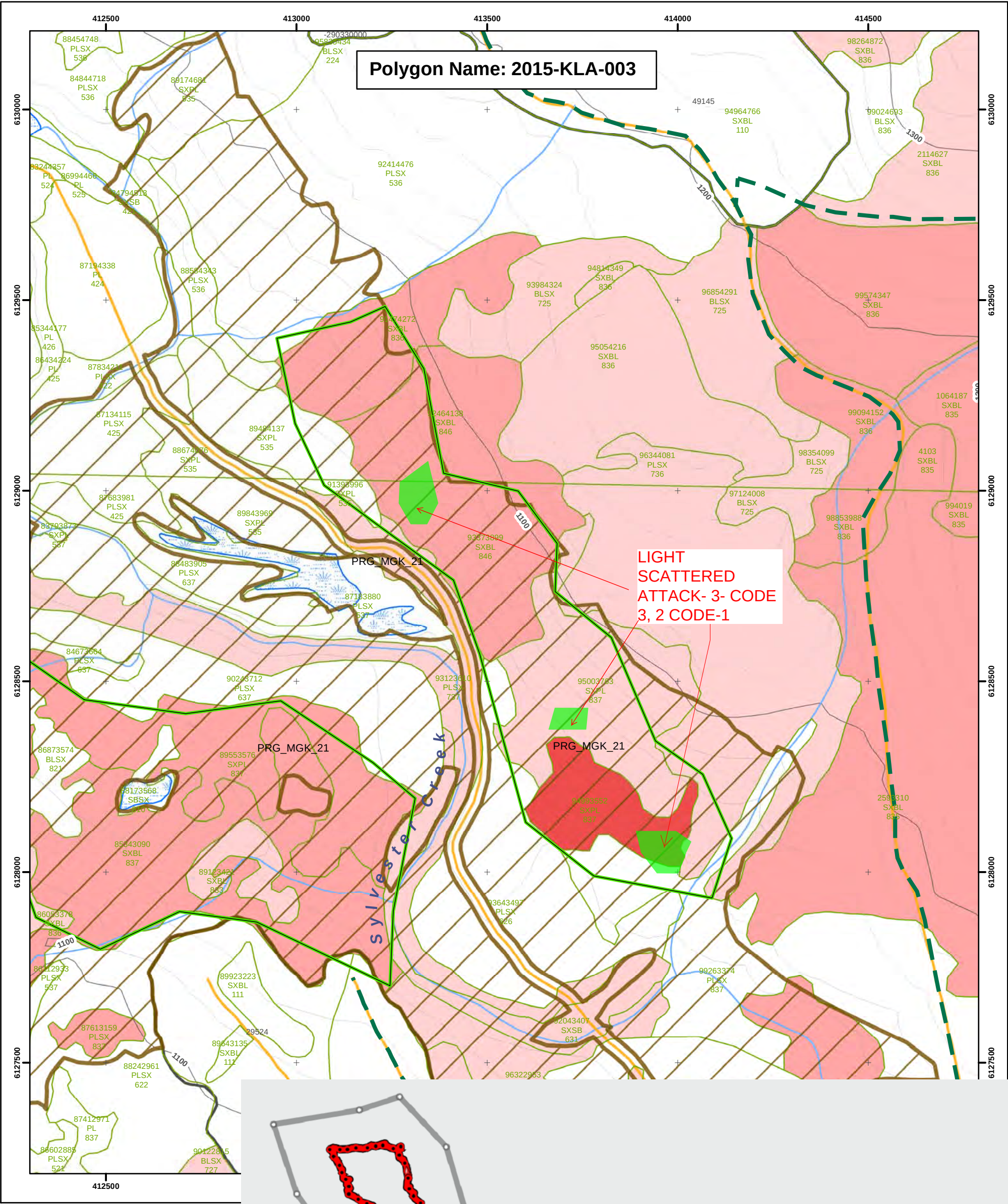
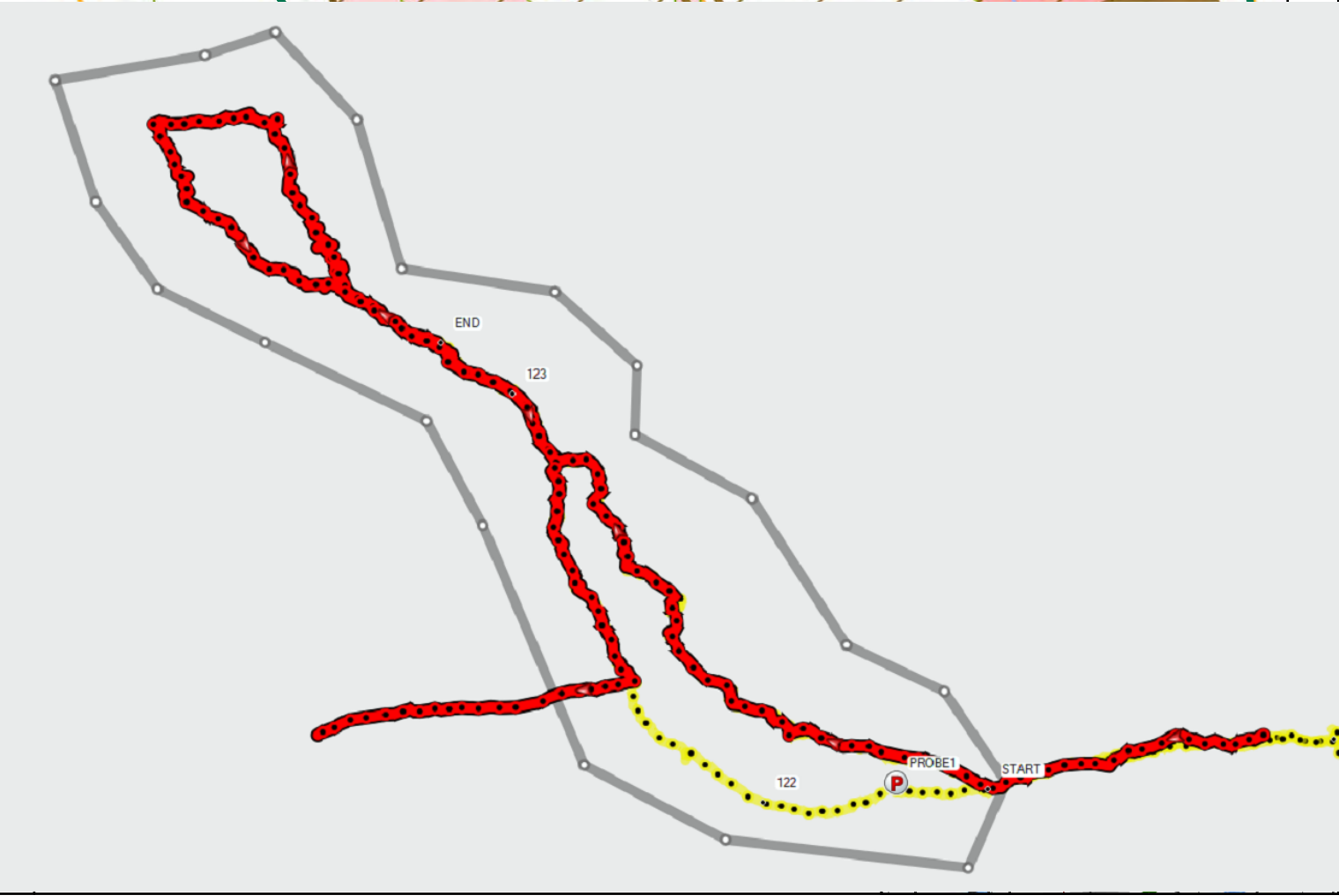






