

**SENECA ENTERPRISES LTD.**

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**SPRUCE BARK BEETLE REPORT
FH16DMK010**

POLYGON: BLA-053

HECTARES: 177.64

WALKTHROUGH DISTANCE: 10600

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

36 34.0%

SUMMARY OF CURRENT INFESTATION

Walkthrough shows 34% infested pixels, most of this is concentrated in 3 area. Main area is in and around the drainage in the center of the polygon. 60% spruce stand many of the trees are showing a 1 and 2 year cycle.

MODERATE ATTACK- 34% PIXELS

ACCESS

Access is 2WD down on mainline to the southern tip of Polygon. Good uad road parallels eastern boundary and around the northern portion of Polygon.

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

Steep ravine following creek the whole way through polygon from North to South. Polygon has 60% spruce, especially in the north and in the draws.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Polygon shwoing 34% pixels attacked and most of the attack is concentrated in areas in and around the drainage within the middle of the polygon. There are three areas that have concentrated attack.

INCIDENCE AND SEVERITY OF ATTACK

4 probe lines established, moderate attack denisty wiithin areas that had attack,. There is a high Sanitation Rating and Beetle Showing both 1 and 2 year cycles throughout, many on the same tree.

RISK OF BEETLE SPREAD

moderate to high.. With consistent attack and first and second year cycles, along with large diameter, high concentrated spruce stand, could spread throughout area.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Polygn has good access to the east with mainline Road, however there is a steep gully running entire length of polygon where attacks are concentrated.

RECOMMENDATIONS**OPTION 1****/PROBE/CRUISING/ HARVEST**

There may be logging operations in the area as there are some boundary flags noted outside of polygons within Several kms of this Polygon. Would be best to schedule a Probe to refine the areas of attack, or cruise polygon for Logging. May have some operational issues with steep draw running through.

OPTION 2**TRAP TREES/**

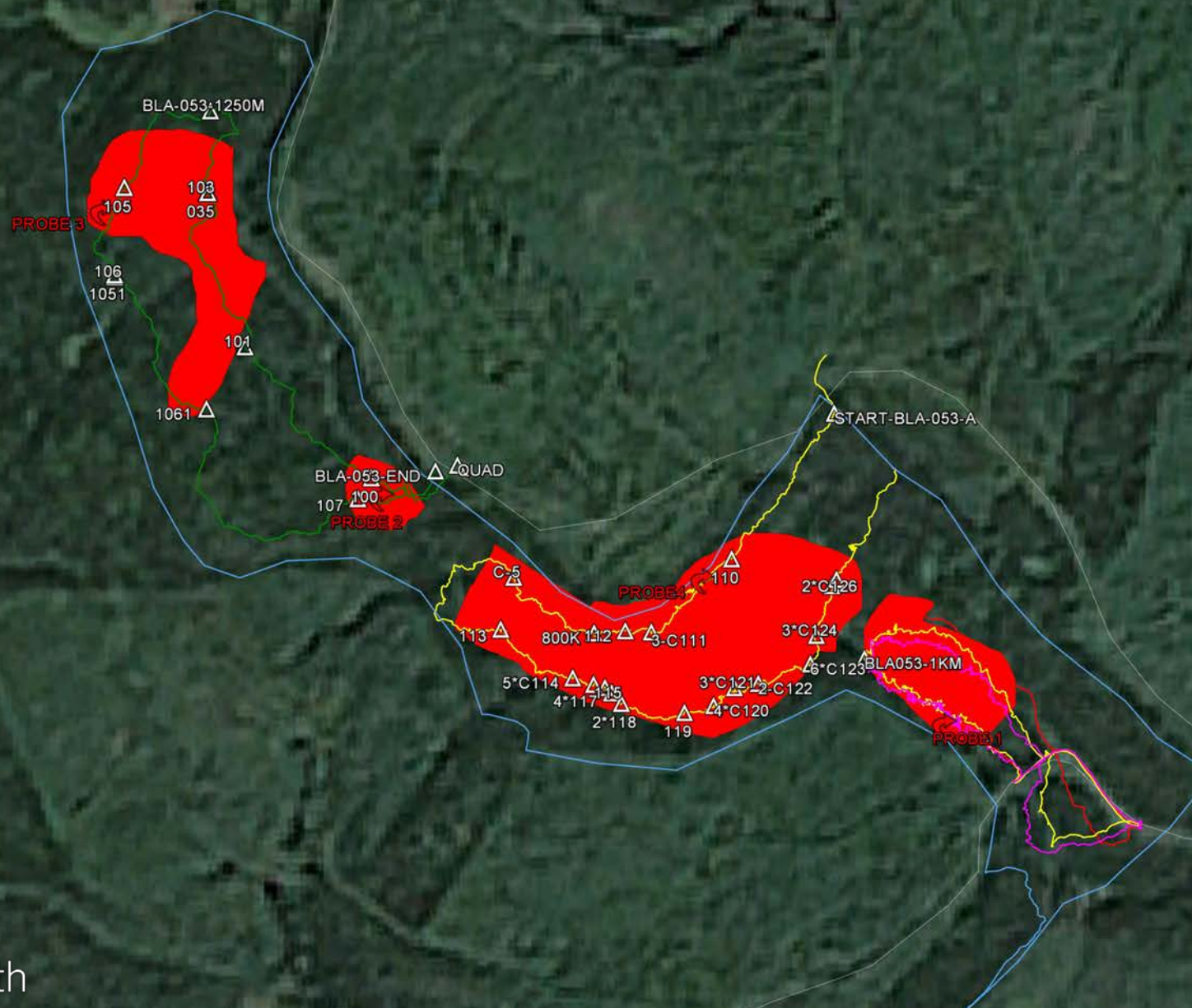
May schedule option for Trap Trees to hold attack until Logging becomes an option. Polygon OFF OF Main Line, and decent access around on slightly overgrown road,

