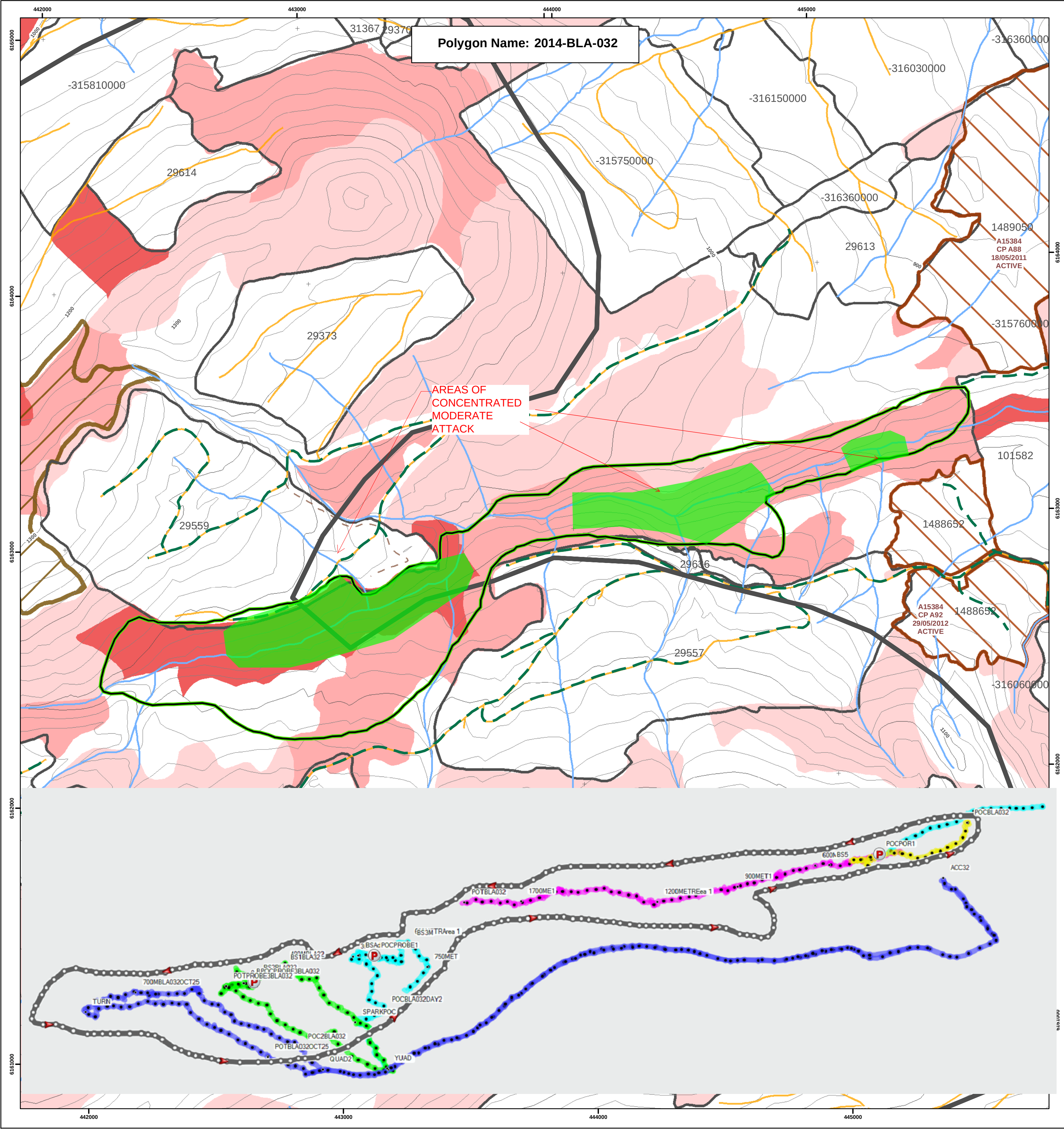




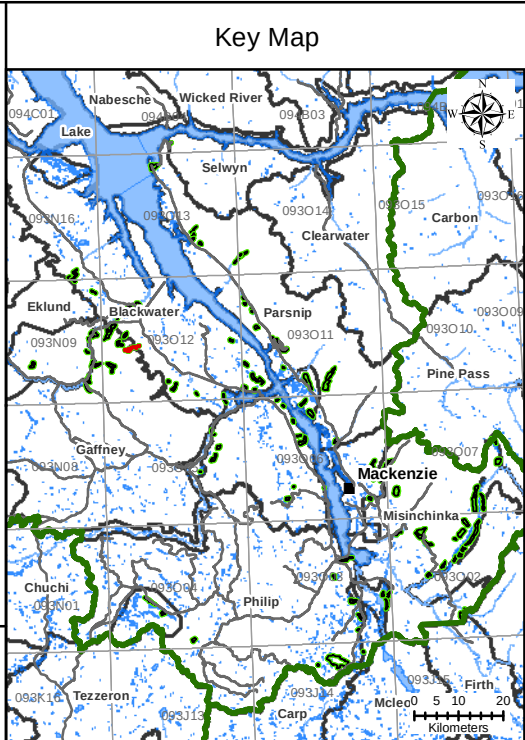

Spruce Bark Beetle Field Map
Polygon Name: 2014-BLA-032

Landscape Unit/BMU: Blackwater
Region: Omineca
District: Mackenzie
Mapsheet: 093012
Hectares: 112.98
Scale: 1:10,000
When plotted on ANSIC
Coordinate System: PCS Albers
Datum: North American 1983
Date Drawn: 03/06/2015
Drawn By: msnively

Map Features

- Susceptible Spruce Bark Beetle Polygon
- 2013 SB Hazard Rating (20% increments)
Hazard Classes
 - Low/Med (21-40)
 - Med (41-60)
 - High (61-80)
 - Very High (81-100)
- Cutting Permit
- RESULTS Opening
- Landscape Unit
- Road Permit Active
- Road Permit Pending
- Km_Marker_Points
- Communities
- First Nations Reserves
- Mackenzie District
- OGMA Legal Current
- Ungulate Winter Range
- Wildlife Habitat Area
- Protected Lands Designation
 - Ecological Reserve
 - Protected Area
 - Provincial Park
- Contour - Index
- Contour - Intermediate
- Lakes and Rivers
- Wetlands
- Streams

Disclaimer
The accuracy and completeness of the information on this map is not guaranteed.



**SENECA ENTERPRISES LTD.**

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

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

**SPRUCE BARK BEETLE REPORT
FH16DMK010**

POLYGON: 2014-BLA-032

HECTARES:

112.98

WALKTHROUGH DISTANCE: 5700

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

20 35.1%

SUMMARY OF CURRENT INFESTATION