Ministry of
Forests, Lands and
Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2015-KLA-003

Landscape	
Unit/BMU:	Klawli
Region:	Omineca
District:	Mackenzie
Mapsheet:	093N08
Hectares:	57.32
Scale:	1:10,000
When plotted on 11x17	
Coordinate System:	NAD 1983 UTM Zone 10N
Datum:	North American 1983
Date Drawn:	02/12/2015
Drawn By:	msnively

**SENECA ENTERPRISES LTD.**

PO BOX 1902, PRINCE GEORGE, BC, V2L 5E3

Phone: (250) 561-0890, Fax: (250) 564-3275

WALKTHROUGH DISTANCE: 2600

**SPRUCE BARK BEETLE REPORT
FH16DMK016,017**

POLYGON: 2015-KLA-003 HECTARES: 57.32

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4) 3 11.5%**SUMMARY OF CURRENT INFESTATION**

Walkthrough showed attack at all stages and scattered with 3 pixels having 5 trees and spread most of the length of the polygon. Walkthrough difficult with melting conditions and 6km sled along with difficult walking. 2015KLA-002 adjacent but not complete at time of this report. Also 2015-GAF-039 close by and shows similar signs as this one.

LIGHT SCATTERED ATTACK

ACCESS

Truck parked on Giscome road. Sledged 6km down Unplowed road, then walked 500m to start of Polygon on south edge. (Difficult winter conditions at time of walkthrough) Past 2015-GAF-039

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

Long skinny polygon With Steep slopes throughout ranging 0-30%. Areas of dead pine and a mixed stand of Spruce, Aspen and Balsam

SIZE, BOUNDARY and PATTERN OF INFESTATION

Total found on walkthrough was 3-C1'S and 2 Code 3 2014 attack, 2015 attack is on a 2 year cycle. Patchy scattered attack amongst many old attacked 2013 trees.