2015-BLA-053

SPRUCE BEETLE WALKTHROUGH

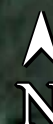
Legend

- CODE 1 ATTACK
- PROBE



Google earth

Image © 2015 DigitalGlobe
© 2015 Google
Image Landsat



1 km

Summary						
BLA-053	HEC	177.64	METERS WALKED	10600	% TRAVERSED	6.0%
PIXELS COVERED BY WALKTHROUGH	106	INFESTED PIXELS	36	ESTIMATED % OF BLOCK INFESTED (From Walk through)		34.0%

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	29.7	3.3	0.0	0.0	0.0	0.0	0.0	36.3
25.1-30.0	5.3	26.5	0.0	0.0	0.0	2.7	0.0	0.0	143.1
30.1-35.0	7.1	35.5	7.1	0.0	0.0	0.0	0.0	0.0	28.4
35.1-40.0	9.4	122.2	28.2	4.7	0.0	0.0	0.0	0.0	75.2
40.1-45.0	11.6	92.8	23.2	0.0	0.0	0.0	0.0	0.0	34.8
45.1-50.0	13.8	96.6	41.4	0.0	0.0	0.0	13.8	13.8	41.4
50.1-55.0	16.2	64.8	0.0	0.0	0.0	0.0	0.0	24.3	64.8
55.1-60.0	18.7	18.7	18.7	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	50.6
TOTALS	693.3	486.8	147.2	4.7	0.0	2.7	13.8	38.1	474.6

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
1.00	< 3.9 SEVERE Attack Density	2.63	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough				
% 2015 ATTACK	21.9%	##	SANITATION AND SALVAGE HARVEST PRIORITY RATING	
% 2014 ATTACK	0.4%	##	LIGHT 0-599	LEAVE (Monitor, Trap Trees, Baits, etc)
% 2013 ATTACK	7.5%	##	MODERATE 600-999	PROBE (To Obtain Further Info)
% HOST IN STAND	59.4%	##	HEAVY 1000+	RECOMMEND CRUISING/ LOGGING
1426.9				