Walkthrough estimate shows 35% recently infested Pixels. This area is fairly concentrated to the wet creek draws and Polygon itself quite steep throughout. The polygon sits between two older cutblocks. There is evidence of Mainly Code 1 attack on both a 1 and 2 year cycle in Polygon. There are many Code 5 older attacked trees as well and infestation seems to be at a fairly high rate of spread. There are some trees that have unsuccessful attack as well.

MODERATE CONCENTRATED ATTACK.

ACCESS

Access quite poor through old cutblock via ATV. Lots of cutting to clear out road before getting to polygon. On last day of work in Polygon, another company in cutting the road. Fresh flags seen in Polygon.

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

Slopes dominate polygon with creek and draw running entire length through the middle. Fresh flagging seen within Polygon. Spruce Balsam mix mostly, 60-70% spruce with average DBH 35cm.

SIZE, BOUNDARY and PATTERN OF INFESTATION

Walkthrough shows 35% recent infested pixel with mostly Code 1's on both a 1 and 2 year cycle. Pattern is surrounding creeks and runs most of the length of the polygon. Lots of older attacked trees throughout attacked area as well.

INCIDENCE AND SEVERITY OF ATTACK

From 3 probe lines and 4 additional bark samples, the attack has a high attack density with a moderate mean larval density. The infestation also is on a 1 and 2 year life cycle.

RISK OF BEETLE SPREAD

Polygon is surrounded by cutblocks but will continue to creep through polygon and is at a fairly high rate of spread considering the concentration of attack.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Access would need to be improved through old cutblocks and work was being done by another contractor cutting out road we used for ATVing to site. Also, fresh flagging tape noticed in and around Polygon.