INCIDENCE AND SEVERITY OF ATTACK

Total of 4 infested pixels with light scattered recent attack with 2C1'S, AND 3 C3'S. Two probe lines show mod attack density and low larval density. With several older attack, Sanitation rating moderate

RISK OF BEETLE SPREAD

The polygon has other polygons around it, 2015-KLA-002 and 2015-GAF-039. Light scattered attack within polygon and surrounded by mainly old dead pine stands. With 2014 attack found, risk of beetle spread is low-moderate and plans should include surrounding polygons if possible.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

500 m from unplowed road, varied terrain with steep slopes and drainages

RECOMMENDATIONS**OPTION 1****TRAP TREES/ FUNNEL TRAPS**

Sanitation and salvage rating Moderate from the two probe lines taken where TWO code 1s and ONE code 3 found. (3 PIXELS INFESTED, 5 TREES TOTAL FOUND INFESTED This area is about 600M from any road which may make trap trees difficult but some beetle will fly in 2016. Will likely need to do multiple treatments on this area and may be better suited due to its location to wait or use funnel traps

OPTION 2**MONITOR**

Monitor area as beetle will fly in 2016 and 2017. With location, may be better to schedule another walkthrough 2016/2017 to reevaluate. Mix of all years found in walkthrough and fairly isolated with not a large risk of spread, okan with surrounding polygons 2015-GAF-039 and 2015-KLA-002