SUMMARY OF ALL CARDS FS1111							NUMBER OF CARDS		4	
ACCESS -		Access is 2WD down on mainline to the southern tip of Polygon. Good uad road parallels eastern boundary and around the northern portion of Polygon.								
POLYGON FEATURES -		Steep ravine following creek the whole way through polygon from North to South. Polygon has 60% spruce, especially in the north and in the draws.								
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	9	1	0	0	0	0	0	9	2
25.1-30.0	5.3	5	0	0	0	1	0	0	7	20
30.1-35.0	7.1	5	1	0	0	0	0	0	2	2
35.1-40.0	9.4	13	3	1	0	0	0	0	6	2
40.1-45.0	11.6	8	2	0	0	0	0	0	3	0
45.1-50.0	13.8	7	3	0	0	0	1	2	3	0
50.1-55.0	16.2	4	0	0	0	0	0	3	4	0
55.1-60.0	18.7	1	1	0	0	0	0	0	0	0
60.1 +	25.3	0	1	0	0	0	0	0	2	0
TOTALS		52	12	1	0	1	1	5	36	26
BARK SAMPLES 15 cm x 15 cm		NO. ENTRANC E HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN			
							Attacked			Unattacked
							Y r		Y r	
8		8	3	21	0	6	0		0	0
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION										
Polygon shwoing 34% pixels attacked and most of the attack is concentrated in areas in and around the drainage within the middle of the polygon. There are three areas that have concentrated attack.										
INCIDENCE AND SEVERITY OF THE INFESTATION										
4 probe lines established, moderate attack denisty wiithin areas that had attack,. There is a high Sanitation Rating and Beetle Showing both 1 and 2 year cycles throughout, many on the same tree.										
RISK OF BEETLE SPREAD										
moderate to high.. With consistent attack and first and second year cycles, along with large diameter, high concentrated spruce stand, could spread throughout area.										
ACCESS, OPERABILITY AND INTEGRATED RESOURCE MANAGEMENT ISSUES										
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PROBE #1

SPRUCE BEETLE
PROBE CARD

LOCATION BLA 053		0472644 6154293		PAGE OF					
BEARING 310		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	••							BI
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		20	6					5	13
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	2	1	1	1	3		
1B	1	1	1	1	1	1	1		
COMMENTS - some blowdown. Located along creek. Ideal conditions for beetle									
CREW NAMES JAMES K. / PAT P. / DALEEN U.						DATE Y M D 15 10 10			

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



BRITISH COLUMBIA



PROBE #2

BEETLE PROBE CARD

LOCATION BLA 053		0471217 6154879		ELEVATION 870	LATITUDE	PAGE OF 1 2				
BEARING 320°	STRIP LINE NO P2	STRIP WIDTH 10m	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		9	3					1	11	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
2A	3	1	6	3	1	1	1			
2B	2	1	2	1	1	1	1			
COMMENTS ① = BS = 1st 2nd year life cycles. - P2 along creek. - 2/3 code 1's on 1st 2nd year cycle.										
CREW NAMES JAMES K. / PAT P.						DATE Y M D 15 10 27				

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



BRITISH COLUMBIA



BEETLE PROBE CARD

PROBE # 3

LOCATION	0470545 BLA-053 6155590	ELEVATION	950	LATITUDE		PAGE	2	OF	2		
BEARING	200°	STRIP LINE NO	P3	STRIP WIDTH	10m	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									Aspen	81
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											
60.1 -	25.3										
TOTALS			8	2			1	1	76	8	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
3A		/	2	/	1						
3B		/	3	/	/						
COMMENTS											
① = BS - attack on 132 year cycle.											
CREW NAMES						DATE					
James K. / Pat. P.						15 / 10 / 27					