RECOMMENDATIONS**OPTION 1****CRUISING LOGGING**

Sanitation and salvage rating is high for this polygon and logging is likely required. That said, it is quite a steep area with slopes ranging from 0-70% in areas with a creek draw running the entire length of the polygon. There are

OPTION 2**PROBE TRAP TREES**

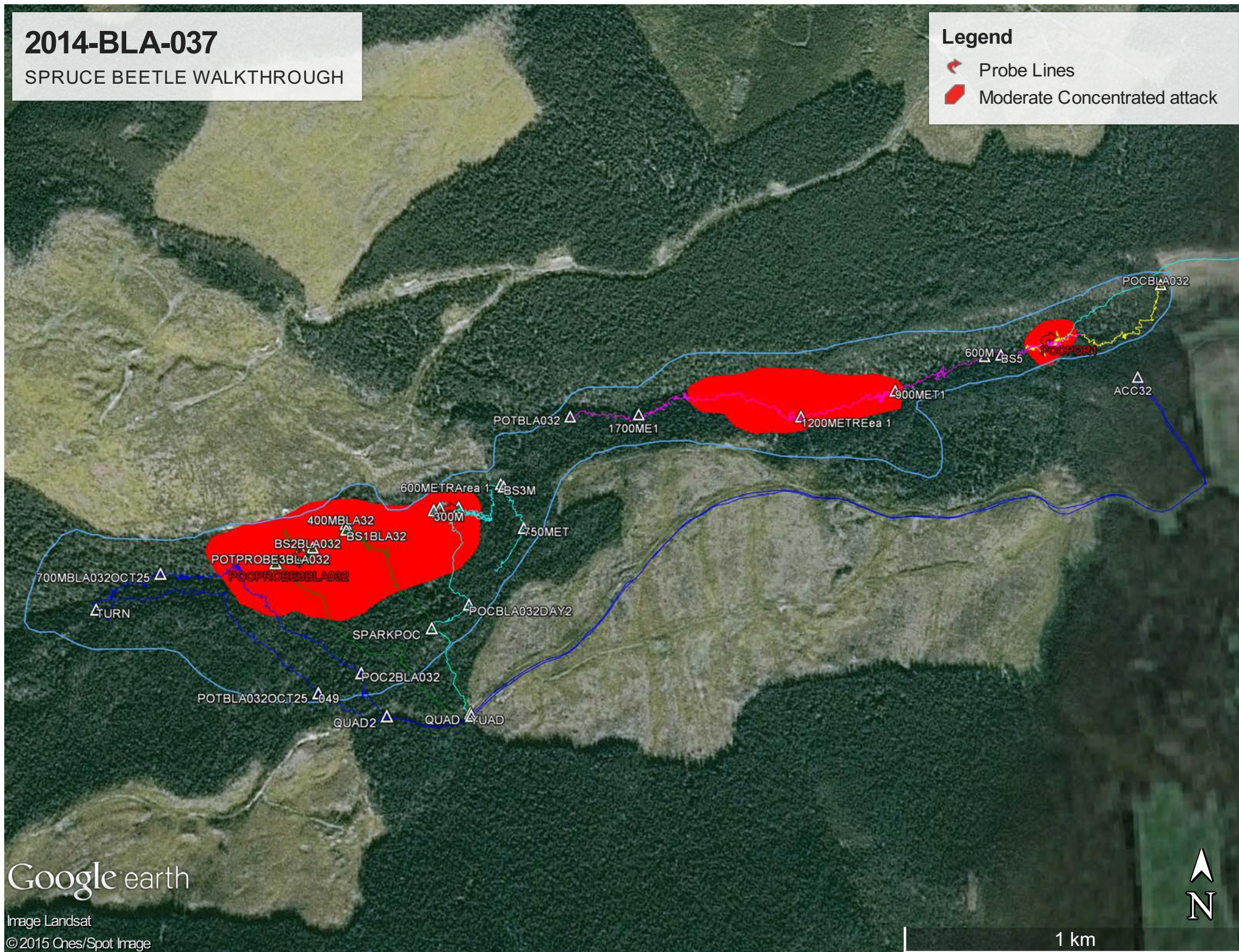
May be better to establish Trap Tree trails to hold the infestation while awaiting logging plans if operationally possible. Trails could be established on the edges of current old cutblocks and probing could help further determine the attack severity and better determine the area.

