



**APPENDIX J-4**

**2012 AERIAL NEST SURVEY**





**RAINY RIVER**

**RAINY RIVER GOLD PROJECT  
2012 AERIAL NEST SURVEY**

**Submitted by:**

**AMEC Environment & Infrastructure  
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**On behalf of:**

**Rainy River Resources  
1111 Victoria Avenue East  
Thunder Bay, Ontario  
P7C 1B7**

**December 2012  
TC111504**



December 14, 2012  
TC111504

Mr. Kyle Stanfield, P.Eng  
Vice President, Environment & Sustainability  
Rainy River Resources Ltd.  
1111 Victoria Avenue East  
Thunder Bay, ON  
P7C 1B7

Dear Mr. Stanfield,

AMEC Environment & Infrastructure is pleased to submit the attached 2012 Aerial Nest Survey Report for the Rainy River Gold Project.

The 2012 study documents stick nests in the study area as well as observations of avian species.

We greatly appreciate the opportunity to provide support for your Rainy River Gold Project. Should you have any questions regarding the study, please do not hesitate to contact us.

Yours Sincerely,

**AMEC Environment & Infrastructure,**  
a division of AMEC Americas Limited

A handwritten signature in black ink that reads "Matt Evans".

Matt Evans, Ph.D.  
Senior Biologist

A handwritten signature in black ink that reads "Sheila Daniel".

Sheila Daniel, M.Sc. P.Geo.  
Senior Associate Geoscientist  
Head, Environmental Management



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## 1.0 INTRODUCTION

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by Rainy River Resources Ltd. (RRR) to conduct an aerial survey for raptor nests at the Rainy River Gold Project (RRGP) site located in the Township of Chapple, District of Rainy River, in northwestern Ontario, approximately 65 kilometres (km) northwest of Fort Frances, and 420 kilometres west of Thunder Bay (Figures 1 and 2). This report summarizes the methods, results and discussion of this aerial nest survey conducted by AMEC on April 5, 2012.

## 2.0 STUDY OBJECTIVES

The objective of this aerial survey was to locate any large stick nests, focusing primarily on raptor nests, within the proposed mine site and the proposed transmission line corridor alternatives.

The need for this survey arose from the fact that active nests (of all species) are protected during the breeding seasons by the *Migratory Bird Convention Act* (1994), the *Fish and Wildlife Conservation Act* (1997; *FWCA*) and the *Endangered Species Act* (2007). For raptors, breeding occurs annually from February to late July or early August and their nests are protected throughout this period. Protective measures for raptor nests usually consists of establishing a 500 to 800 m buffer around the nest site (size varies between species).

## 3.0 METHODOLOGY

### 3.1 Study Area

The Study Area consists of two survey components: i) the proposed mine site area, and ii) four potential transmission line corridors. The mine site consists of relatively flat lands characterized by extensive agricultural land with some streams and small wetlands, mixed Trembling Aspen forests, and areas of rolling rocky outcrops. The proposed transmission line corridors occur in similar habitats west of Highway 71, but east of Highway 71 they stretch across rocky terrain dominated by coniferous and mixed forest. Areas east of Highway 71 contain numerous small lakes and wetlands.

### 3.2 Aerial Survey

A spring aerial raptor nest survey was undertaken on April 5, 2012. This survey provided coverage across the proposed mine site area as well as the proposed transmission line alternatives which would join the proposed mine to an existing transmission line occurring approximately 16 km to the northeast of the mine site. For the proposed mine site area, the survey involved flying 20 east-west transects that were 17 km long and spaced at 500 m intervals (Figure 2). For the proposed transmission line alternatives, the survey involved 24 transect lines that were 13.5 km long and also spaced at 500 m (Figure 2). Transect lines

provided 100% coverage of all natural areas within and beyond the expected project footprint transmission line alternatives. The aerial surveys were undertaken with a Eurocopter AS350 (A-Star) helicopter. The airspeed traveled during surveys was approximately 100 km/hr at an elevation of approximately 100 m (330 ft). Waypoints for the start and end of the survey lines were prepared and provided to the pilot for navigation.