2015-KLA-003

SPRUCE BEETLE WALKTHROUGHS

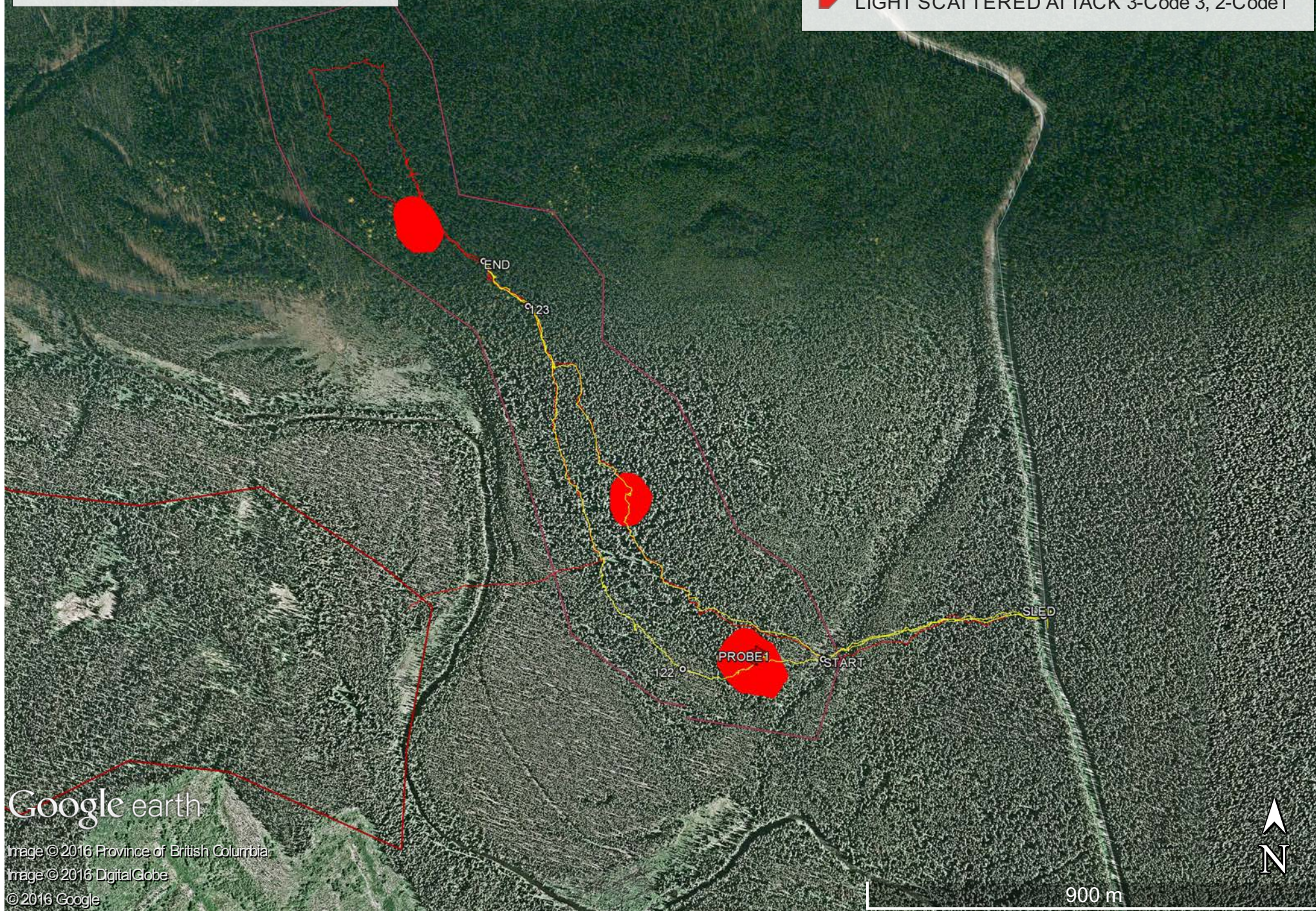
Legend



PROBES



LIGHT SCATTERED ATTACK 3-Code 3, 2-Code1



Google earth

Image © 2016 Province of British Columbia
Image © 2016 DigitalGlobe
© 2016 Google



900 m

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	0	0.0	0.0	0.0	0.0	0.0	0.0	0
25.1-30.0	5.3	53	5.3	0.0	0.0	0.0	0.0	2.7	5.3
30.1-35.0	7.1	63.9	0.0	0.0	0.0	0.0	14.2	3.6	0
35.1-40.0	9.4	112.8	9.4	0.0	0.0	0.0	0.0	9.4	9.4
40.1-45.0	11.6	139.2	0.0	0.0	11.6	0.0	11.6	5.8	11.6
45.1-50.0	13.8	41.4	0.0	0.0	0.0	0.0	13.8	6.9	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	37.4	0.0	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	0	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	541.9	447.7	14.7	0	11.6	0.0	39.6	28.3	26.3

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
1.75	< 3.9 SEVERE Attack Density	3.25	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough						
% 2015 ATTACK	2.7%	2.7	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	2.1%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	693.6
% 2013 ATTACK	12.5%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	95.4%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

From 2 probe lines where attack found. (3 total infested pixels, 2 represented in probes)

SUMMARY OF ALL CARDS FS1111		NUMBER OF CARDS	2
ACCESS -	Truck parked on Giscome road. Sledded 6km down Unplowed road, than walked 500m to start of Polygon on south edge. (Difficult winter conditions at time of walkthrough) Past 2015-GAF-039		

POLYGON FEATURES -	Long skinny polygon With Steep slopes throughout ranging 0-30%. Areas of dead pine and a mixed stand of Spruce, Aspen and 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	0	0	0	0	0	0	0	0	0
25.1-30.0	5.3	10	1	0	0	0	0	1	1	0
30.1-35.0	7.1	9	0	0	0	0	2	1	0	0
35.1-40.0	9.4	12	1	0	0	0	0	2	1	0
40.1-45.0	11.6	12	0	0	1	0	1	1	1	0
45.1-50.0	13.8	3	0	0	0	0	1	1	0	0
50.1-55.0	16.2	0	0	0	0	0	0	0	0	0
55.1-60.0	18.7	2	0	0	0	0	0	0	0	0
60.1 +	25.3	0	0	0	0	0	0	0	0	0

TOTALS			48	2	0	1	0	4	6	3	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			
4	7	1	13	0	0	0	0	0			

SIZE, BOUNDARY AND PATTERN OF THE INFESTATION
<p>1. The size of the infestation is determined by the number of individuals of the pest species found in the infested area.</p> <p>2. The boundary of the infestation is determined by the area of the infested area.</p> <p>3. The pattern of the infestation is determined by the distribution of the pest species in the infested area.</p>

Total found on walkthrough was 3-C1'S and 2 Code 3 2014 attack, 2015 attack is on a 2 year cycle. Patchy scattered attack amongst many old attacked 2013 trees.

INCIDENCE AND SEVERITY OF THE INFESTATION

Total of 4 infested pixels with light scattered recent attack with 2C1'S, AND 3 C3'S. Two probe lines show moderate attack density and low larval density. With several older attack, Sanitation rating moderate

RISK OF BEETLE SPREAD

The polygon has other polygons around it, 2015-KLA-002 and 2015-GAF-039. Light scattered attack within polygon and surrounded by mainly old dead pine stands. With 2014 attack found, risk of beetle spread is low-moderate and plans should include surrounding polygons if possible.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

500 m from unplowed road, varied terrain with steep slopes and drainages

SPRUCE BEETLE PROBE CARD

LOCATION 0414001 6128089		PAGE 1 OF 1	
BEARING 260°		DISTANCE 100m	
STRIP WIDTH 10m			

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		
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		22	1				3		2	

BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN	
						Attacked	Unattacked
1a	3	1	3	1	1	1	1
1b	3	1	2	1	1	1	1

COMMENTS

CREW NAMES Dailen V Blake B

DATE 16 / 1 / 27

FS 1111 RPG 2000/01 7530881048 (100/bdl)