2014-BLA-037

SPRUCE BEETLE WALKTHROUGH

Legend

- Probe Lines
- Moderate Concentrated attack



Summary						
2014-BLA-032	HEC	112.98	METERS WALKED	5700	% TRAVERSED	5.0%
PIXELS COVERED BY WALKTHROUGH			57	20	ESTIMATED % OF BLOCK INFESTED (From Walk through)	
					35.1%	

TABLE 5- Spruce Beetle Infestation Summary Sheet



BRITISH COLUMBIA



BEETLE PROBE CARD

LOCATION		BLA-032 10 u 0445211 6163289		ELEVATION	LATITUDE	PAGE	OF				
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES							
238°	Probe1	10m	100m	☒ 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	N/A							BL	N/A	N/A
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		21	3						19		
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN					
						Attacked	Unattacked				
North											
South											
COMMENTS @ Bark Sample 1											
CREW NAMES Aaron Colebank						DATE Y M D 2015/10/21					



BRITISH COLUMBIA



BEETLE PROBE CARD

LOCATION		BLA-032 10 u 0443366 6162799		ELEVATION	LATITUDE	PAGE	OF			
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES						
108°	Probe2	10m	100m	☒ 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	N/A							BL	N/A
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		28	3						26	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
North										
South										
COMMENTS @ Bark Sample 2 90% 2 year life cycle										
CREW NAMES Aaron Colebank						DATE Y M D 2015/10/22				

Probe 3

SPRUCE BEETLE PROBE CARD

LOCATION		PAGE OF							
BEARING 2490	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									
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
N									
S									
COMMENTS BS3									
CREW NAMES Branton Sparks						DATE Y M D 15 10 22			

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



BRITISH COLUMBIA



Bark Sample A (Blowdown)

BEETLE PROBE CARD

LOCATION BLA-032 10u 0443310 016 2780		ELEVATION		LATITUDE		PAGE OF				
BEARING BS-A	STRIP LINE NO.	STRIP WIDTH	DISTANCE	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										
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
Top										
COMMENTS BSA - Blowdown Bark Sample										
CREW NAMES Aaron Colebank						DATE Y M D 2015 10 22				

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



BEETLE PROBE CARD

Bark Sample 3

LOCATION	BLAO 22 10 u 844 3499 616 2842	ELEVATION	LATITUDE	PAGE	OF					
BEARING	STRIP LINE NO BS3	STRIP WIDTH	DISTANCE	BEETLE SPECIES ☐ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
									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										
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
North	0	0	0	0	0	0	0			
South	0	0	0	0	0	0	0			
COMMENTS										
CREW NAMES Aaron Colebank						DATE Y M D				



BEETLE PROBE CARD

LOCATION	ELEVATION	LATITUDE	PAGE	OF						
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES ☐ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
									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										
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
N	0	0	0	0	0	0	0			
S	0	0	0	0	0	0	0			
COMMENTS BS2										
CREW NAMES						DATE Y M D				



BRITISH
COLUMBIA



BEETLE PROBE CARD

LOCATION		ELEVATION		LATITUDE		PAGE		OF		
BEARING	STRIP LINE NO.	STRIP WIDTH	DISTANCE	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										
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	1	1	1	1	1					
COMMENTS										
BS1										
CREW NAMES						DATE				
						Y M D				

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

2.5

Bark Sample 5

SPRUCE BEETLE PROBE CARD

LOCATION		PAGE		OF					
10 u 0445030 6163235		BS5							
BEARING		DISTANCE		STRIP WIDTH					
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									
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
North	1	1	1	1	1				
South	1	1	1	1	1				
COMMENTS									
CREW NAMES						DATE			
Aaron Colebank						Y M D			
						2015 10 25			