FS 11114 RPR 00/02 75308R1049 / 100h/11



BRITISH COLUMBIA

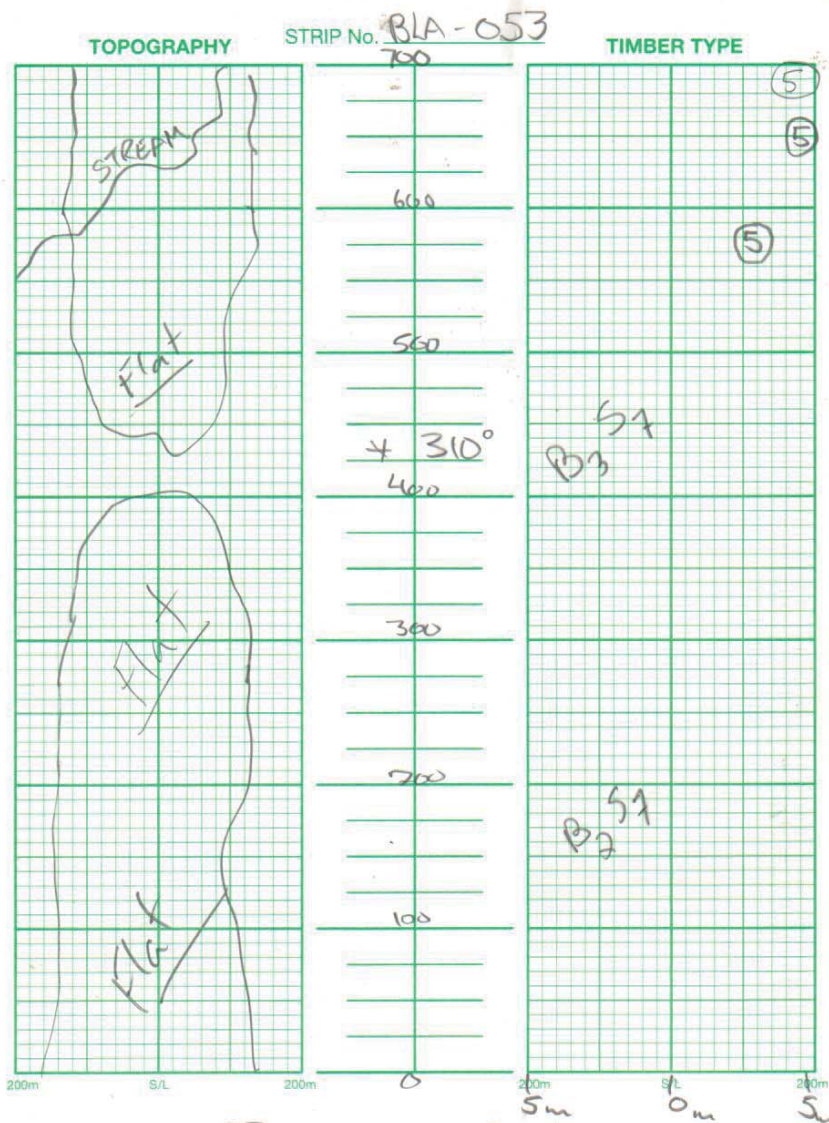


BEETLE PROBE CARD

P4

LOCATION	0472026 BLA 6154668	ELEVATION	900	LATITUDE		PAGE	1	OF	1		
BEARING	225°	STRIP LINE NO	P4	STRIP WIDTH	10m	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			16	1	1		1		4		
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
4A		/	4	/	1	/	3				
4B		2	1	/	/						
COMMENTS											
- open stand with large, mature sx. BS = 132nd year life cycle.											
CREW NAMES						DATE					
James K. / Pat. P.						15 / 10 / 28					

