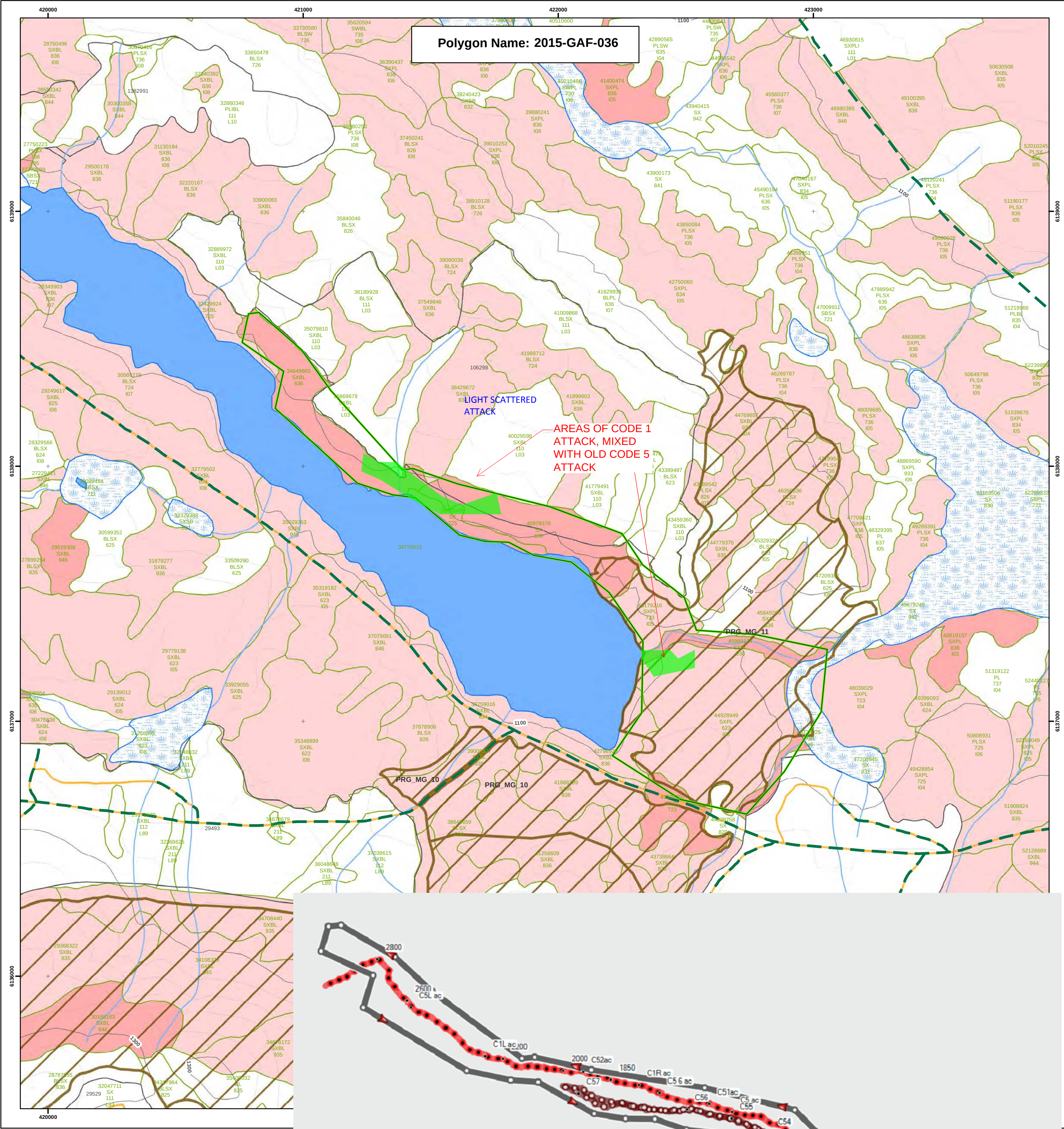




**British Columbia** Ministry of Forests, Lands and Natural Resource Operations

## Spruce Bark Beetle Field Map

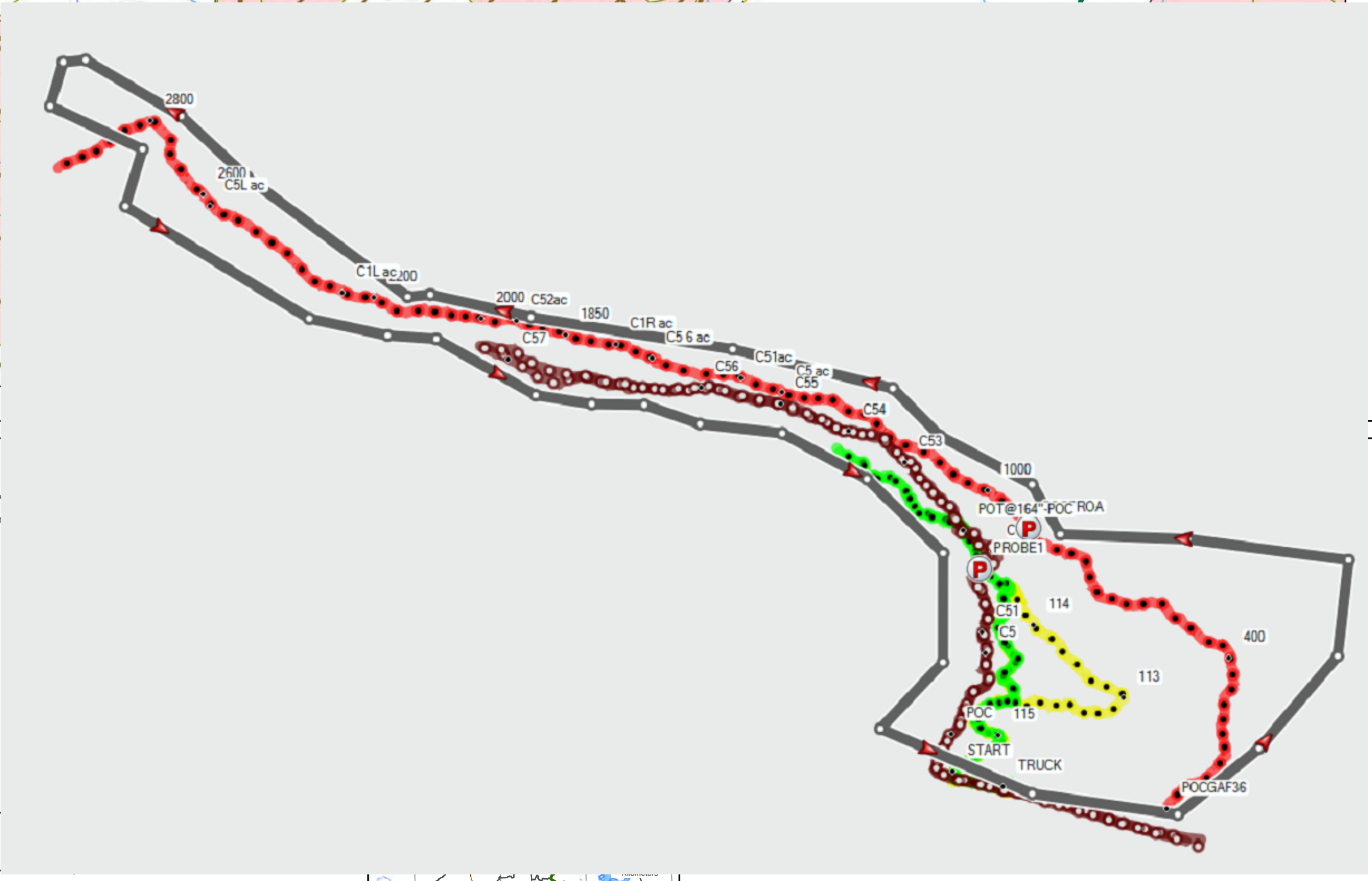
**Polygon Name: 2015-GAF-036**

Landscape Unit/BMU: Gaffney  
Region: Omineca  
District: Mackenzie  
Mapsheet: 093N08  
Hectares: 79.73  
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

**Map Features**

- Susceptible Spruce Bark Beetle
- 2013 SB Hazard Rating (20% increase)
- Hazard Classes
  - Low/Med (21-40)
  - Med (41-60)
  - High (61-80)
  - Very High (81-100)
- Beetle Management Unit
- VRI Polygon
- Natural Resource District
- Cutting Permit
- RESULTS Opening
- Road Permit Active
- Road Permit Pending
- KM Marker

