



**SENECA ENTERPRISES LTD.**

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SPRUCE BARK BEETLE REPORT

FH16DMK016,017

POLYGON: **2015-GAF-040** HECTARES: **80.13**

WALKTHROUGH DISTANCE: **3150**

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4) **4 12.7%**

SUMMARY OF CURRENT INFESTATION

Walkthrough shows only 12% infested pixels and the polygon has fairly heavy concentrated attack to the east off of older cutblock road. (Sled 9km from Nation FSR)

HEAVY CONCENTRATED ATTACK**ACCESS**

Truck parked at 24km on Nation FSR, sled 9km to the East portion of Polygon. Tried alternate access to the north along old cut block road to no avail

POLYGON FEATURES (Topography, Terrain, Timber Types, Age)

Drainage runs along the entire north of polygon. Slope rises from 0-45%, with the peak in the south. 60% spruce, 40% Balsam

SIZE, BOUNDARY and PATTERN OF INFESTATION

Walkthrough shows only 12% infested pixels, but these three pixels are heavily attacked with the sample showing 15 Code 1's, 1 Code 2 and numerous code 5 attack.

INCIDENCE AND SEVERITY OF ATTACK

Very severe attack in east portion of polygon. All attack noticed was on the first year of a 2 year cycle. Low Larval and attack densities but numerous attacks.

RISK OF BEETLE SPREAD

Moderate to high risk of spread west through polygon.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access along unplowed road to the east. Some major slopes and drainages within polygon could prove challenging

RECOMMENDATIONS**OPTION 1****TRAP TREES**

With a heavy sanitation rating, and having only 12% of pixels infested with attack to fly 2017, need to establish a strategy of trap tree trails as right alongside an unplowed road. Further within the polygon become steeper slopes and drainages.

OPTION 2**CRUISE HARVEST**

May monitor this year and schedule a walkthrough in 2016-2017 to determine extent of beetle and whether harvesting is a better option instead of the trap trees which require a return in a relatively isolated area.

2015-GAF-040

SPRUCE BEETLE WALKTHROUGH

Legend

-  MOD-HIGH CONCENTRATED ATTACK
-  PROBE LINES

C191

STARTGAF040B

PO-PROBE#2

PROBE#1

Google earth

© 2016 Ches/Spot Image

1 km

N

Summary						
2015-GAF-040	HEC	80.13	METERS WALKED	3150	% TRAVERSED	3.9%
PIXELS COVERED BY WALKTHROUGH	31.5	INFESTED PIXELS	4	ESTIMATED % OF BLOCK INFESTED (From Walk through)		12.7%

TABLE 5- Spruce Beetle Infestation Summary Sheet

OF NOTE- Results taken from a 100m Probe Line established at 1 per 50 hectares to represent

DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES
			2015		2014		2013		
			1	2	3	4	5	6	
17.5-25.0	3.3	42.9	0.0	0.0	0.0	0.0	0.0	0.0	16.5
25.1-30.0	5.3	15.9	0.0	0.0	0.0	0.0	0.0	0.0	26.5
30.1-35.0	7.1	42.6	35.5	0.0	0.0	0.0	0.0	0.0	35.5
35.1-40.0	9.4	56.4	37.6	0.0	0.0	0.0	0.0	0.0	47
40.1-45.0	11.6	11.6	23.2	0.0	0.0	0.0	0.0	0.0	0
45.1-50.0	13.8	13.8	27.6	0.0	0.0	0.0	0.0	0.0	0
50.1-55.0	16.2	0	0.0	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	0	0.0	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	0	25.3	0.0	0.0	0.0	0.0	0.0	0
TOTALS	332.4	183.2	149.2	0	0.0	0.0	0.0	0	125.5

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating

MEAN NO. OF ENTRANCE HOLES PER 225 cm2 PHLOEM SAMPLE	< 1 LOW Attack Density	MEAN NO. OF LIVING LARVAE PER 225 cm2 PHLOEM SAMPLE	< 4.9 LOW Mean Larval Density
	1.0- 1.9 MOD Attack Density		5.0 - 14.9 MOD Mean Larval Density
	2.0 - 3.9 HIGH Attack Density		15-24.9 HIGH Mean Larval Density
3.00	< 3.9 SEVERE Attack Density	3.50	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	44.9%	##	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	0.0%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	3258.4
% 2013 ATTACK	0.0%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	72.6%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