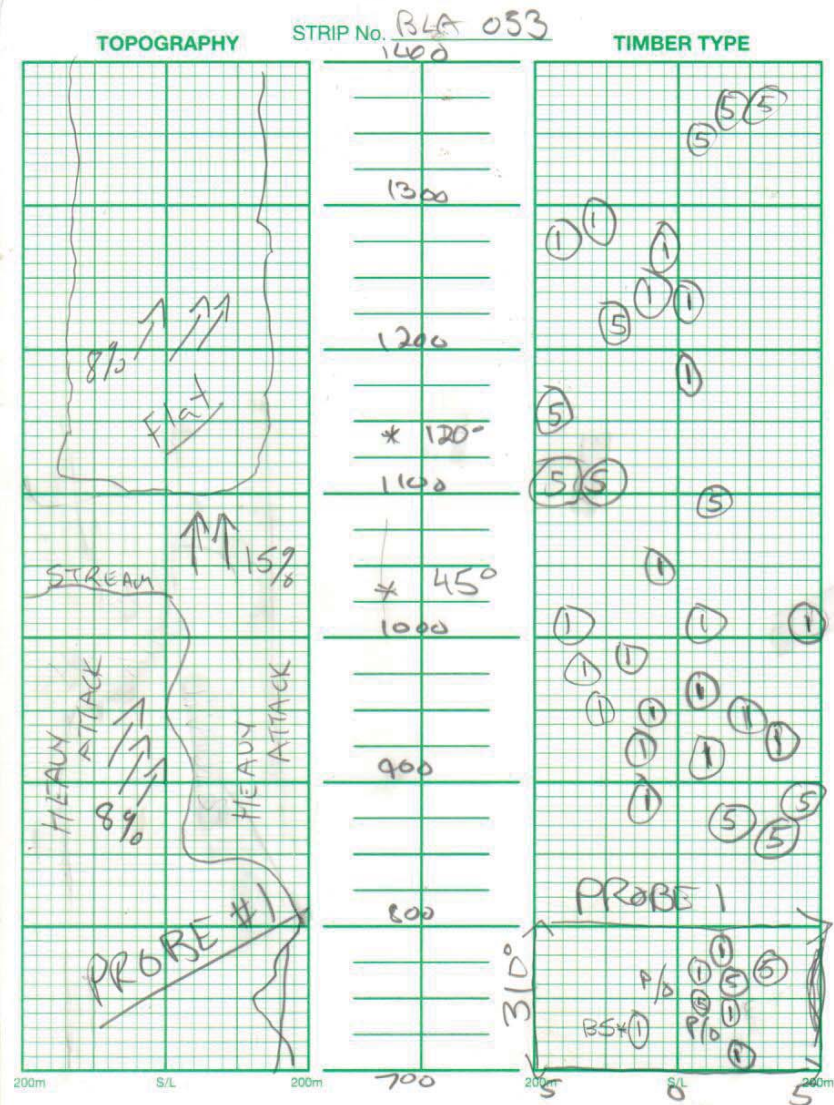
FS 11114 RPR 00/02 75308R1049 / 100h/11



STRIP NO.: BLA-053 DIRECTION: 330°
 START STRIP: 0-700m
 JOB NO.: SEN. WALK DATE: OCT 10/2015
 CREW: JAMES/PAT/PAILEN
 REMARKS:



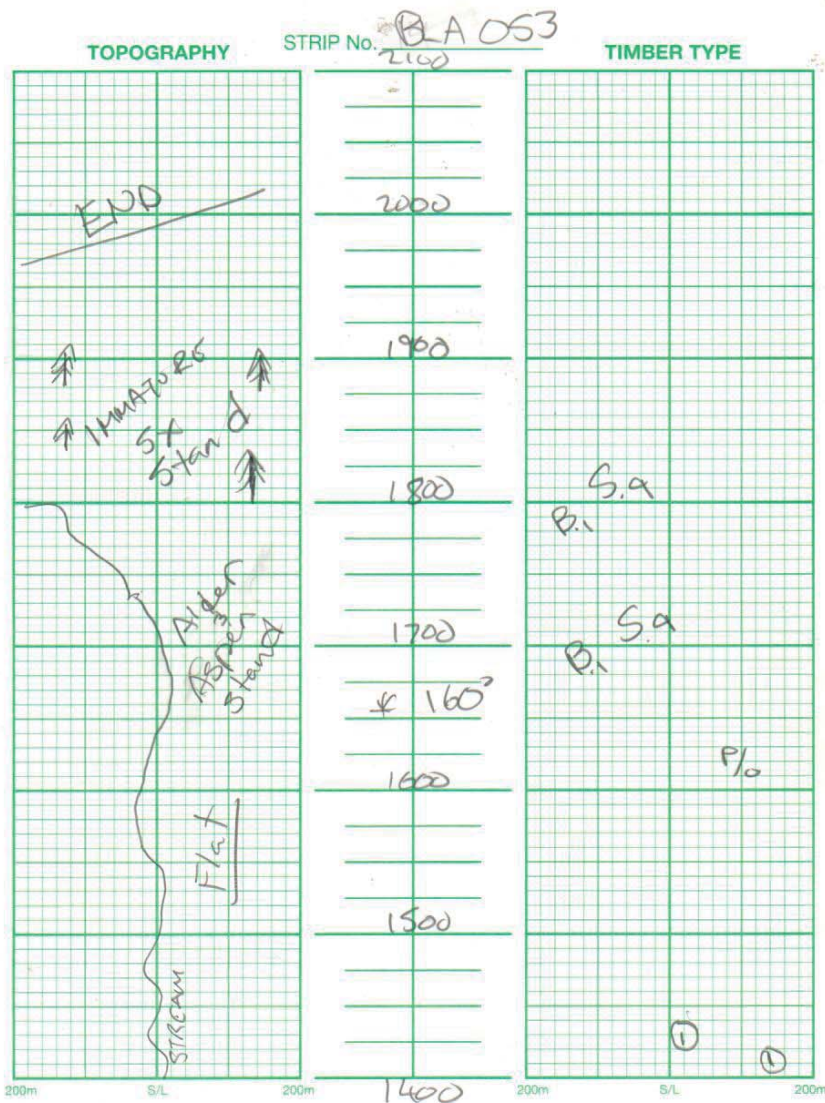
www.irtsupplies.com
Ph: 1-800-663-6843



STRIP NO.: BLA 053 DIRECTION: 310° - 45° - 120°
 START STRIP: 700-1400
 JOB NO.: SEN. WALK DATE: OCT 10/2015
 CREW: JAMES/PAT/PAILEN
 REMARKS: HEAVY ATTACK ALONG CREEK



