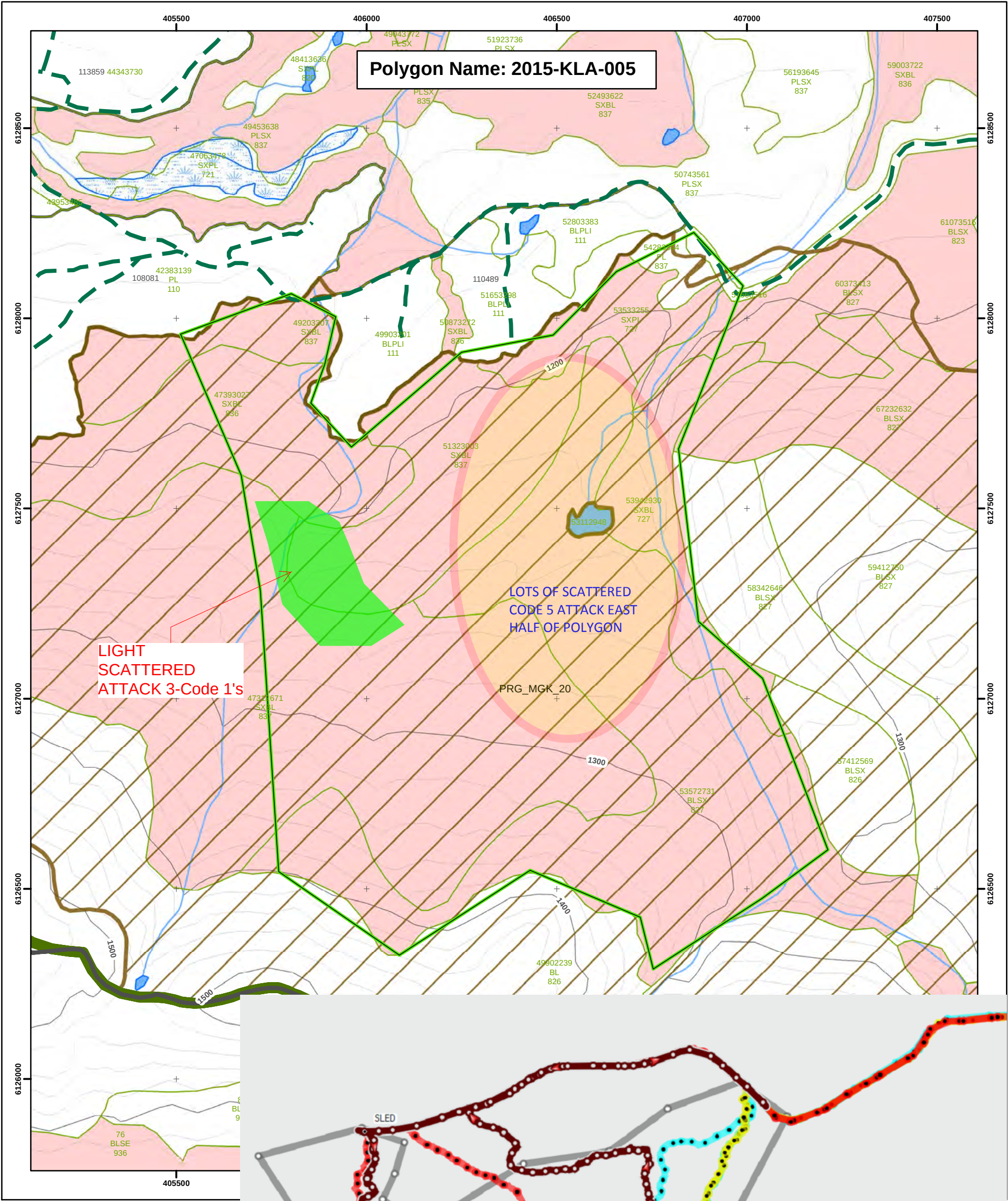




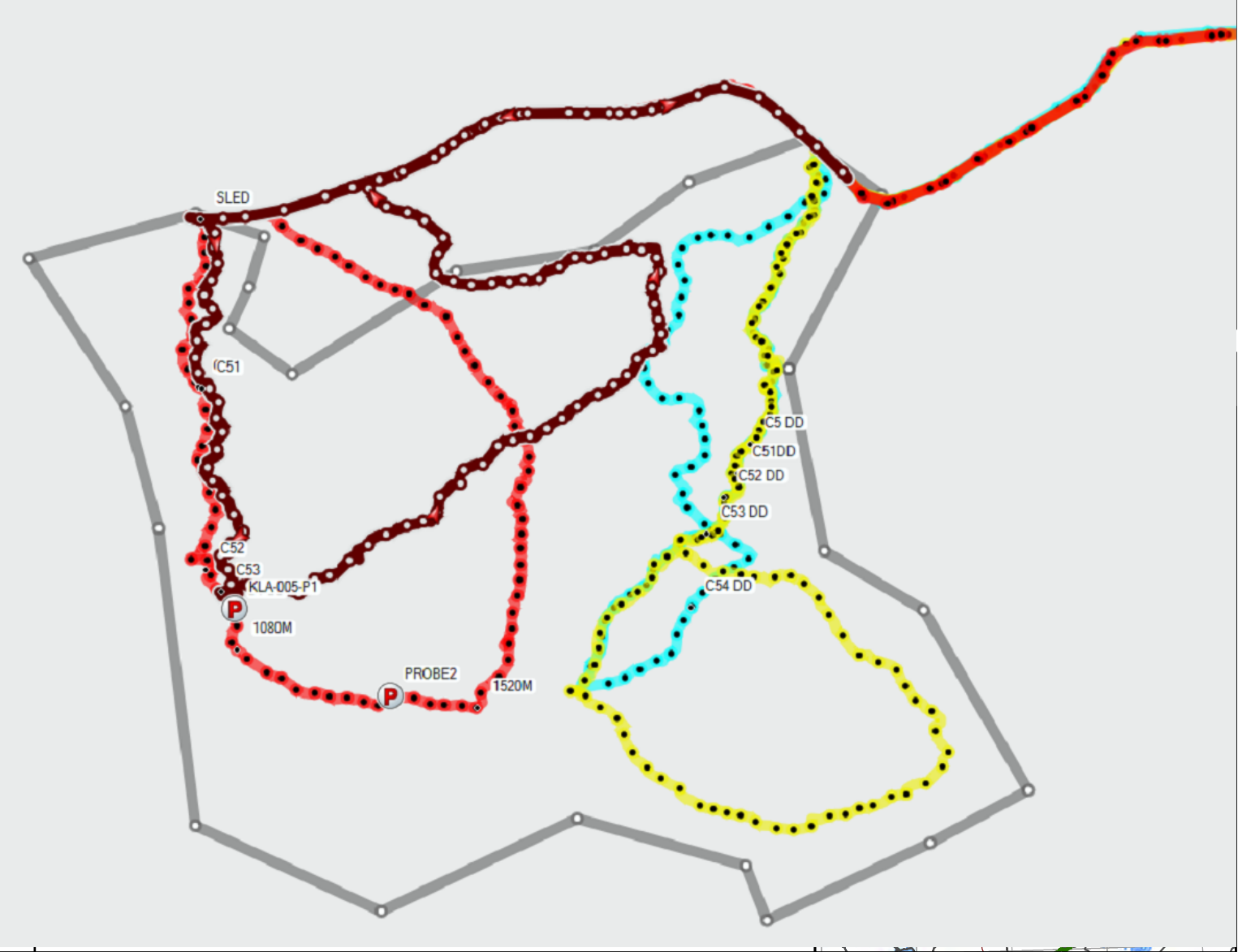


Ministry of
Forests, Lands and
Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2015-KLA-005

Landscape	Klawli
Unit/BMU:	Omineca
Region:	Mackenzie
District:	093N08
Mapsheets:	197.5
Hectares:	1:10,000
Scale:	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: **11100****SPRUCE BARK BEETLE REPORT
FH16DMK016,017**POLYGON: **2015-KLA-005** HECTARES: **197.50**ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4) **3 2.7%****SUMMARY OF CURRENT INFESTATION**

Found 3 infested pixels in Walkthrough with one code 1 attacked tree in each.. These were in the Western portion of polygon within a mostly Balsam patch with Larger DBH Spruce. While only 3 Code 1 trees found which are on a two year cycle, there was plenty of older attacked spruce scattered throughout polygon with it more prevalent around wet area in the east and along the draw there.

LIGHT SCATTERED ATTACK**ACCESS**

Truck parked on Giscome Road. Than sled on unplowed road for 12km to polygon. Road accesses north edge of polygon

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

Road along top of polygon. Slope rising north to south 0-30% throughout polygon. Areas with heavy balsam with scattered patches of spruce. All trees large DBH.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Walkthrough found 3 code 1 trees on 1st of two year cycle. Scattered Code 5 attack throughout polygon. Light scattered attack on larger spruce trees

INCIDENCE AND SEVERITY OF ATTACK

Light sanitation rating from two probe lines also light larval density. Patchy infestation with three infested pixels having one code 1 tree in each.