FROM 2 PROBE LINES, in heavy infestation

SUMMARY OF ALL CARDS FS1111							NUMBER OF CARDS			2	
ACCESS -		Truck parked at 24km on Nation FSR, sled 9km to the East portion of Polygon. Tried alternate access to the north along old cut block road to no avail									
POLYGON FEATURES -		Drainage runs along the entire north of polygon. Slope rises from 0-45%, with the peak in the south. 60% spruce, 40% Balsam									
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES		
			2015		2014		2013				
			1	2	3	4	5	6	BL	AT	
17.5-25.0	3.3	13	0	0	0	0	0	0	5	0	
25.1-30.0	5.3	3	0	0	0	0	0	0	5	0	
30.1-35.0	7.1	6	5	0	0	0	0	0	5	0	
35.1-40.0	9.4	6	4	0	0	0	0	0	5	0	
40.1-45.0	11.6	1	2	0	0	0	0	0	0	0	
45.1-50.0	13.8	1	2	0	0	0	0	0	0	0	
50.1-55.0	16.2	0	0	0	0	0	0	0	0	0	
55.1-60.0	18.7	0	0	0	0	0	0	0	0	0	
60.1 +	25.3	0	1	0	0	0	0	0	0	0	
TOTALS		30	14	0	0	0	0	0	20	0	
BARK SAMPLES 15 cm x 15 cm		NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN				
							Attacked Yr		Yr	Unattacked	
2		6	0	7	0	0	0		0	0	
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION											
Walkthrough shows only 12% infested pixels, but these three pixels are heavily attacked with the sample showing 15 Code 1's, 1 Code 2 and numerous code 5 attack.											
INCIDENCE AND SEVERITY OF THE INFESTATION											
Very severe attack in east portion of polygon. All attack noticed was on the first year of a 2 year cycle. Low Larval and attack densities but numerous attacks.											
RISK OF BEETLE SPREAD											
Moderate to high risk of spread west through polygon.											
ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES											
Good access along unplowed road to the east. Some major slopes and drainages within polygon could prove challenging											