SPRUCE BEETLE PROBE CARD

LOCATION 0413312 6129018		PAGE 1 OF 1	
BEARING 344°		DISTANCE 100	
STRIP WIDTH 10			

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		
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		26	1	1	1	2	1	6		

BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN	
						Attacked	Unattacked
1a	2	1	3	1	1	1	1
1b	3	1	5	1	1	1	1

COMMENTS

CREW NAMES Dailen V

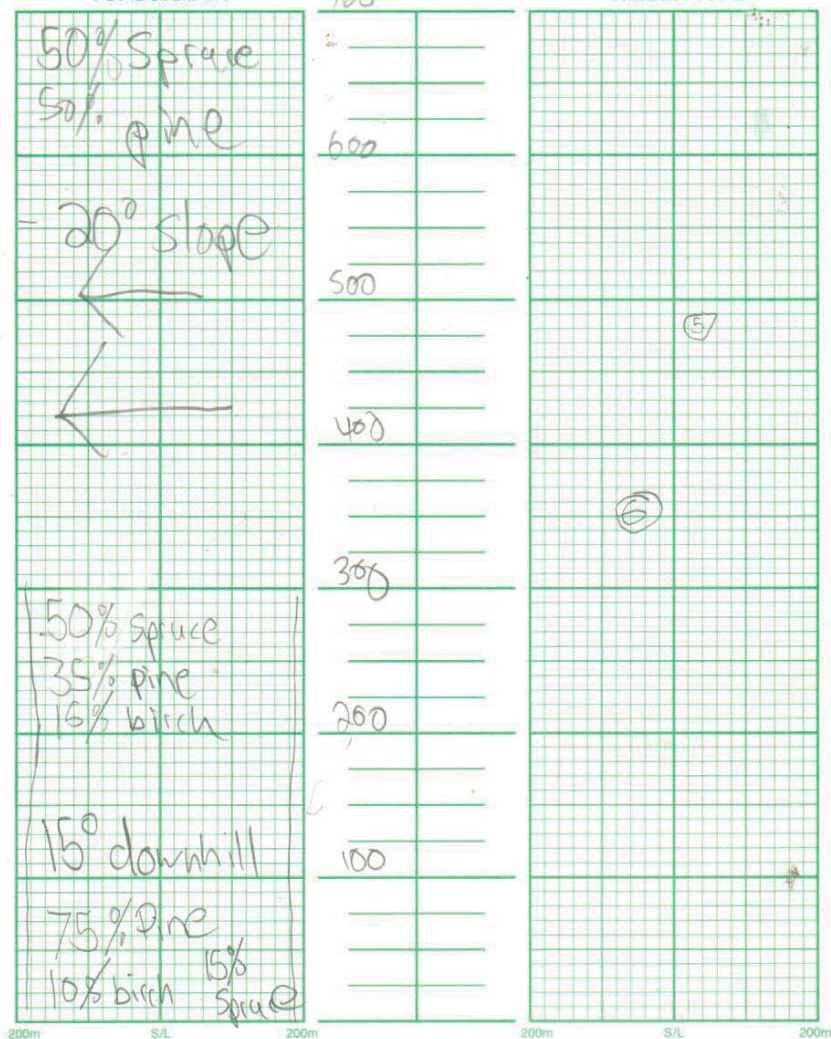
DATE 16 / 1 / 27

FS 1111 RPG 2000/01 7530881048 (100/bdl)

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE



STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

REMARKS:

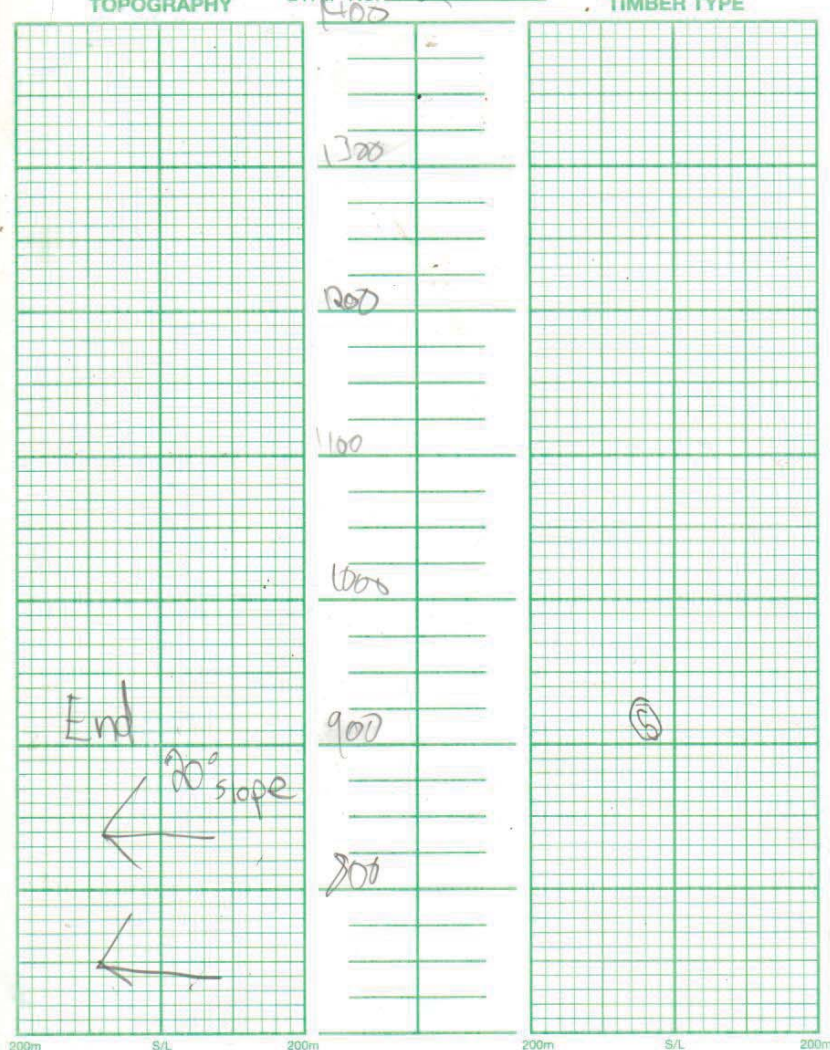


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TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

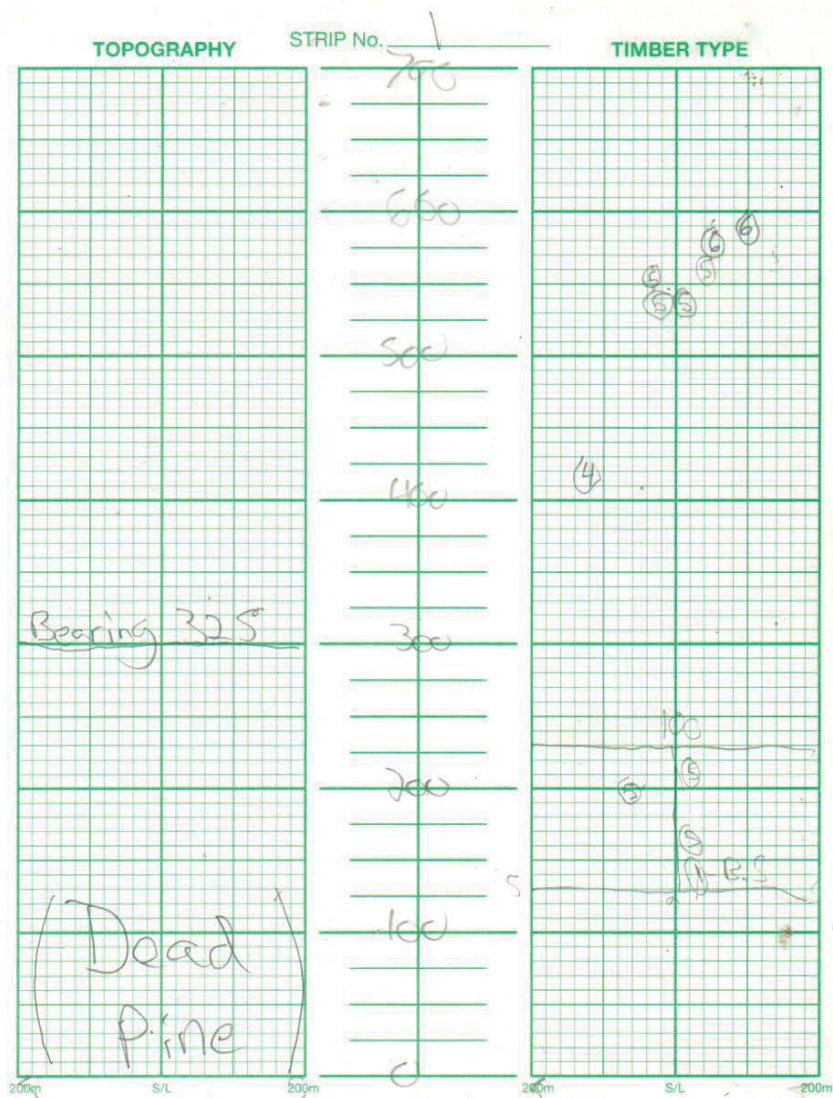
DATE:

CREW:

REMARKS:



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STRIP NO.: 1 DIRECTION: 265°