RISK OF BEETLE SPREAD

With little attack noticed and minimal spruce, low rate of spread. Lots of older attack on east side of polygon and also scattered throughout, may be isolated other attack not picked up through that area as well although none noticed.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access with unplowed road along top of polygon, couple of drainages run through and wetter on east side.

RECOMMENDATIONS**OPTION 1****MONITOR**

As only 3 code 1 trees found and scattered in a stand dominated by Balsam, best to shcedule another walkthrough 2016/2017. There are many code 5 attacked trees and infested trees found are on the first year of a 2 year cycle.

OPTION 2**TRAP TREES**

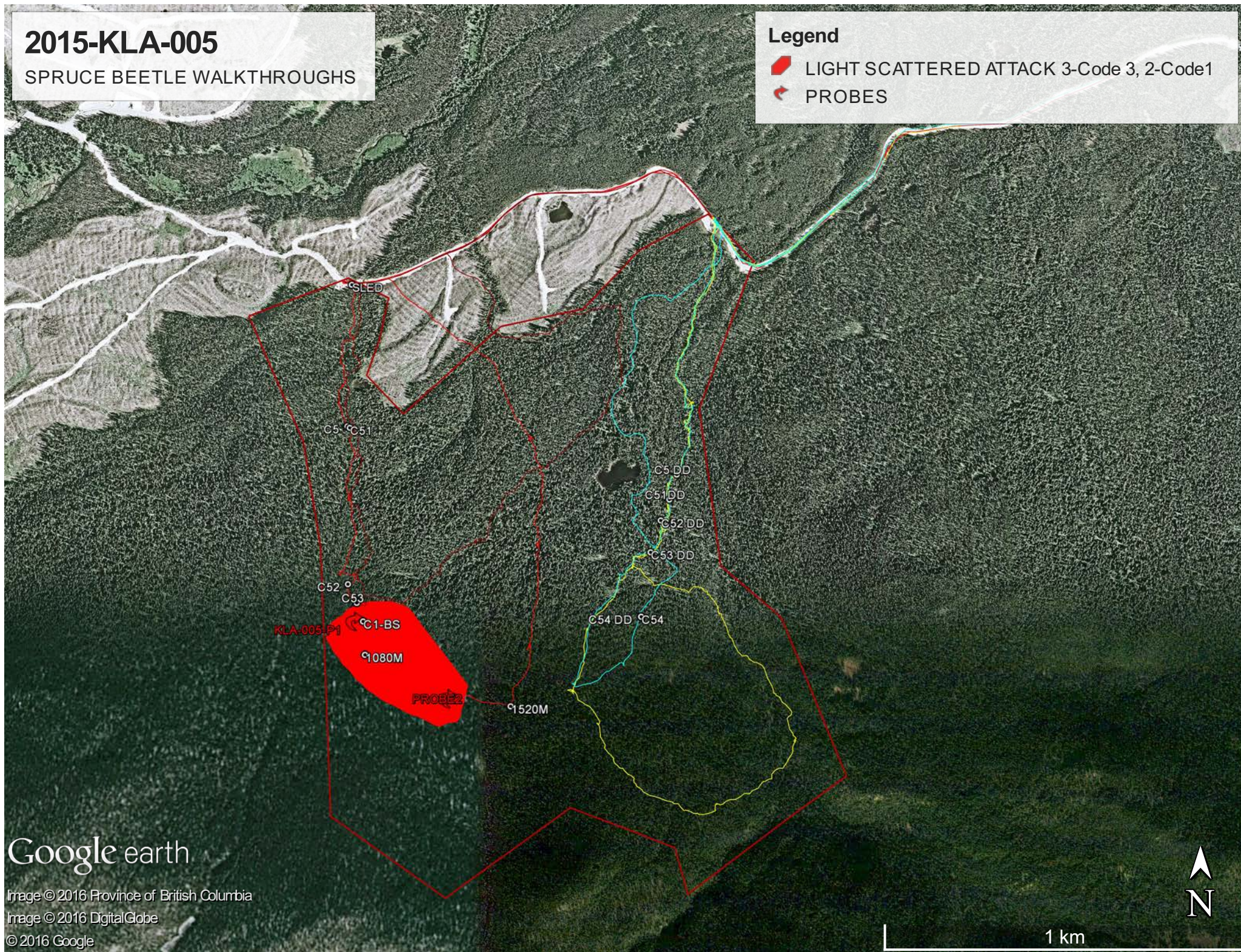
As close enough to a road (Unplowed), would be effective to Lay trap trees in Fall Winter 2016/2017 as infected trees are on the first year of a 2 year cycle with flight in 2017. Can work into plans within area.