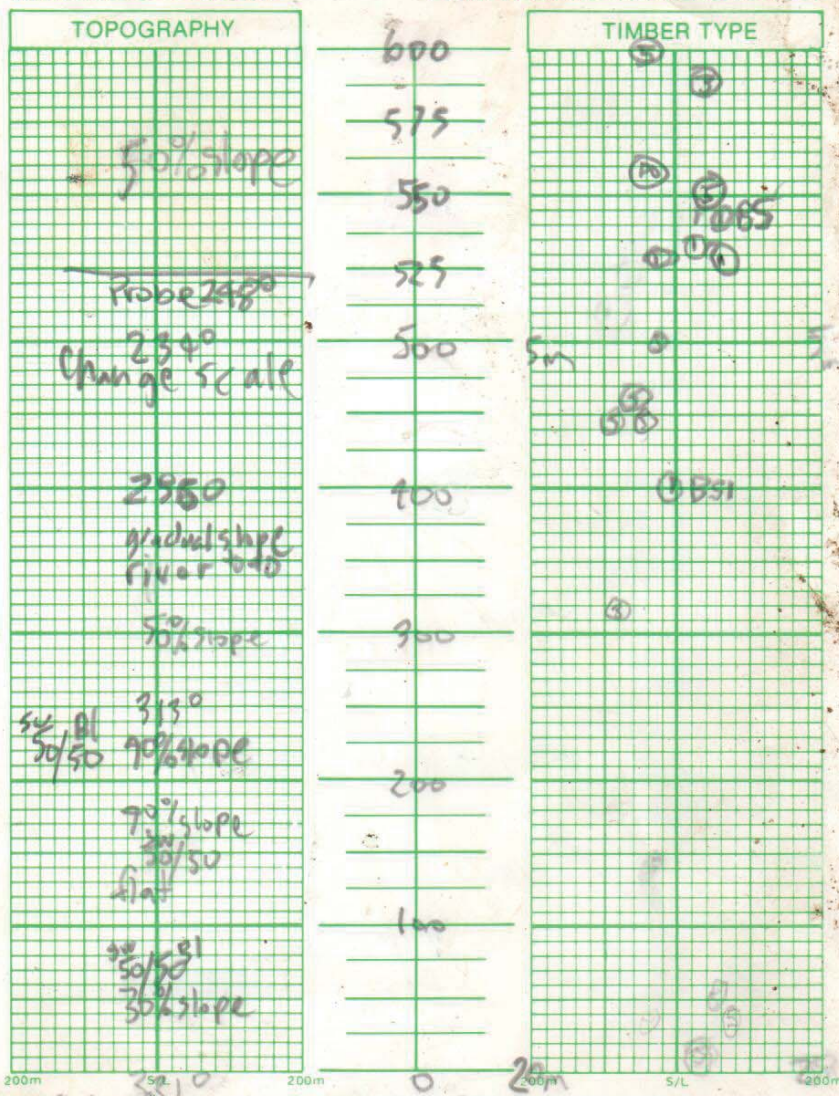
FS 1111A RPG 2000/01 7530881048 (100/bdl)

MINISTRY OF FORESTS

COMPASS AND TRAVERSE SHEET

TOPOGRAPHY

TIMBER TYPE



C.P. No.