0 0.1 0.2



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

**SPRUCE BARK BEETLE REPORT  
FH16DMK016,017**

POLYGON: 2015-GAF-036

HECTARES:

79.73

WALKTHROUGH DISTANCE:

6200

ESTIMATED INFESTED PIXELS FROM

WALKTHROUGH (Code 1-4)

4

6.5%

**SUMMARY OF CURRENT INFESTATION**

Walkthrough estimate shows 6.5% infested pixels that were mixed in with moderate code 5 2013 attack. All of the recent attack found was code 1's (4) and Code 2's (1) and are in the first year of a 2 year cycle, 2017 flight. Areas of attack follow a drainage and are alongside the lake in the north. There were 2 probe lines established and they incorporated most of the attack and came back with a High sanitation rating although only 2 more infested trees found in rest of polygon.

LIGHT SCATTERED ATTACK

**ACCESS**

Access is truck as Thutda road splits polygon

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

Slopes throughout range from 0-40%. Areas of Balsam within, and average 60% Spruce stand. Polygon is boundaried by cutblocks and a Lake.

**SIZE, BOUNDARY and PATTERN OF INFESTATION**

Scattered attack with Code 1 and 2 attack found scattered along the lake. All found were in the first year of a 2 year cycle and was mixed within some heavier Code 5 older attack along the north edge of polygon along lake.

**INCIDENCE AND SEVERITY OF ATTACK**

Sanitation rating is heavy, due in part to the numerous code 5 old attack represented within the 2 probes. High attack density and low Larval density also represented, all attacked trees on year 1 of a 2 year cycle as found 4 CODE-1 Attack and 1 CODE 2 strip attack.

**RISK OF BEETLE SPREAD**

Attack is alongside lake for the most part and has numerous older code 5 attacked trees within. Beetle can continue to spread throughout polygon and north from 2017 flight

**ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES**

Mainline touches bottom of polygon however attack is around the backside of the lake and alongside the Lake. There are also a couple of drainages within polygon

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

There was patchy scattered attack with all trees on the 1st year of a 2 year cycle. Schedule another walkthrough with this polygon 2016-2017. HIGH Sanitation rating due to 2 probe lines incorporating most of the attack. High exposure as next to Lake.