2015-KLA-005

SPRUCE BEETLE WALKTHROUGHS

Legend

-  LIGHT SCATTERED ATTACK 3-Code 3, 2-Code1
-  PROBES



Google earth

Image © 2016 Province of British Columbia

Image © 2016 DigitalGlobe

© 2016 Google

Summary						
2015-KLA-005		197.50	METERS WALKED	11100	% TRAVERSED	5.6%
PIXELS COVERED BY WALKTHROUGH	111	INFESTED PIXELS	3	ESTIMATED % OF BLOCK INFESTED (From Walk through)		2.7%

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	0	0.0	0.0	0.0	0.0	0.0	0.0	0
25.1-30.0	5.3	0	0.0	0.0	0.0	0.0	0.0	0.0	21.2
30.1-35.0	7.1	21.3	0.0	0.0	0.0	0.0	0.0	0.0	63.9
35.1-40.0	9.4	28.2	0.0	0.0	0.0	0.0	0.0	0.0	9.4
40.1-45.0	11.6	127.6	0.0	0.0	0.0	0.0	0.0	0.0	197.2
45.1-50.0	13.8	69	0.0	0.0	0.0	0.0	0.0	0.0	234.6
50.1-55.0	16.2	16.2	16.2	0.0	0.0	0.0	0.0	0.0	64.8
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	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	278.5	262.3	16.2	0	0.0	0.0	0.0	0	591.1

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
1.50	< 3.9 SEVERE Attack Density	2.00	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough				
% 2015 ATTACK	5.8%	5.8	SANITATION AND SALVAGE HARVEST PRIORITY RATING	
% 2014 ATTACK	0.0%	##	LIGHT 0-599	186.3
% 2013 ATTACK	0.0%	##	MODERATE 600-999	
% HOST IN STAND	32.0%	##	HEAVY 1000+	
			LEAVE (Monitor, Trap Trees, Baits, etc)	
			PROBE (To Obtain Further Info)	
			RECOMMEND CRUISING/ LOGGING	

FROM 2 PROBE LINES, 2ND PROBE HAD NO ATTACK.

SUMMARY OF ALL CARDS FS1111						NUMBER OF CARDS		2		
ACCESS -		Truck parked on Giscome Road. Than sled on unplowed road for 12km to polygon. Road accesses north edge of polygon								
POLYGON FEATURES -		Road along top of polygon. Slope rising north to south 0-30% throughout polygon. Areas with heavy balsam with scattered patches of spruce. All trees large DBH.								
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						O+AW6:B18THER 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	0	0	0	0	0	0	0	4	0
30.1-35.0	7.1	3	0	0	0	0	0	0	9	0
35.1-40.0	9.4	3	0	0	0	0	0	0	1	0
40.1-45.0	11.6	11	0	0	0	0	0	0	17	0
45.1-50.0	13.8	5	0	0	0	0	0	0	17	0
50.1-55.0	16.2	1	1	0	0	0	0	0	4	0
55.1-60.0	18.7	0	0	0	0	0	0	0	0	0
60.1 +	25.3	0	0	0	0	0	0	0	0	0
TOTALS		23	1	0	0	0	0	0	52	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		Unattacked	
							Yr	Yr		
2		3	1	4	0	0	0	0	0	0

SIZE, BOUNDARY AND PATTERN OF THE INFESTATION

Walkthrough found 3 code 1 trees on 1st of two year cycle. Scattered Code 5 attack throughout polygon. Light scattered attack on larger spruce trees

INCIDENCE AND SEVERITY OF THE INFESTATION

Light sanitation rating from two probe lines also light larval density. Patchy infestation with three infested pixels having one code 1 tree in each.

RISK OF BEETLE SPREAD

With little attack noticed and minimal spruce, low rate of spread. Lots of older attack on east side of polygon and also scattered throughout, may be isolated other attack not picked up through that area as well although none noticed.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access with unplowed road along top of polygon, couple of drainages run through and wetter on east side.