BLOCK

DIRECTION

JOB NO

CREW

REMARKS

FS 375 VAL. 88/07

Sta 032

Poc 0443302 6162430

START OF STRIP

0-100

DATE 06-23/2015

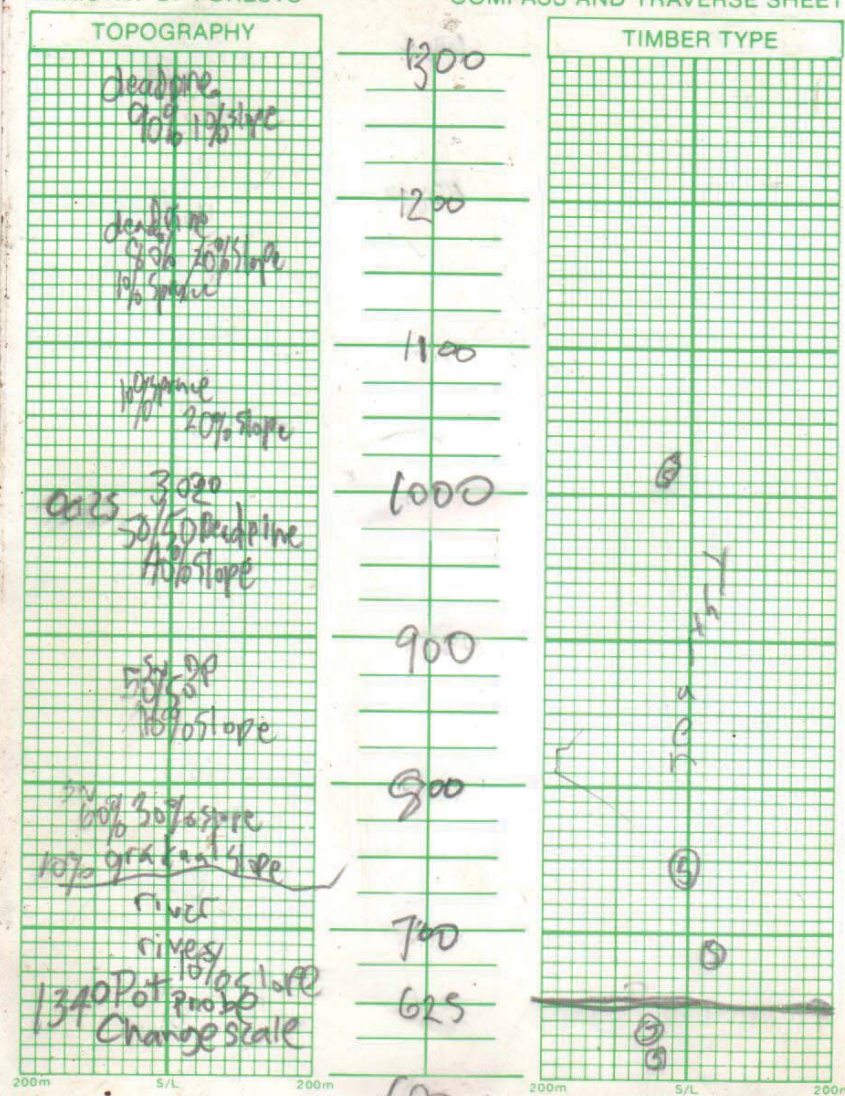
Crew: Ian Sparks, Aaron Cole, Mark

MINISTRY OF FORESTS

COMPASS AND TRAVERSE SHEET

TOPOGRAPHY

TIMBER TYPE



C.P. No.

BLOCK

DIRECTION

JOB NO

CREW

REMARKS

FS 375 VAL. 88/07

Sta 037

Poc 0443302 6162430

START OF STRIP

0-100

DATE 06-23/2015

Crew: Brandon Sparks

TOPOGRAPHY

STRIP No.

BLA-032

TIMBER TYPE

54° bearing	350	
60/40 Sw/bl	325m	
10% Slope	300	Blowdown is code 1 + 5A
River @ 280-290m		(P10)
80/20 Sw/bl	250	
50% Slope		(5)
50/50 Sw/bl	200	
30% Slope		(5)
15% Slope	150	
60/50 Sw/bl		(6)
15% Slope	100	
50/50 Sw/bl		(5)
20% Slope	50	
60/40 Sw/bl	0	

STRIP NO.:

BLA-032

DIRECTION:

315° bearing

START STRIP:

10 u 0443402 G162494

JOB NO.:

BLA-032

DATE:

Oct 22nd, 2015

CREW:

Aaron Colebank

REMARKS:

hits almost exclusively
South of river.
 www.irisupplies.com
 Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

TIMBER TYPE

40% Slope	700	
BS3 is code 1	650	
24° bearing @ 600m	600	(BS3)
50° bearing @ 570m		
	550	
50% Slope	500	
33° bearing @ 470	475	(3)
60/40 Sw/bl	450	
40% Slope	425	
30% Slope	400	(P10)
108° bearing @ 370m	375	(BS3)
	350	Probed @ 370m

STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

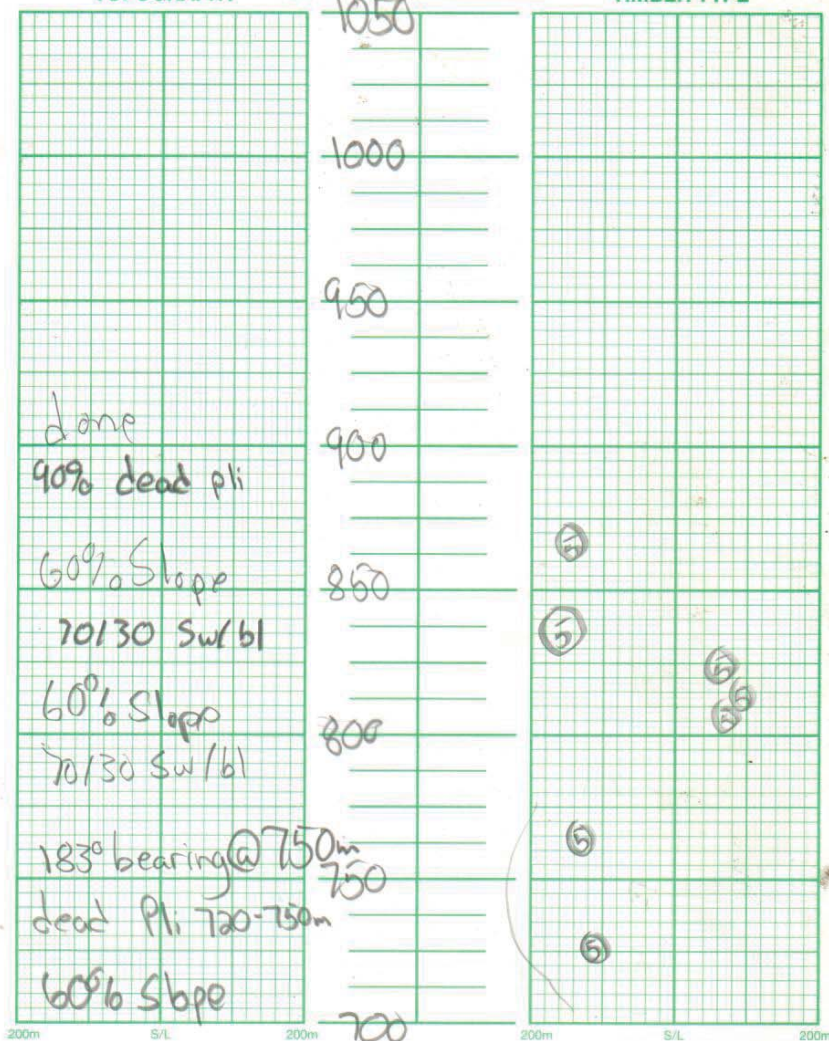
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TOPOGRAPHY

STRIP No.

TIMBER TYPE



STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

REMARKS:

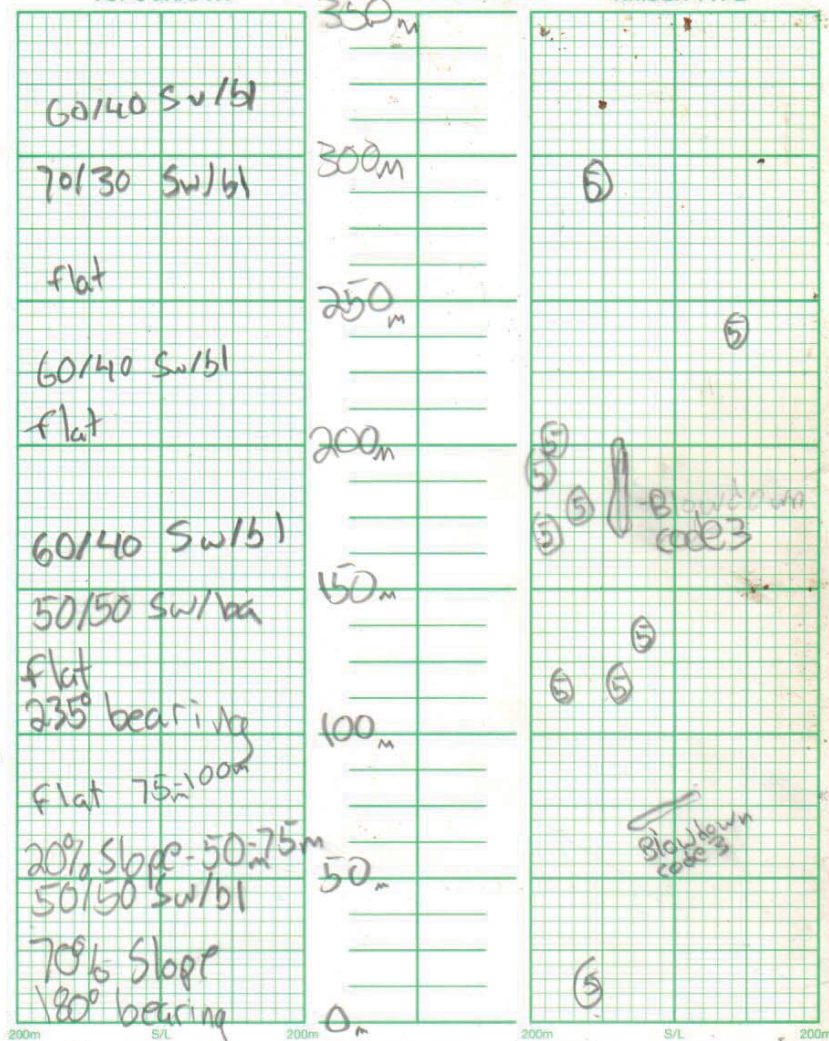


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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

TIMBER TYPE



STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

REMARKS:

Aron Colebank

hit almost exclusively
south of river



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

TOPOGRAPHY

STRIP No.