Observers sat on either side of the aircraft and recorded sightings of all stick nests and birds. Nests recorded were identified as active or inactive depending on evidence presented during observation. Active nests were occupied by adults incubating eggs or by unattended eggs. Observation conditions were excellent with no cloud cover, no precipitation, low wind levels, and warm temperatures.

## 4.0 RESULTS

### 4.1 Avian Stick Nests

Raptors including owls, falcons, eagles, ospreys, herons and hawks, typically nest in large trees or on top of man-made structures such as transmission line poles in open or forested areas and along forested edges of large water bodies.

A total of 14 stick nests were observed across the Study Area (Figures 3a, b). Six of these nests were considered active at the time of observation. Nests of three bird species were observed: Bald Eagle, Great Horned Owl and Common Raven.

**Table 1: Nests Observed During the 2012 Aerial Survey**

Common Name	Number of Nests at the Proposed Mine Site		Number of Nests Along the Transmission Line Alternatives		Total Nests	Total Active Nests
	Active	Inactive	Active	Inactive		
Bald Eagle	0	1	2	6	9	2
Common Raven	3	0	1	0	3	3
Great Horned Owl	0	0	1	0	1	1
Unidentified	0	0	0	1	1	0

Bald Eagle nests were found within typical Bald Eagle nesting habitat, along the shores of large-fish bearing lakes (Figures 3a, b). One of these nests was found within close proximity to the proposed mine site (Figure 3b).

Common Ravens occur over most of the Northern Hemisphere in nearly any habitat. Two of the three Common Raven nests identified during the aerial surveys were found in close proximity to transmission line alternatives (Figures 3a, b).

A Great Horned Owl nest was found outside of the proposed mine footprint to the north along Highway 71 (Figure 3a). A second nest was found in close proximity to this location and was inactive but is believed to have been built by either a Great Horned Owl or a Common Raven.

## 4.2 Avian Observations

A total of 14 bird species were identified during the aerial surveys (Figures 3-1a and b). Four of these species were raptors (Bald Eagle, Merlin, Osprey and Red-tailed Hawk). Bald Eagles accounted for 78% (14 of 18) of all raptor observations. Turkey Vultures were observed on four occasions. A total of 12 Trumpeter Swans were observed sporadically in pairs around the Study Area. Sandhill Cranes were observed on two occasions (Figures 3a, b).

## 5.0 DISCUSSION

### 5.1 Proposed Mine Site

One active Bald Eagle nest was found in close proximity to the proposed mining activities (Figure 3a, b). Bald Eagles are listed as species of *Special Concern* under the *ESA* and therefore do not receive habitat protection under this Act. However, Section 7 of the *FWCA* states that “*a person shall not destroy, take or possess the nest or eggs of a bird that belongs to a species that is wild by nature*” without authorization from the Minister. A licence from the Minister under the *FWCA* will be required should mining activities necessitate the removal of this Bald Eagle nest. Bald Eagle nesting habitat, as described in Section 4.1 above, is relatively common within the Study Area and as such, the removal of this Bald Eagle nest would have no net negative impacts on the local population.

Should the Bald Eagle nest be retained, a disturbance buffer zone within which human activities and habitat alterations are restricted will be required. The boundary zone of this buffer is typically 400 to 800 m from the nest and is determined through site-specific consultation with the Ministry of Natural Resources.