**OPTION 2****TRAP TREES/ HARVEST**

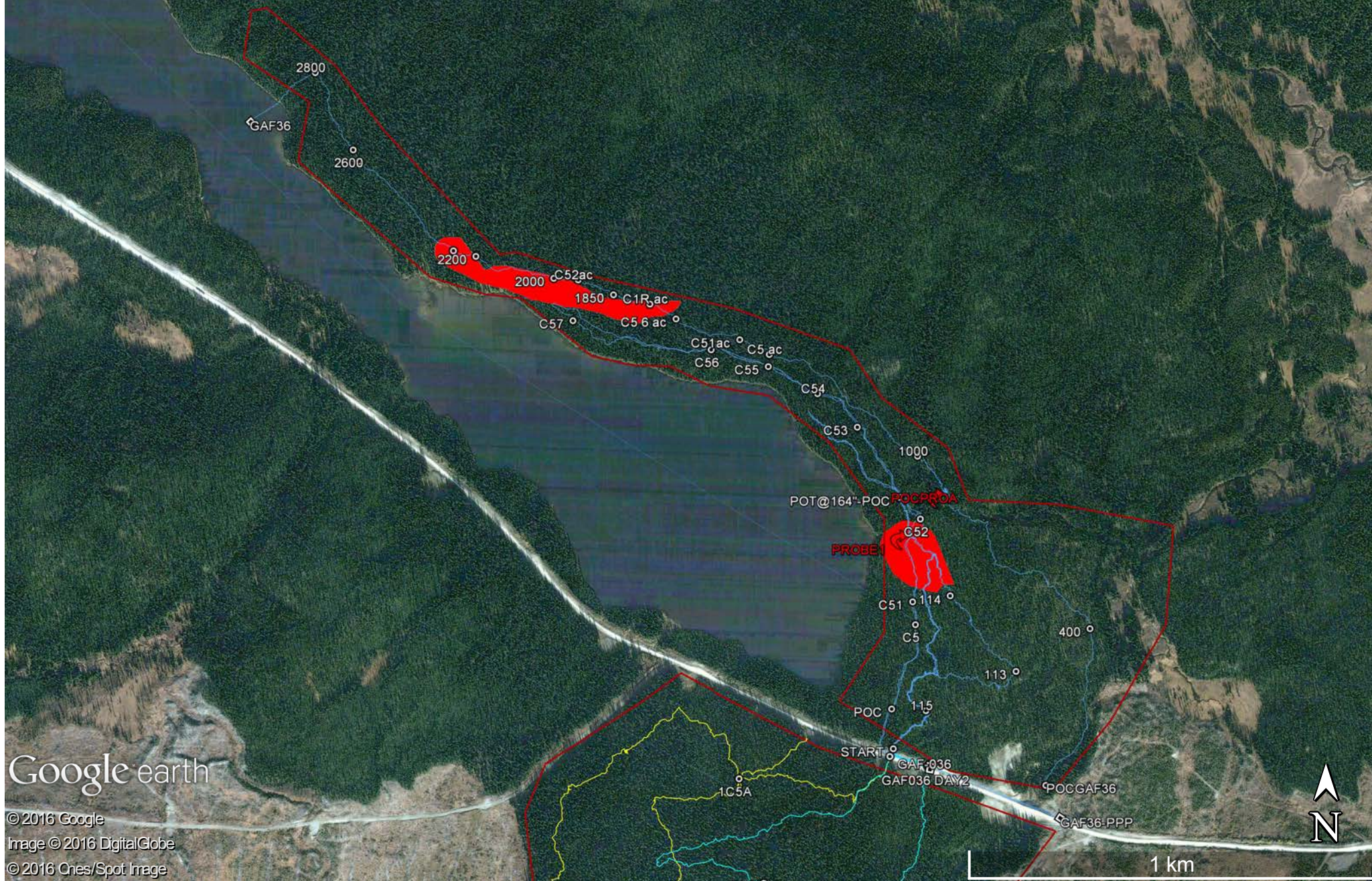
As much of the attack alongside a lake and close to existing road, may want to schedule trap tree or funnel trap program in fall winter 2016/2017 depending on other activities within area. Beetles are on year 1 of a 2 year cycle. Harvest is an option if want to sanitize area and log alongside the lake.

# 2015-GAF-036

SPRUCE BEETLE WALKTHROUGHS

## Legend

- PROBES
- RECENTLIGHT SCATTERED ATTACK



Google earth

© 2016 Google  
Image © 2016 DigitalGlobe  
© 2016 Cnes/Spot Image

|                               |     |                 |               |                                                   |             |      |
|-------------------------------|-----|-----------------|---------------|---------------------------------------------------|-------------|------|
| 2015-GAF-036                  | HEC | 79.73           | METERS WALKED | 6200                                              | % TRAVERSED | 7.8% |
| PIXELS COVERED BY WALKTHROUGH | 62  | INFESTED PIXELS | 4             | ESTIMATED % OF BLOCK INFESTED (From Walk through) |             | 6.5% |

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                 | 9.9                     | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  | 36.3               |
| 25.1-30.0      | 5.3                 | 21.2                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  | 26.5               |
| 30.1-35.0      | 7.1                 | 71                      | 0.0                                | 0.0 | 0.0  | 0.0 | 14.2 | 3.6  | 35.5               |
| 35.1-40.0      | 9.4                 | 37.6                    | 9.4                                | 0.0 | 0.0  | 0.0 | 37.6 | 4.7  | 18.8               |
| 40.1-45.0      | 11.6                | 23.2                    | 0.0                                | 5.8 | 0.0  | 0.0 | 46.4 | 0.0  | 0                  |
| 45.1-50.0      | 13.8                | 13.8                    | 13.8                               | 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                | 25.3                    | 0.0                                | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  | 0                  |
| TOTALS         | 337.5               | 202                     | 23.2                               | 5.8 | 0.0  | 0.0 | 98.2 | 8.25 | 117.1              |