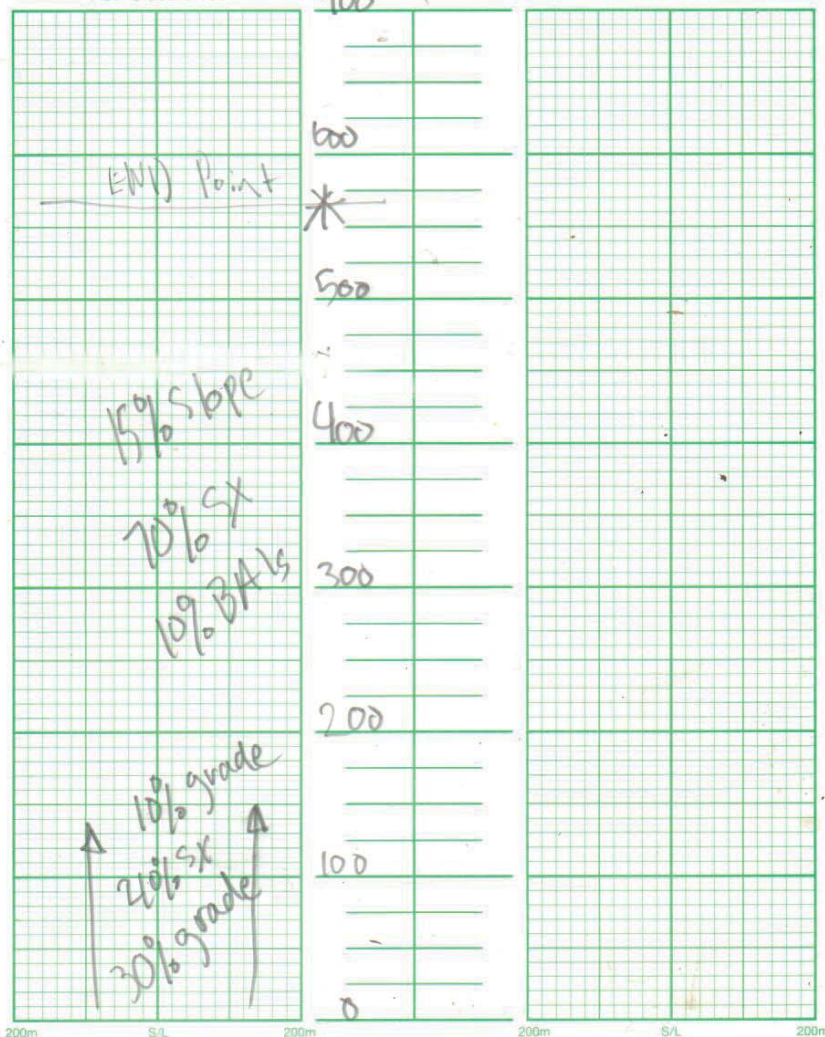
BEETLE PROBE CARD

LOCATION GAF-040		ELEVATION	LATITUDE 04539.02 6125147		PAGE 1	OF 1				
BEARING 192°	STRIP LINE NO. 1	STRIP WIDTH 10 m	DISTANCE 100m	BEETLE SPECIES ☐ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3									
25.1 - 30.0	5.3									
30.1 - 35.0	7.1		••							
35.1 - 40.0	9.4	••	••							
40.1 - 45.0	11.6	••	••							
45.1 - 50.0	13.8	Ⓡ								
50.1 - 55.0	16.2									
55.1 - 60.0	18.7									
60.1 -	25.3									
TOTALS		3	11							
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
1A	4	1	5	1	1	1	1			
1B	2	1	2	1	1	1	1			
COMMENTS										
CREW NAMES PPM Poirier						DATE Y M D 16 02 24				

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE

STRIP NO.: 1DIRECTION: 270°START STRIP: 0-700JOB NO.: GAF-040DATE: FEB 23, 16CREW: PRM Poirier

REMARKS:

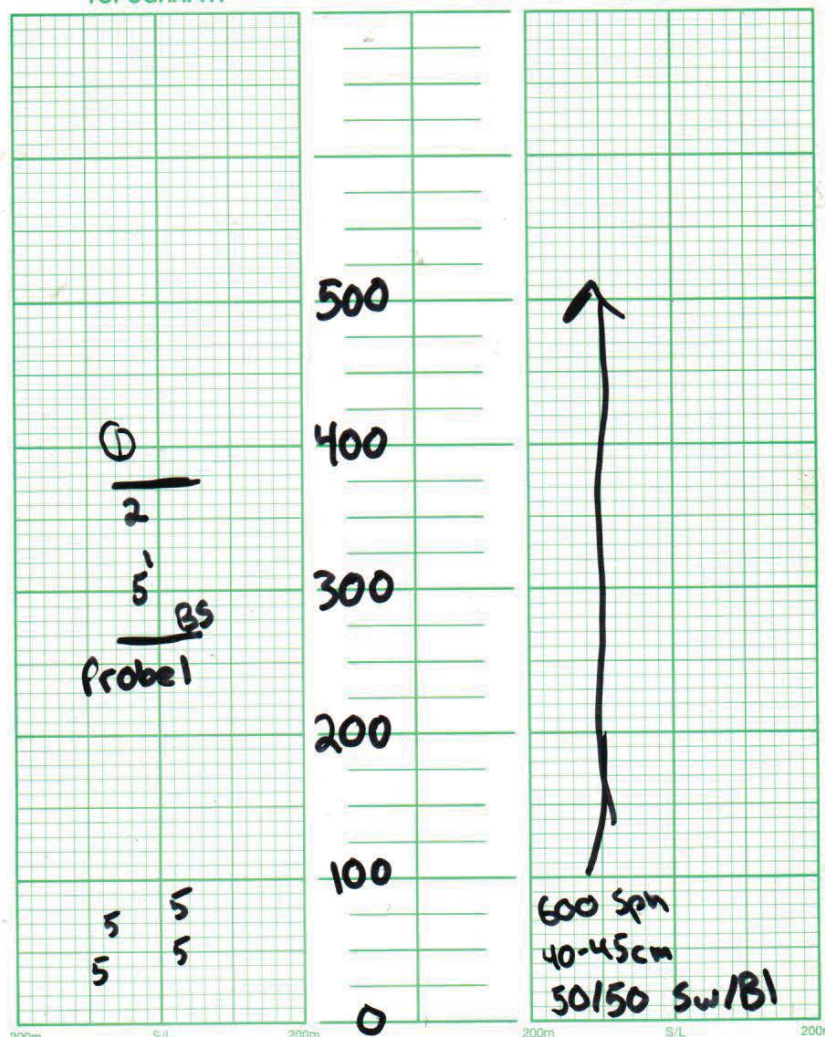


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TOPOGRAPHY

STRIP No. _____

TIMBER TYPE



STRIP NO.: _____

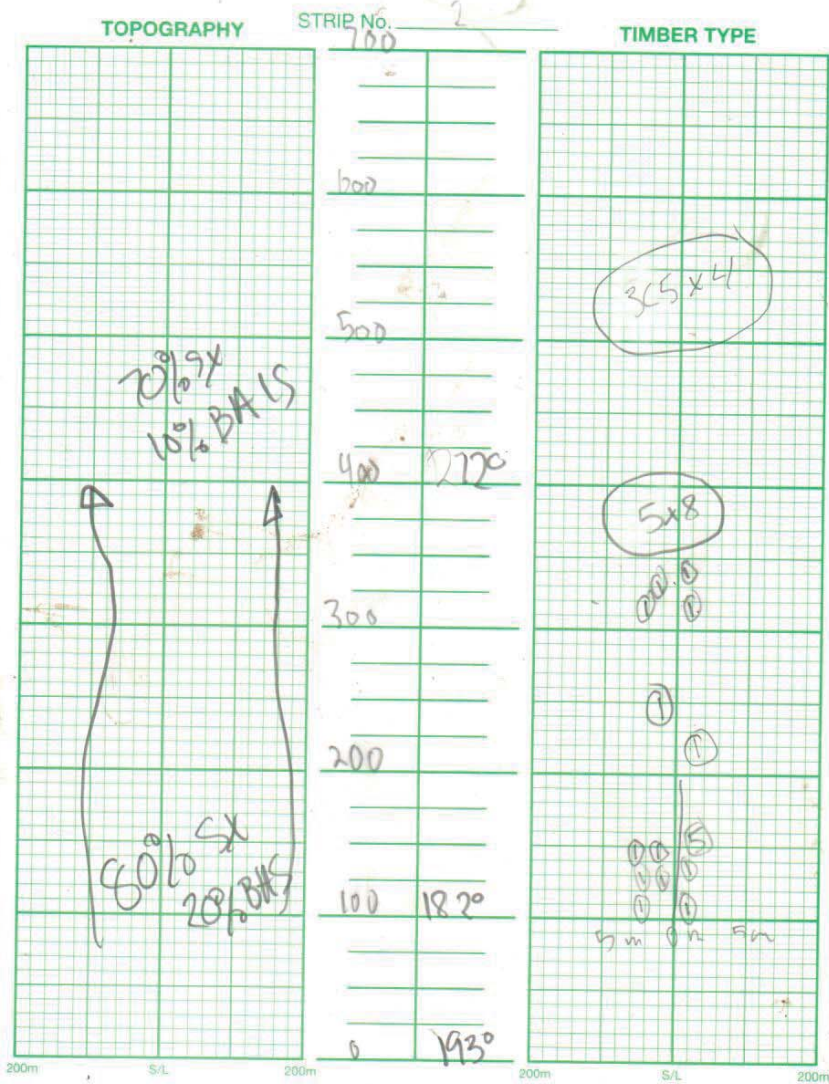
DIRECTION: _____

START STRIP: 1040454336JOB NO.: 6125328CREW: GAF-040DATE: Feb 23

REMARKS:



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STRIP NO.: 2

START STRIP: 0-700

JOB NO.: GAF-040

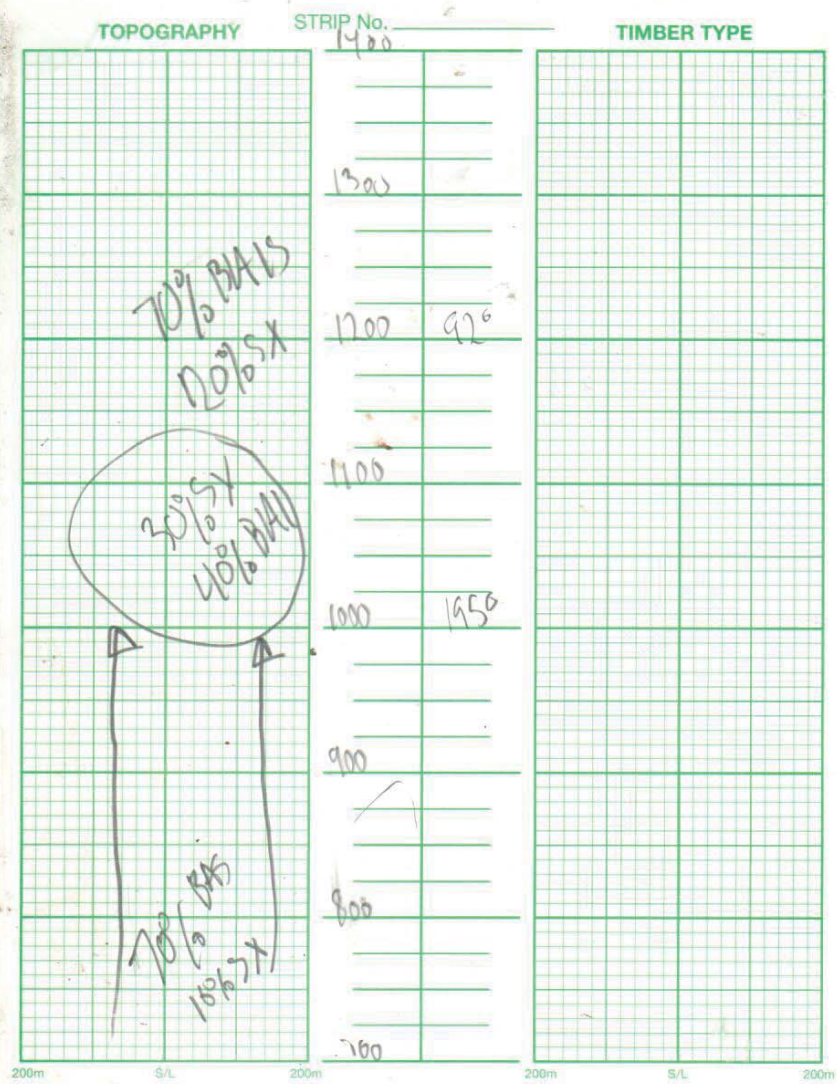
CREW: Pat Poirier

REMARKS:

DIRECTION: 193°, 182°, 272°

DATE: FEB 24, 16

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STRIP NO.: 2

START STRIP: 700-1400

JOB NO.: GAF-040

CREW: Pat Poirier

REMARKS:

DIRECTION: 272°, 195°, 92°

DATE: FEB 24, 16

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TOPOGRAPHY	STRIP No. 1	TIMBER TYPE
END Point	2100	
	2000	
	1900	
30% BALS		
DEAD PINE	1800	
	1700	
60% SX	1600	
Flat	1500	
40% BALS	1400	
	920	

STRIP NO.: 2 DIRECTION: 92°
 START STRIP: 1400 - 2100
 JOB NO.: CAE-040 DATE: FEB 24, 16
 CREW: Pat Rivier
 REMARKS:



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