### 5.2 Transmission Line Alternatives

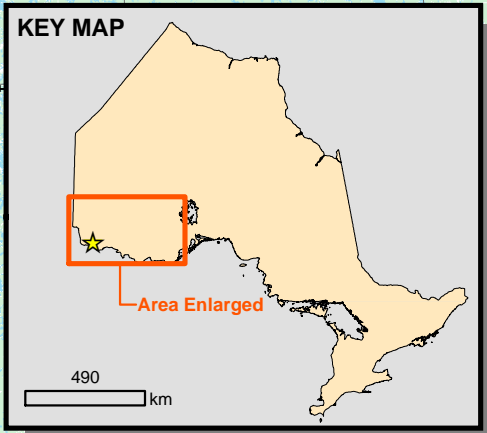
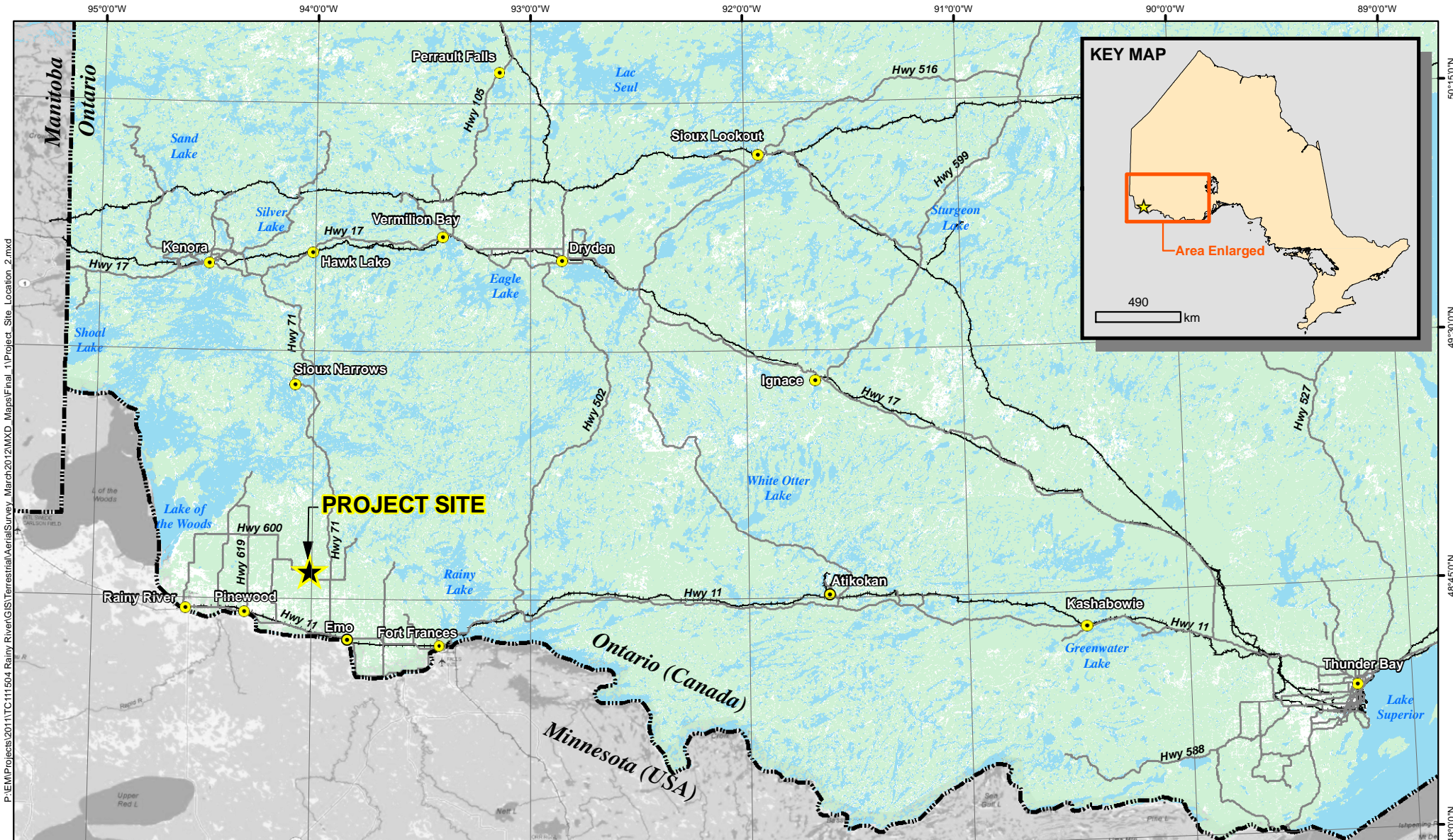
Two non-raptor nests (Common Raven) were found in close proximity to three of four proposed transmission line alternatives (Figure 3-1a). Transmission line Alternative A was free of any large stick nests of any species. Should Alternative B, C or D be pursued, approval under Section 7 of the *FWCA* will be required. Common Raven nesting habitat, as described in Section 4.1 above, is relatively common within the Study Area and as such, the removal of this Common Raven nest would have no net negative impacts on the local population.