BRITISH
COLUMBIA

BEETLE PROBE CARD

PROBE 1

LOCATION		SS 16.864		ELEVATION		LATITUDE		PAGE		OF	
KLN-005		124 28.941		1300							
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES							
180°	1	10m	100	☒ 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	1									
35.1 - 40.0	9.4										
40.1 - 45.0	11.6	1									
45.1 - 50.0	13.8	1									
50.1 - 55.0	16.2	1									
55.1 - 60.0	18.7										
60.1 +	25.3										
TOTALS		12								21	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
N	1	1	1	1	1						
S	2	1	3	1	1						
COMMENTS											
① = BS Large BL & SX in PROBE											
CREW NAMES						DATE					
James Kelly						Y M D 16 01 20					

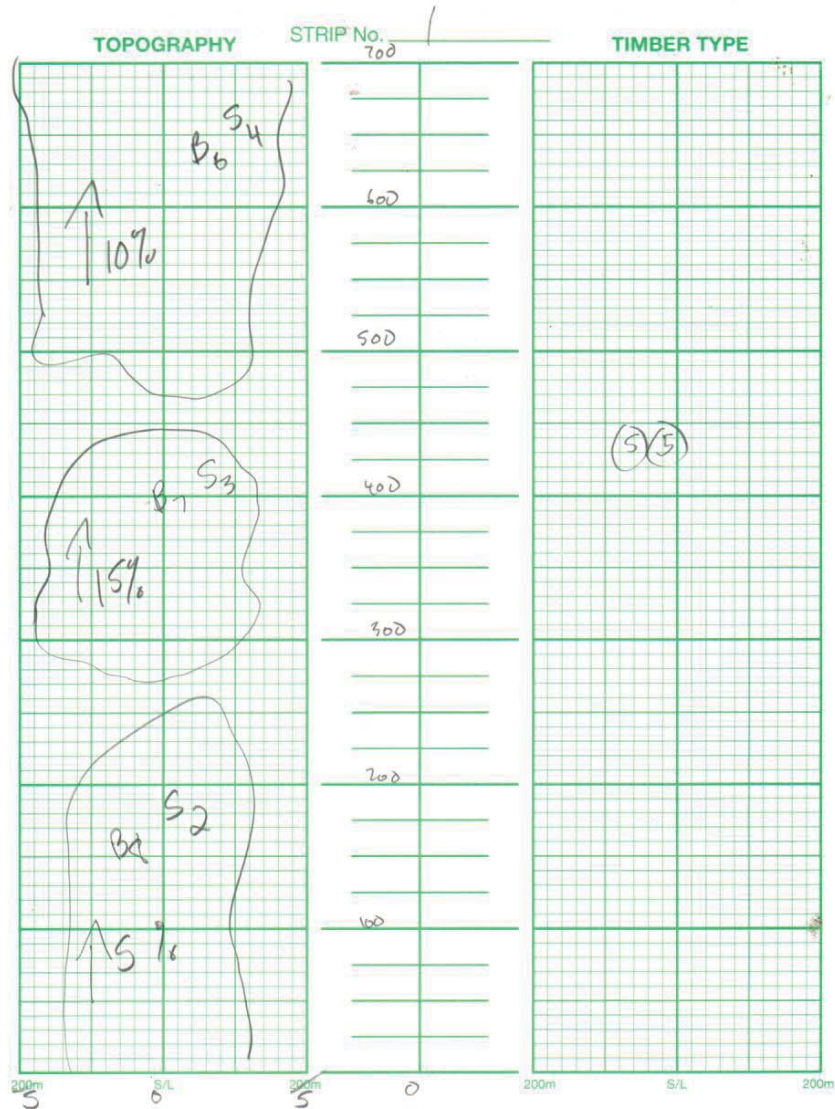
FS 1111A RPG 00/02 7530881049 (100/bdl)

PROBE 2

SPRUCE BEETLE
PROBE CARD

LOCATION		SS 16.744		PAGE		OF			
KLN-005		124 28.686							
BEARING	DISTANCE	STRIP WIDTH							
118°	100m	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	1							1
40.1 - 45.0	11.6	1							1
45.1 - 50.0	13.8	1							1
50.1 - 55.0	16.2	1							1
55.1 - 60.0	18.7								
60.1 +	25.3								
TOTALS		10							30
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
/									
/									
COMMENTS									
NO ATTACK									
CREW NAMES						DATE			
James Kelly						Y M D 16 01 20			