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating

| MEAN NO. OF<br>ENTRANCE HOLES PER<br>225 cm2 PHLOEM<br>SAMPLE | < 1 LOW Attack Density        | MEAN NO. OF<br>LIVING LARVAE<br>PER 225 cm2<br>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   |
| 2.00                                                          | < 3.9 SEVERE Attack Density   | 2.75                                                         | >24.9 EXTREME Mean Larval Density  |

TABLE 2- Spruce Beetle Management Options after Walkthrough

|                 |       |     |                                                |         |                                         |        |
|-----------------|-------|-----|------------------------------------------------|---------|-----------------------------------------|--------|
| % 2015 ATTACK   | 8.6%  | 8.6 | SANITATION AND SALVAGE HARVEST PRIORITY RATING |         |                                         |        |
| % 2014 ATTACK   | 0.0%  | ##  | LIGHT                                          | 0-599   | LEAVE (Monitor, Trap Trees, Baits, etc) | 1223.5 |
| % 2013 ATTACK   | 31.5% | ##  | MODERATE                                       | 600-999 | PROBE (To Obtain Further Info)          |        |
| % HOST IN STAND | 74.2% | ##  | HEAVY                                          | 1000+   | RECOMMEND CRUISING/ LOGGING             |        |

FROM 2 PROBE LINES IN AREAS WITH ATTACK. TOTAL

SUMMARY OF ALL CARDS  
FS1111

NUMBER OF CARDS

2

| ACCESS -                      | Access is truck as Thutda road splits polygon                                                                                           |                         |                                    |                  |            |                        |      |            |                    |    |  |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------|------------------|------------|------------------------|------|------------|--------------------|----|--|
| POLYGON FEATURES -            | Slopes throughout range rom 0-40%. Areas of Balsam within, and average 60% Spruce stand. Polygon is boundaried by cutblocks and a Lake. |                         |                                    |                  |            |                        |      |            |                    |    |  |
| 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                                                                                                                                     | 3                       | 0                                  | 0                | 0          | 0                      | 0    | 0          | 11                 | 0  |  |
| 25.1-30.0                     | 5.3                                                                                                                                     | 4                       | 0                                  | 0                | 0          | 0                      | 0    | 0          | 5                  | 0  |  |
| 30.1-35.0                     | 7.1                                                                                                                                     | 10                      | 0                                  | 0                | 0          | 0                      | 2    | 1          | 5                  | 0  |  |
| 35.1-40.0                     | 9.4                                                                                                                                     | 4                       | 1                                  | 0                | 0          | 0                      | 4    | 1          | 2                  | 0  |  |
| 40.1-45.0                     | 11.6                                                                                                                                    | 2                       | 0                                  | 1                | 0          | 0                      | 4    | 0          | 0                  | 0  |  |
| 45.1-50.0                     | 13.8                                                                                                                                    | 1                       | 1                                  | 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                                                                                                                                    | 1                       | 0                                  | 0                | 0          | 0                      | 0    | 0          | 0                  | 0  |  |
| TOTALS                        |                                                                                                                                         | 25                      | 2                                  | 1                | 0          | 0                      | 10   | 2          | 23                 | 0  |  |
| BARK SAMPLES<br>15 cm x 15 cm | NO. ENTRANCE HOLES                                                                                                                      | NO. PARENT ADULTS       | NO. LARVAE                         | NO. PUPAE ADULTS | NO. CALLOW | FRESH (GREEN) BLOWDOWN |      |            |                    |    |  |
|                               |                                                                                                                                         |                         |                                    |                  |            | Attacked<br>Yr         | Yr   | Unattacked |                    |    |  |
| 4                             | 8                                                                                                                                       | 0                       | 11                                 | 0                | 0          | 0                      | 0    | 0          |                    |    |  |
|                               |                                                                                                                                         |                         |                                    |                  |            |                        |      |            |                    |    |  |

SIZE, BOUNDARY AND PATTERN OF THE INFESTATION

Scattered attack with Code 1and 2 attack found scatterd along the lake. All found were in the first year of a 2 year cycle and was mixed within some heavier Code 5 older attack along the north edge of polygon along lake.

INCIDENCE AND SEVERITY OF THE INFESTATION

Sanitation rating is heavy, due in part to the numerous code 5 old attack represented within the 2 probes. High attack density and low Larval density also represented, all attacked trees on year 1 of a 2 year cycle as found 4 CODE-1 Attack and 1 CODE 2 strip attack.