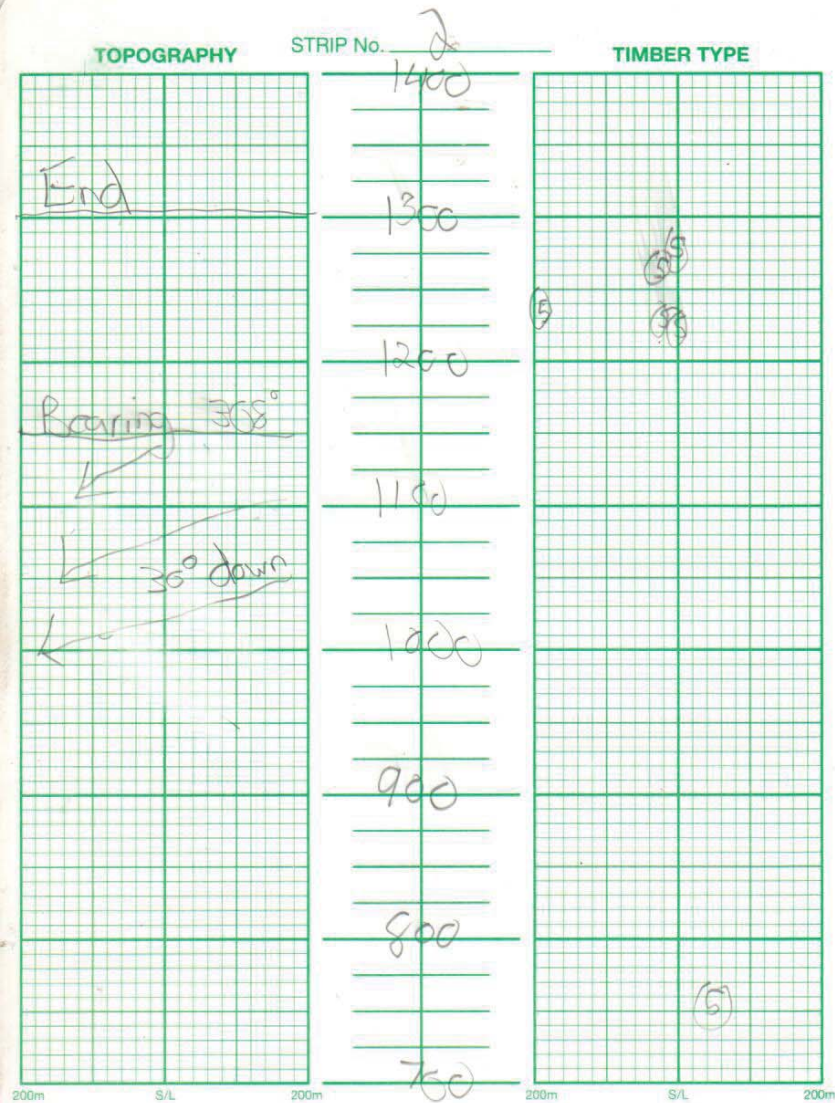
START STRIP: 0-700

JOB NO.: KLA-003 DATE: Jan 27/16

CREW: Drilen.V

REMARKS:

irl www.irlsupplies.com
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STRIP NO.: 2 DIRECTION: 325°(850m) 308°(150m)

START STRIP: 700-1400

JOB NO.: KLA-003 DATE: Jan. 27/16

CREW: Drilen.V

REMARKS: Did not finish poly.

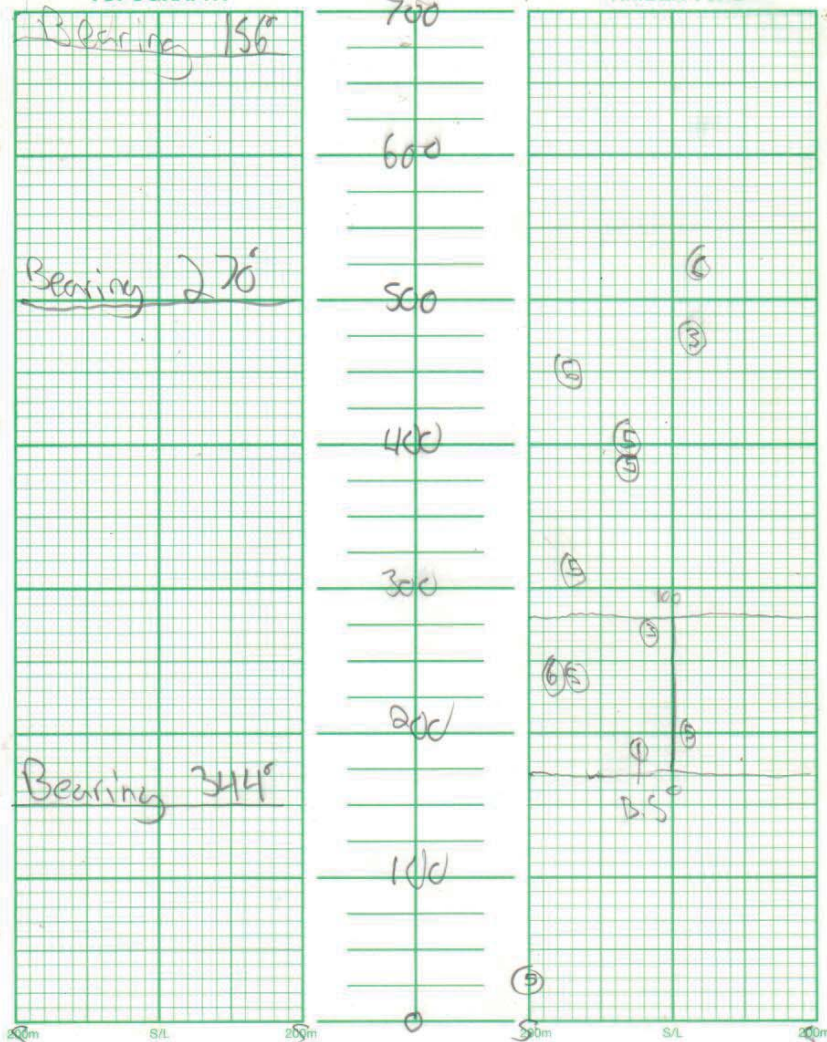
irl www.irlsupplies.com
Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