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



STRIP NO.: 1 DIRECTION: 180°

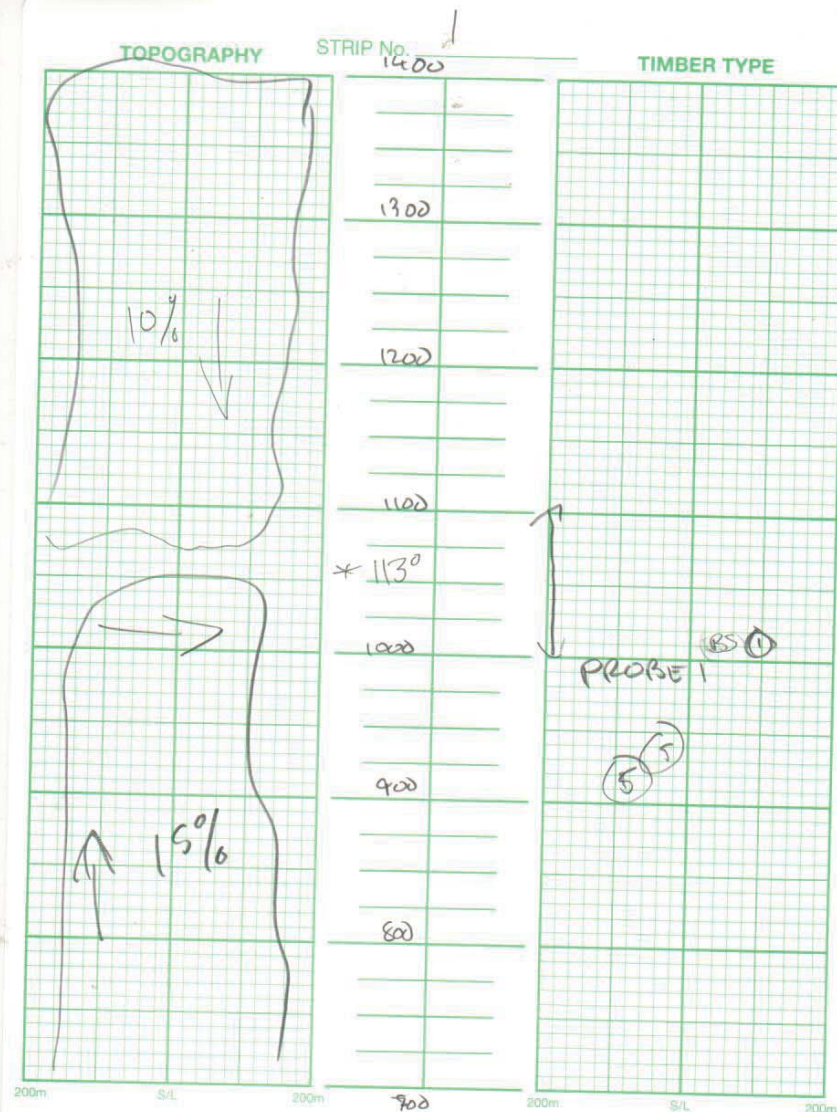
START STRIP: 0m

JOB NO.: KLA-005 DATE: JAN 29 / 2016

CREW: James Kelly

REMARKS:

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



STRIP NO.: 1 DIRECTION: 180°, 113°

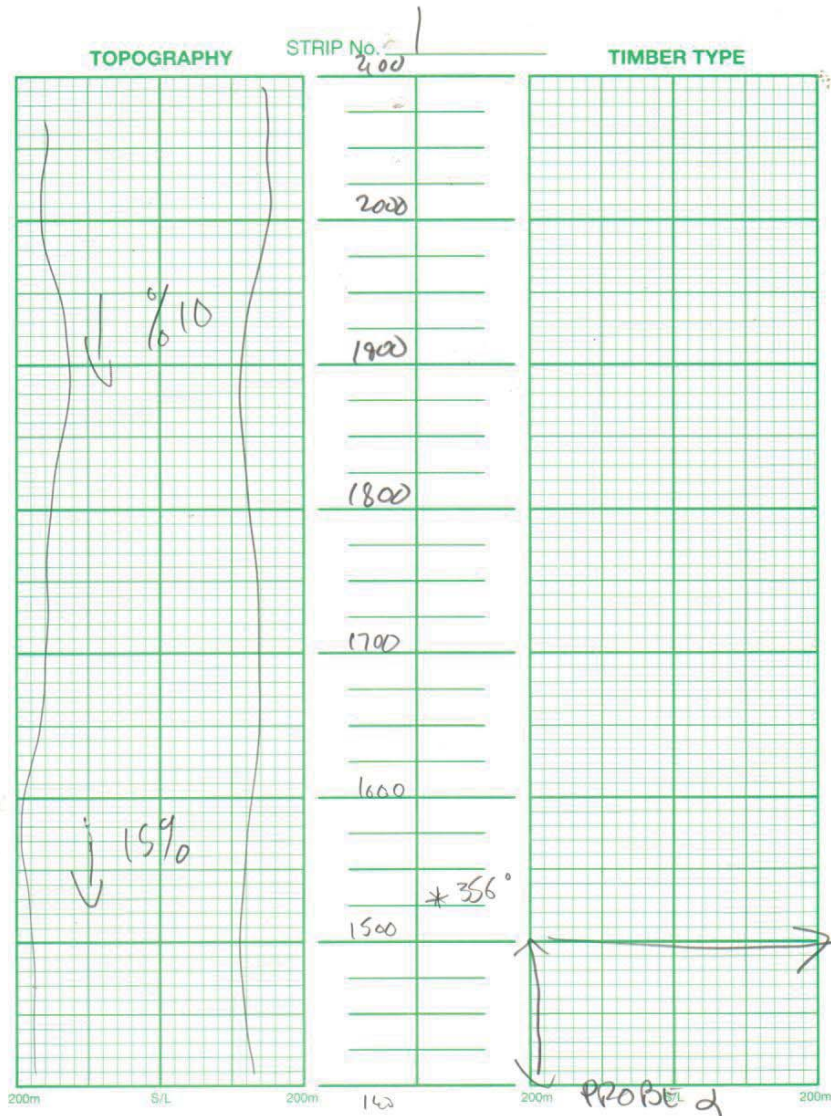
START STRIP:

JOB NO.: DATE:

CREW:

REMARKS:

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STRIP NO.: 1 DIRECTION: 356°

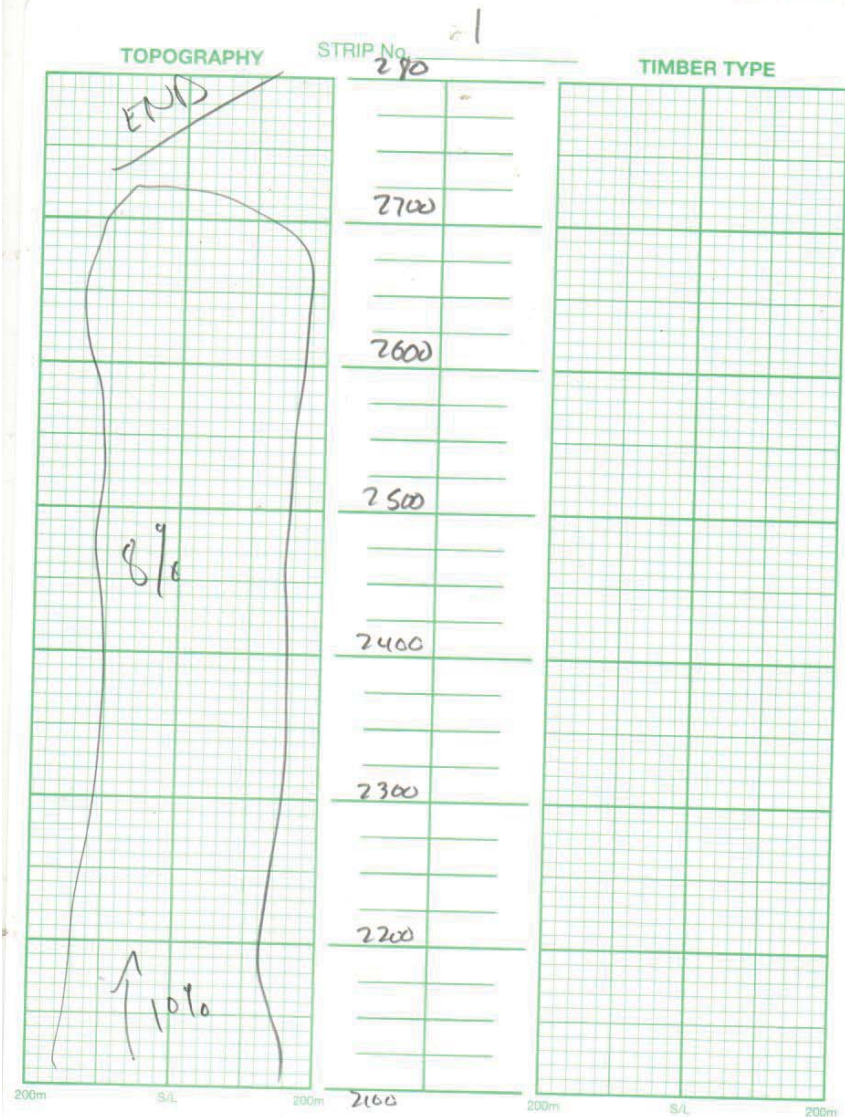
START STRIP:

JOB NO.: KLA-005 DATE: JAN 28 / 2016

CREW: James Kelly

REMARKS:

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STRIP NO.: DIRECTION: 356°

START STRIP:

JOB NO.: KLA-005 DATE: Jan 28 / 2016

CREW:

REMARKS:

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Ph: 1-800-663-6843



VLA 005

COMPASS AND TRAVERSE SHEET

TOPOGRAPHY		TIMBER TYPE	
ET-20	2700		
	2500		
	2000		
	1800	280°	
②	1700		
③	1600		
④	1500		
⑤	1400		
⑥ x 3	1200		
	1000m	40°	
⑦	800m	90°	
⑧	600m		
		180°	

C.P. No.	BLOCK KLA 005
DIRECTION	START OF STRIP
JOB NO.	DATE JAN 29 2016
CREW	FAT PELTS
REMARKS	

FS 375 HFP 92/1 7530881021

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE

		200	
		600	CS
		500	
87	B.3		
		400	
		300	
		200	
cleach		100	
pine			
		0	200°

STRIP NO.: 1	DIRECTION: 200° 97° 35° 321°
START STRIP: 0m	007° 023°
JOB NO.: KLA 005	DATE: JAN 28 2016
CREW: Daryl Blake	
REMARKS:	

www.irisupplies.com
Ph: 1-800-563-6843

TOPOGRAPHY

STRIP No.

TIMBER TYPE

9B 15

6% Slope

SS-B5

1300

1200

1100

1000

900

800

700

(CS)

(CS)

(CS)

(CS)

200m S/L 200m

STRIP NO.: 1

DIRECTION: 700m

START STRIP: KLA-005

JOB NO.: DARRYL DOWDIE

DATE: Jan 28 2016

CREW: DARRYL DOWDIE

REMARKS:

 www.irisupplies.com
Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

TIMBER TYPE

Bearing 51°

2100

2000

1900

1800

1700

1600

1500

(S)

(S)

Slope 40°

Bearing 126°

200m S/L 200m

STRIP NO.: 3

DIRECTION: 126°

START STRIP: 1500-2100

JOB NO.: KLA-005

DATE: Jan 29th/16

CREW: Blake B

REMARKS:

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TOPOGRAPHY

STRIP No.

TIMBER TYPE

End	2800	
	2700	
	2600	
	2500	
	2400	
	2300	
	2200	

Bearing 335°

(5)

STRIP NO.:

4

DIRECTION:

51°

START STRIP:

2200-2800

JOB NO.:

KLA-005

DATE:

Jan 29th/16

CREW:

Blake B

REMARKS:



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TOPOGRAPHY

STRIP No.

TIMBER TYPE

70% spruce 30% balsam	600	
	500	
	400	
	300	
	200	
	100	

dead pine

STRIP NO.:

0-700m

DIRECTION:

200°

START STRIP:

JOB NO.:

KLA-005

DATE:

Jan, 29th/16

CREW:

Blake B

REMARKS:



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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. 2

TIMBER TYPE

90% balsam
10% spruce

1300

1200

1100

1065

50% spruce
50% balsam

905

867

⑤

⑤

⑤

⑤

200m S/L 200m

STRIP NO.:

2

DIRECTION:

000°

START STRIP:

200-1400

JOB NO.:

KLA-005

DATE:

Jan 29th/16

CREW:

Blake B

REMARKS:



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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE

S6 B4

2000

1900

1800 - 321°

1700

S5 B5

1600 - 35°

③5

1500

1400

200m S/L 200m

STRIP NO.:

1

DIRECTION:

200°, 97°, 35°, 321° →

START STRIP:

1400

JOB NO.:

KLA 005

DATE:

Jan 28 2016

CREW:

DAKIN BLAKE

REMARKS:



www.irisupplies.com
Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE

B7	S3	3000	
		2900	
		2800	
		2700	
dead		2600	
pine		2500	
		2400 - 023°	
B7	S3	2300	
		2200	

STRIP NO.:

1

DIRECTION:

200°-97°-35°-321°

START STRIP:

0m

JOB NO.:

KLA 005

DATE:

JAN 28, 2016

CREW:

DARRYL BLAKE

REMARKS:



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Ph: 1-800-663-6843