RISK OF BEETLE SPREAD

Attack is alongside lake for the most part and has numerous older code 5 attacked trees within. Beetle can continue to spread throughout polygon and north from 2017 flight

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Mainline touches bottom of polygon however attack is around the backside of the lake and alongside the Lake. There are also a couple of drainages within polygon

# SPRUCE BEETLE PROBE CARD

| LOCATION<br>0422395            |                     | 6137272                 |                                    | PAGE 1             | OF 1              |                          |            |   |                    |  |
|--------------------------------|---------------------|-------------------------|------------------------------------|--------------------|-------------------|--------------------------|------------|---|--------------------|--|
| BEARING<br>341°                |                     | DISTANCE<br>100m        |                                    | STRIP WIDTH<br>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                         |                     |                         |                                    |                    |                   |                          |            |   |                    |  |
| BARK SAMPLES<br>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                             | 4                   | 1                       | 3                                  | 1                  | 1                 | 1                        | 1          |   |                    |  |
| COMMENTS                       |                     |                         |                                    |                    |                   |                          |            |   |                    |  |
| CREW NAMES<br>Dailen V Blake R |                     |                         |                                    |                    |                   | DATE<br>Y M D<br>16 1 19 |            |   |                    |  |

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

# BRITISH COLUMBIA BEETLE PROBE CARD

| LOCATION<br>GAF 36<br>6137374                        |                          | ELEVATION               | LATITUDE                           | PAGE                                                                                                               | OF                |                             |            |   |                    |       |
|------------------------------------------------------|--------------------------|-------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|------------|---|--------------------|-------|
| BEARING<br>310°                                      | STRIP LINE NO<br>Probe A | STRIP WIDTH<br>10m      | DISTANCE<br>100m                   | BEETLE SPECIES<br><input checked="" type="checkbox"/> SB <input type="checkbox"/> MPB <input type="checkbox"/> 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                                               |                          | 17                      | 1                                  |                                                                                                                    |                   |                             | 5          |   | 17                 |       |
| BARK SAMPLES<br>15cm x 15cm                          | NO. ENTRANCE HOLES       | NO. PARENT ADULTS       | NO. LARVAE                         | NO. PUPAE                                                                                                          | NO. CALLOW ADULTS | FRESH (GREEN) BLOWDOWN      |            |   |                    |       |
|                                                      |                          |                         |                                    |                                                                                                                    |                   | Attacked                    | Unattacked |   |                    |       |
| N                                                    | 2                        |                         |                                    |                                                                                                                    |                   |                             |            |   |                    |       |
| S                                                    |                          |                         |                                    |                                                                                                                    |                   |                             |            |   |                    |       |
| COMMENTS<br>Heavy wood peck<br>Past 50m all immature |                          |                         |                                    |                                                                                                                    |                   |                             |            |   |                    |       |
| CREW NAMES<br>Aaron Colebank                         |                          |                         |                                    |                                                                                                                    |                   | DATE<br>Y M D<br>2016 02 10 |            |   |                    |       |

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

## TOPOGRAPHY

STRIP No.

GAF-036

## TIMBER TYPE

|      |  |  |
|------|--|--|
| 700m |  |  |
| 600m |  |  |
| 500m |  |  |
| 400m |  |  |
| 300m |  |  |
| 200m |  |  |
| 100m |  |  |
| 0m   |  |  |

Bearing 325

Bearing 110°

STRIP NO.: GAF-036 DIRECTION: 15°

START STRIP: 0m-700m

JOB NO.: Seneca walkthru DATE: Jan 18/16

CREW: Dallen V, Blake B

REMARKS: 95% Spruce &lt; 15-200m



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Ph: 1-800-663-6843

## TOPOGRAPHY

STRIP No.