1 Day 2

TIMBER TYPE



STRIP NO.: 1

DIRECTION:

300°

START STRIP:

0 - 700m

JOB NO.:

KLA-003

DATE:

Feb. 1/16

CREW:

Dailen V

REMARKS:



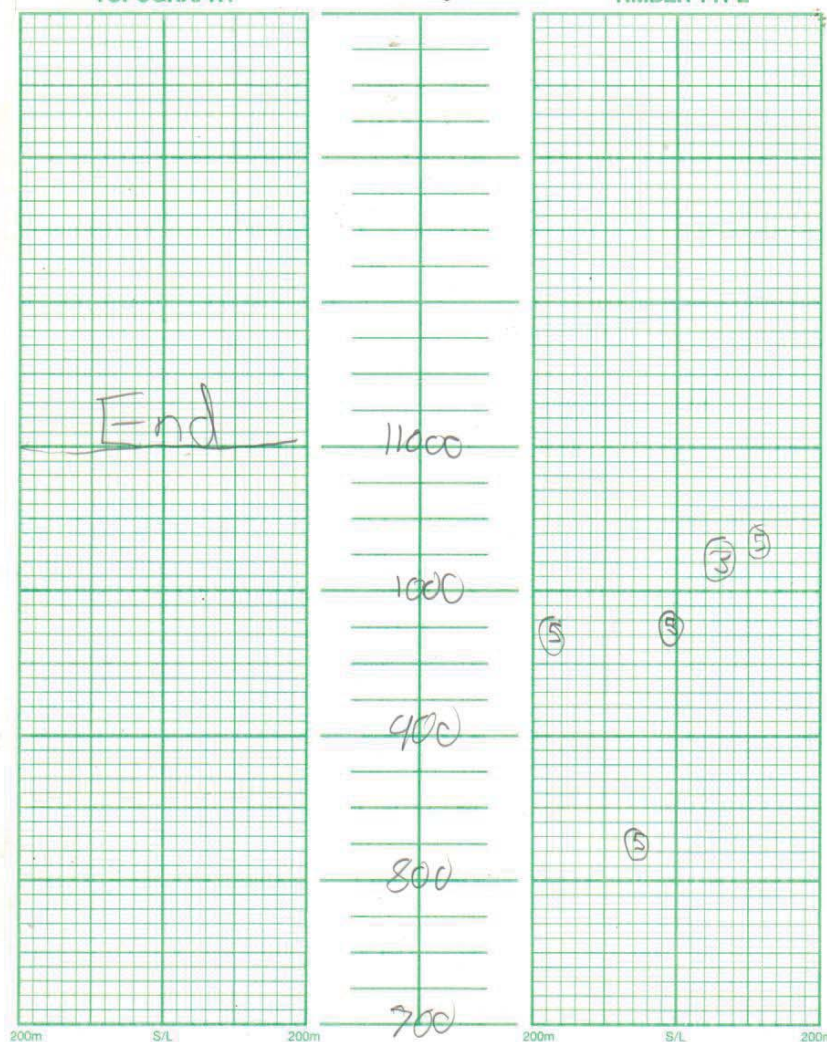
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TOPOGRAPHY

STRIP No.

2 Day 2

TIMBER TYPE



STRIP NO.: 2

DIRECTION:

156°

START STRIP:

700m - 1100m

JOB NO.:

KLA-003

DATE:

Feb. 1/16

CREW:

Dailen V

REMARKS:



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