If the construction of the proposed transmission line corridor was to occur in the winter, outside of the Common Raven breeding season, no disturbance buffer zone would be required.

## **6.0 CLOSING**

This document was prepared exclusively for Rainy River Resources Ltd., by AMEC Americas Limited. The quality of information contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions and qualifications set forth in this document. This document is intended to be used by Rainy River Resources Ltd., subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance upon this document by any third party for any other purpose will be at that party's sole risk.





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- LEGEND**
- Project Site
  - Regional Communities
  - Provincial / National Border
  - Regional Road / Highway
  - Railway

**NOTES:**

- Ontario base data extracted from Land Information Ontario (MNR) data warehouse.
- Base data outside of Ontario extracted from ESRI DeLorme World Basemap



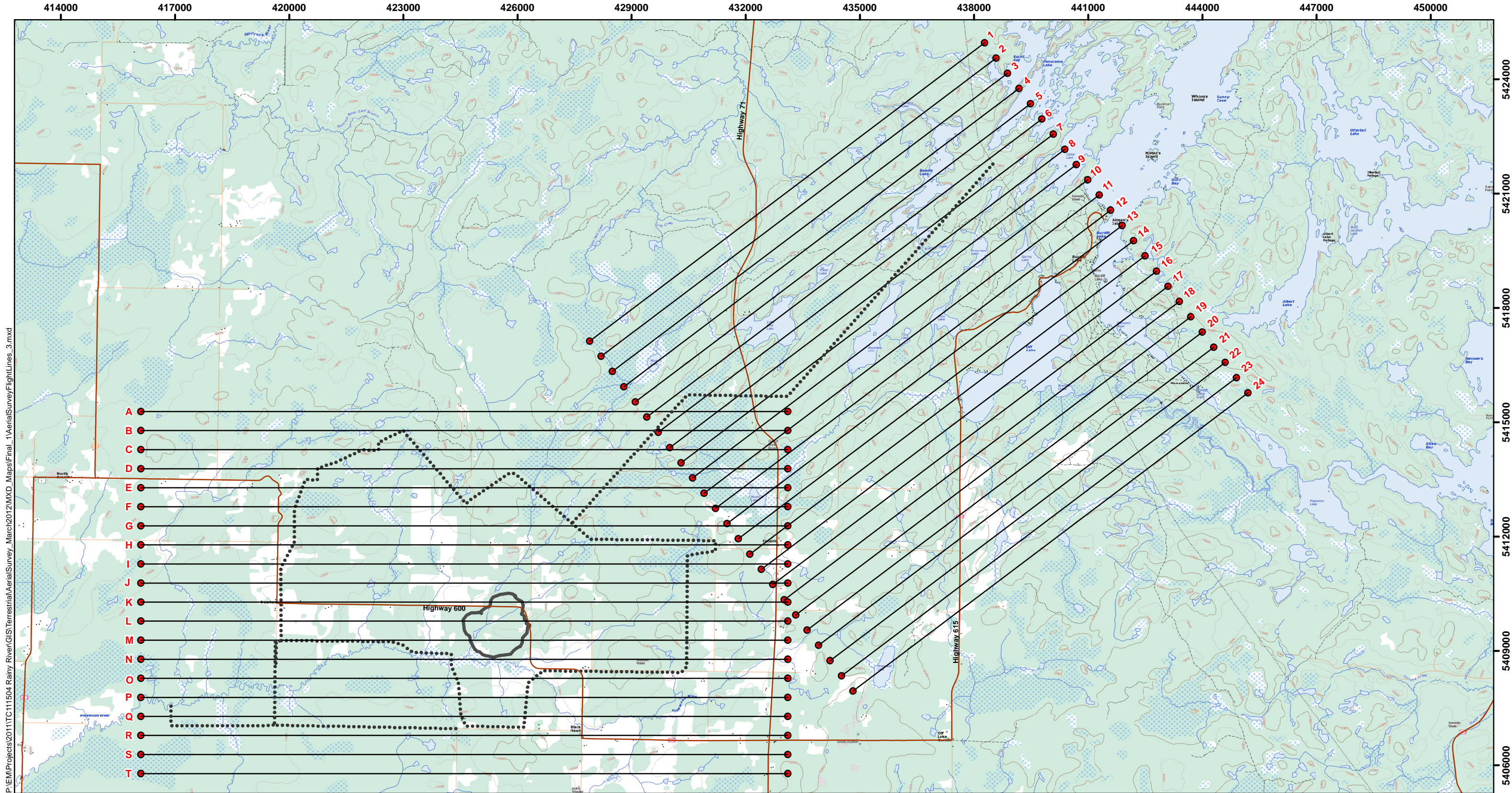
**RAINY RIVER GOLD PROJECT**

**Project Location**



Datum: NAD83 Projection: UTM Zone 15N	PROJECT N <sup>o</sup> : TC111504	FIGURE: 1
	SCALE: 1:1,800,000	DATE: May 2012





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- LEGEND**
- Approximate Open Pit Outline
  - Approximate Project Boundary
  - Flight Line Transect (ID labelled on map)