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



STRIP NO.: BLA 053 DIRECTION: 120° - 160°

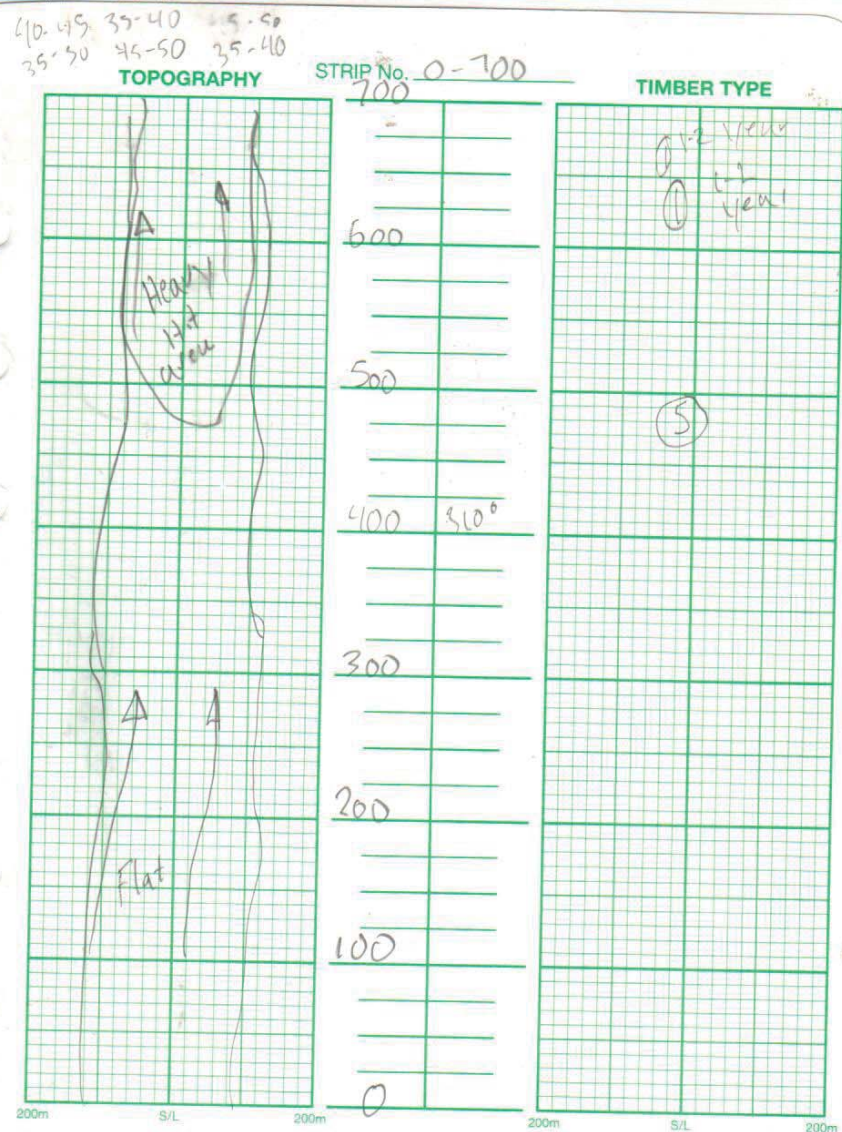
START STRIP: 1400 - 2100

JOB NO.: SEP, WALK DATE: Oct 10/15

CREW: JAMES

REMARKS: Minimal attack

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



STRIP NO.: BLA-053 DIRECTION: 310°

START STRIP: 0 - 700

JOB NO.: Seneca/walk DATE: Oct 10, 15

CREW: Pat Poikiev

REMARKS:

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Ph: 1-800-663-6843

Brow Down

Gloved

Heavy Hit AREA

Heavy Hit AREA

1400	
1300	
1200	1330
1100	
	40°
1000	
900	
800	
700	

[illegible]

2100	
2000	
1900	
1800	92°
1700	180°
1600	
1500	
1400	

[illegible]