GAF-036

## TIMBER TYPE

|       |  |  |
|-------|--|--|
| 1400m |  |  |
| 1300m |  |  |
| 1200m |  |  |
| 1100m |  |  |
| 1000m |  |  |
| 900m  |  |  |
| 800m  |  |  |
| 700m  |  |  |

End

Bearing 180°

STRIP NO.: GAF-036 DIRECTION: 180° (250m)

START STRIP: 700m-1400m

JOB NO.: Seneca walkthru DATE: Jan 18/16

CREW: Dallen V, Blake B

REMARKS:



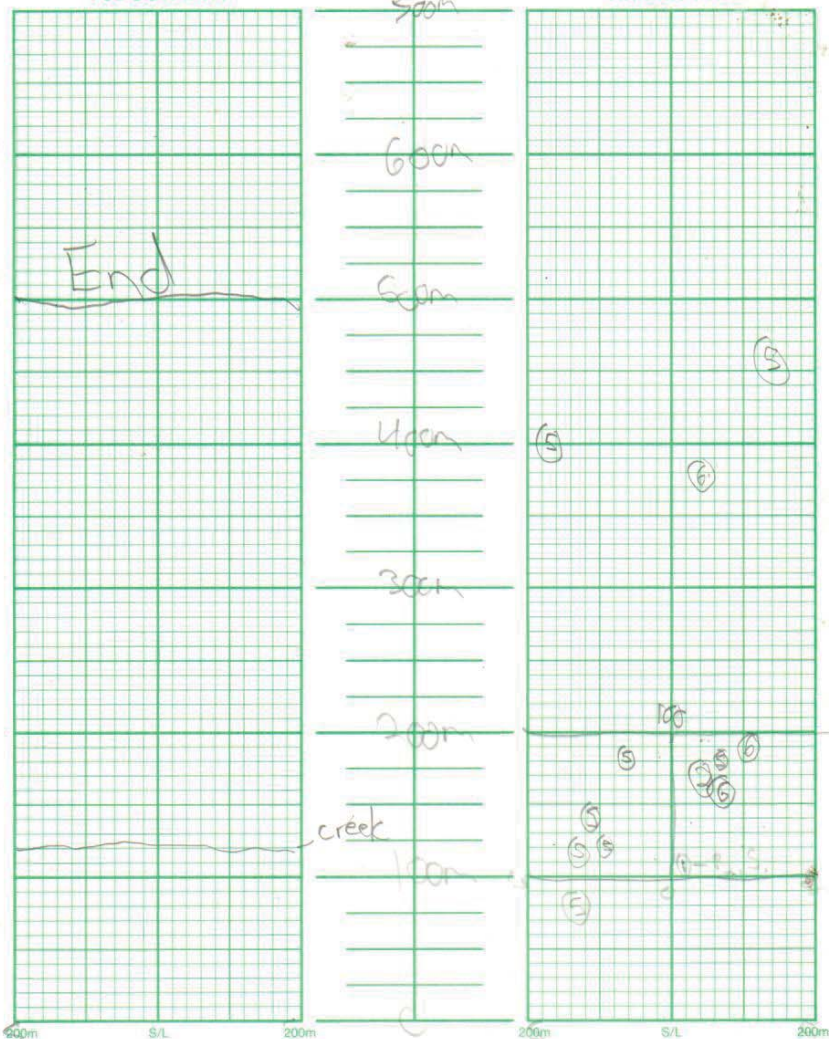
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Ph: 1-800-663-6843

## TOPOGRAPHY

STRIP No.

GAF-026 Day 2

## TIMBER TYPE



STRIP NO.:

GAF-026

DIRECTION:

328°

START STRIP:

0-700

JOB NO.:

Schoen walking

DATE:

Jan. 19/2016

CREW:

Dailen V, Bbka B

REMARKS:



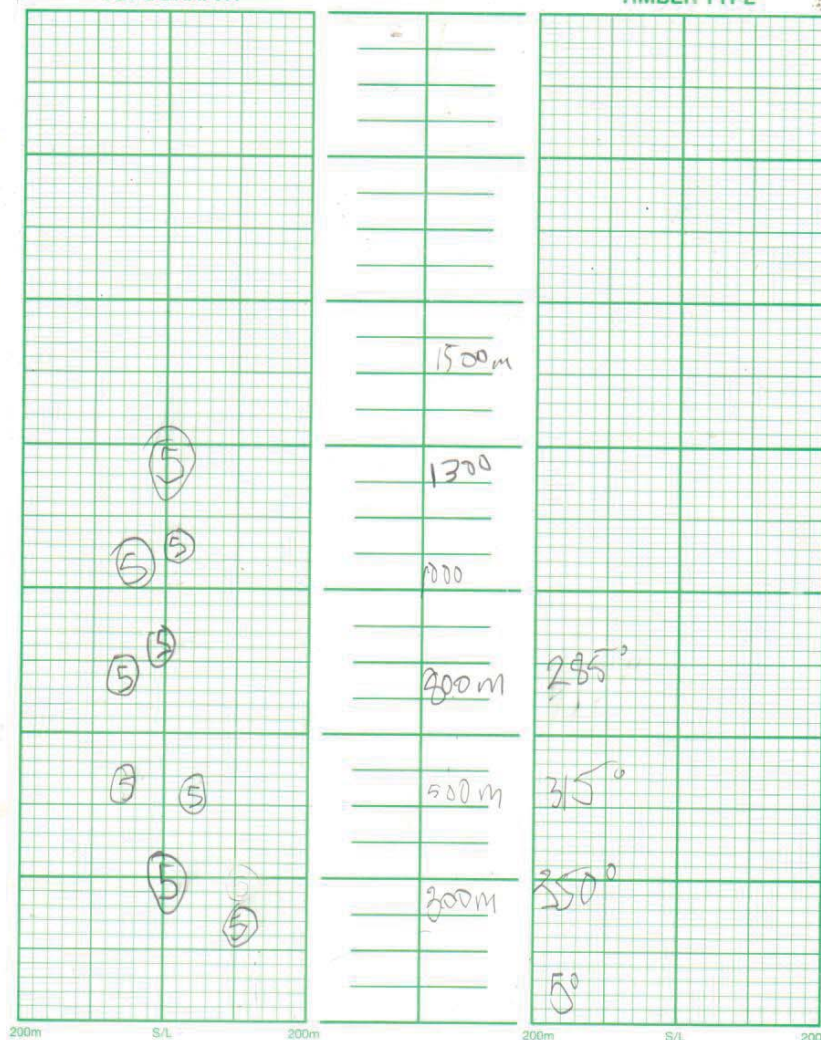
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## TOPOGRAPHY

STRIP No.

GAF 36

## TIMBER TYPE



STRIP NO.:

GAF 36

DIRECTION:

START STRIP:

JOB NO.:

DATE:

FEB 11, 2016

CREW:

PATRICK PELLETIER

REMARKS:



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| TOPOGRAPHY                                                                        | STRIP No. 1000 2 | TIMBER TYPE                              |
|-----------------------------------------------------------------------------------|------------------|------------------------------------------|
|                                                                                   | 1100             |                                          |
|                                                                                   | 1000             | Probe A ends @ 990m                      |
|  | 900              | Probe A @ 80m                            |
|                                                                                   | 800              | Ⓢ Scale change                           |
|                                                                                   | 600              | 20% Slope                                |
|                                                                                   | 400              | 310° bearing<br>70/30 Bl/Sw<br>40% Slope |
|                                                                                   | 200m             | 70/30 Bl/Sw<br>40% Slope                 |
|                                                                                   | 0                | 15° bearing                              |

STRIP NO. 2  
 START STRIP: 10 u 0422721 6136650  
 JOB NO. GAF36  
 DATE: 1254<sup>th</sup> 2016  
 1. labant

| TOPOGRAPHY | STRIP No. 2 | TIMBER TYPE    |
|------------|-------------|----------------|
|            | 2500        |                |
| ①          | 2300        |                |
|            | 2100        | 10/30 Sw/Bl    |
| ⑤          | 1900        | 70/30 Sw/Bl    |
| ①          | 1700        | flat           |
|            | 1500        | 60/40 Sw/Bl    |
| ⑤ ⑤        | 1300        | flat           |
| ⑤          | 1100        | 60/40 Sw/Bl    |
|            |             | Ⓢ Scale change |

STRIP NO.  
 START STRIP:  
 JOB NO.  
 DIRECTION  
 DATE

TOPOGRAPHY

STRIP No.

2

TIMBER TYPE

|  |  |      |             |
|--|--|------|-------------|
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  |      |             |
|  |  | 2900 |             |
|  |  |      | 240 @ 2800m |
|  |  | 2700 |             |
|  |  |      |             |
|  |  |      | ⑤ ⑤         |
|  |  | 2500 |             |

STRIP NO.

DIRECTION

START STRIP

JOB NO.

9AF.36

DATE

Feb 4<sup>th</sup>, 2016