BLA-032

TIMBER TYPE

flat

80/20 Sw/b

80/20 Sw/b

Scale Change

80/20 Sw/b

80/20 Sw/b

45° bearing

heavy hit to
left of probe

20-40m

256 bearing @ 360m

370m also

800

700

600m

550m

500

475

450

425

400

350

Probe @ 360m

1-B51

River 410m

P10

P10

20/15


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STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

REMARKS:

TOPOGRAPHY

STRIP No.

BLA-032

TIMBER TYPE

Scale Change

Scale change

flat

60/40 Sw/b

flat

60/40 Sw/b

flat river bed

Scale change

246° bearing

flat

70/30 Sw/b

1250

1200

1100

1050

1000

950

900

800

 346° bearing
 attached
 Code one

STRIP NO.:

DIRECTION:

START STRIP:

JOB NO.:

DATE:

CREW:

Aaron Colebant

REMARKS:

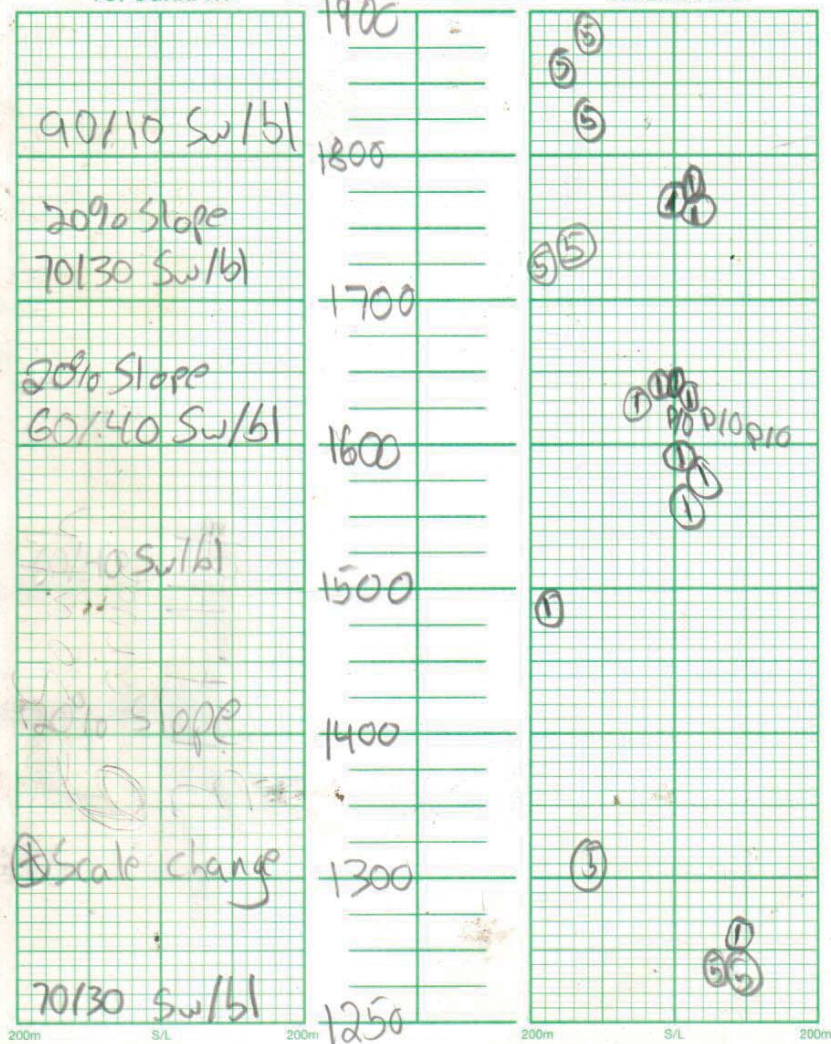

 www.irlsupplies.com
 Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No.

BLA-032

TIMBER TYPE



STRIP NO.: _____ DIRECTION: _____

START STRIP: _____

JOB NO.: _____ DATE: _____

CREW: _____

REMARKS: _____



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Ph: 1-800-663-6843