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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

700

TIMBER TYPE



600

500

400

300

200

100

0

DROBE #12

① ⑤ ⑤

①

100m

① ⑥
① ⑥
① ⑥① ⑥
① ⑥
① ⑥

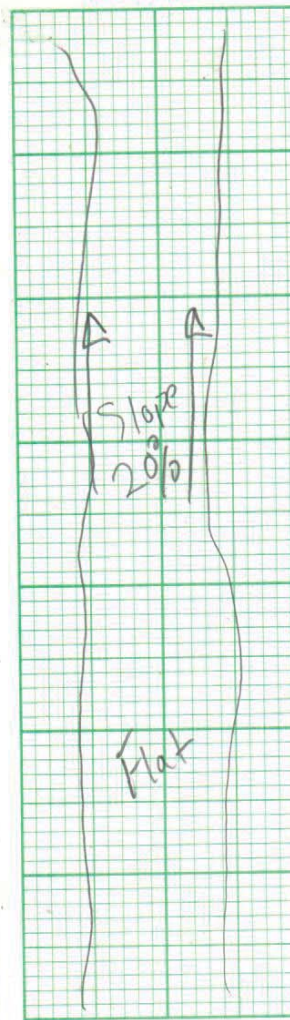
315°

TOPOGRAPHY

STRIP No.

1400 1750

TIMBER TYPE



1300

1200 270°

1100

1000

900

800

700 315°

200m

S/L

200m

200m

S/L

200m

STRIP NO.:

27

DIRECTION:

315°, 270°, 1750

START STRIP:

700 - 1400

JOB NO.:

BLA-053

DATE:

Oct 27, 15

CREW:

Pat Poirier

REMARKS:



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Ph: 1-800-663-6843

45 46 400

TOPOGRAPHY	STRIP No. 2H	TIMBER TYPE
	2100	(5)
	2000	(1)
	1900	
	1800	(1)
	PROBE 3	(1)
	1700	(1) (5)
		(1) (1)
	1600	
	1500	
	1400	

TOPOGRAPHY	STRIP No. 2	TIMBER TYPE
	2800	
	2700	
	2600	
		(1)
	2500	
	2400	
	2300	(5)
	2200	(5)
	2100	(5)

STRIP NO.: 2 DIRECTION: 60°
 START STRIP: 2100
 JOB NO.: DATE:
 CREW:
 REMARKS:

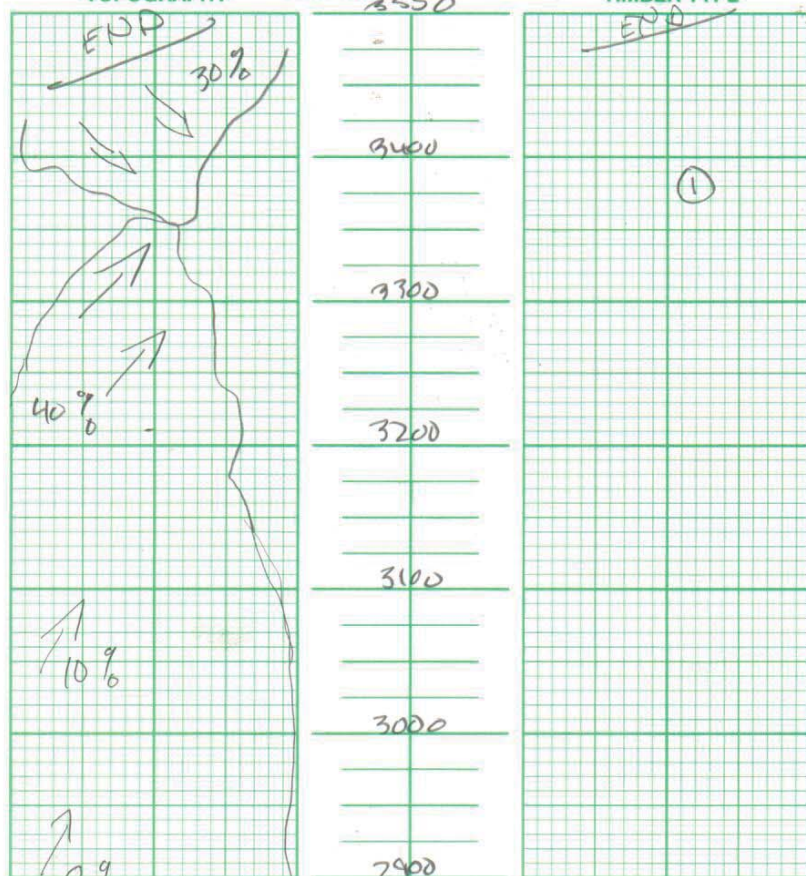


www.irsupplies.com
 Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. 2

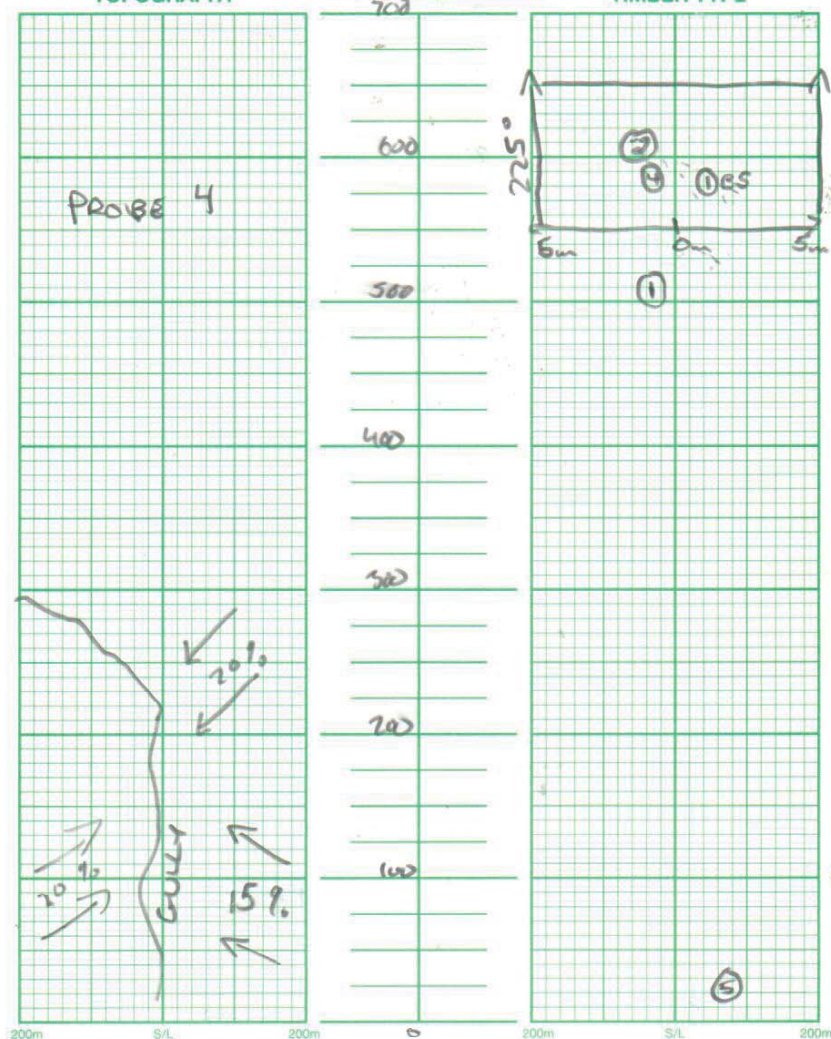
TIMBER TYPE



TOPOGRAPHY

STRIP No. 3

TIMBER TYPE



STRIP NO.: 3

DIRECTION: 215°

START STRIP: 0-700m

JOB NO.: BHA-053

DATE: OCT 120/2005

CREW: JAMES KENT (PAT. P)

REMARKS:



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Ph: 1-800-663-6843

STRIP NO.: 3 DIRECTION: 215° - 250° - 300° - 235°
 START STRIP: 700 - 1400
 JOB NO.: BLA - 053 DATE: OCT 28 / 2015
 CREW: 3 MGS / PAT
 REMARKS:

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

TOPOGRAPHY	STRIP No. <u>3</u>	TIMBER TYPE
<p>30%</p> <p>25%</p> <p>STREAM</p>	2100	⑤ ① ⑤
	2000	① ① ① ① ①
	1900	① ① ① ① ①
	1800	① ① ① ① ①
	1700	① ⑤
	1600	① ⑤
	1500	⑤
	1380	
	1380	
	1380	