NOTES:  
 - Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG



**RAINY RIVER GOLD PROJECT**

**2012 Aerial Survey  
Transect Lines**

Datum: NAD83  
 Projection: UTM Zone 15N



PROJECT N<sup>o</sup>: TC111504

FIGURE: 2

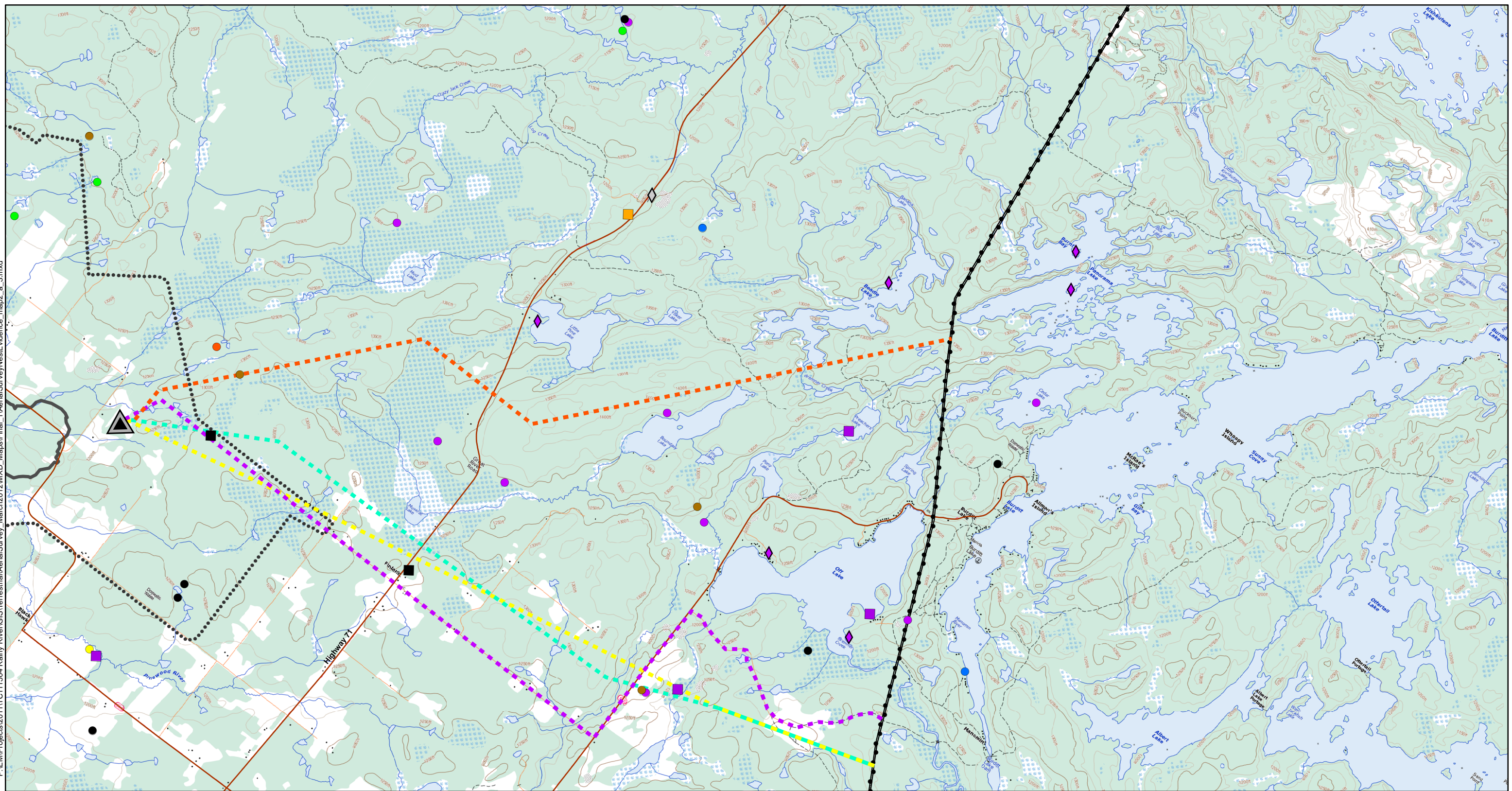
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DATE: May 2012





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**LEGEND**

- Approximate Open Pit Outline
- Approximate Project Boundary
- Approximate Processing Plant Location
- Existing Transmission Line

- Transmission Line:  
Preliminary Alternative Routes**
- Alternative A (approx. 16.6 km)
  - Alternative B (approx. 15.7 km)
  - Alternative C (approx. 16 km)
  - Alternative D (approx. 19.2 km)

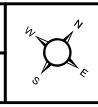
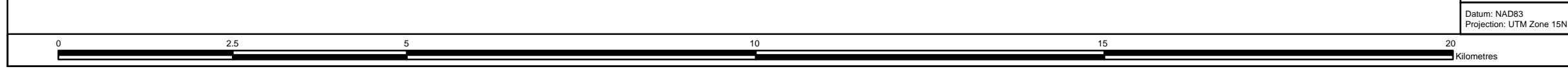
- Aerial Survey Observation Results**
- |                         |                  |                    |
|-------------------------|------------------|--------------------|
| <b>Observation Type</b> | <b>Raptors</b>   | <b>Other Birds</b> |
| Bird                    | Bald Eagle       | Common Raven       |
| Nest                    | Great Horned Owl | Sandhill Crane     |
| Nest Old/Inactive       | Merlin           | Trumpeter Swan     |
|                         | Osprey           | Turkey Vulture     |
|                         | Red-tailed Hawk  | Unidentified       |

NOTES:  
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG



**RAINY RIVER GOLD PROJECT**

**2012 Aerial Survey Results  
Proposed Transmission Line  
Corridor Alternative Routes**



Datum: NAD83  
Projection: UTM Zone 15N

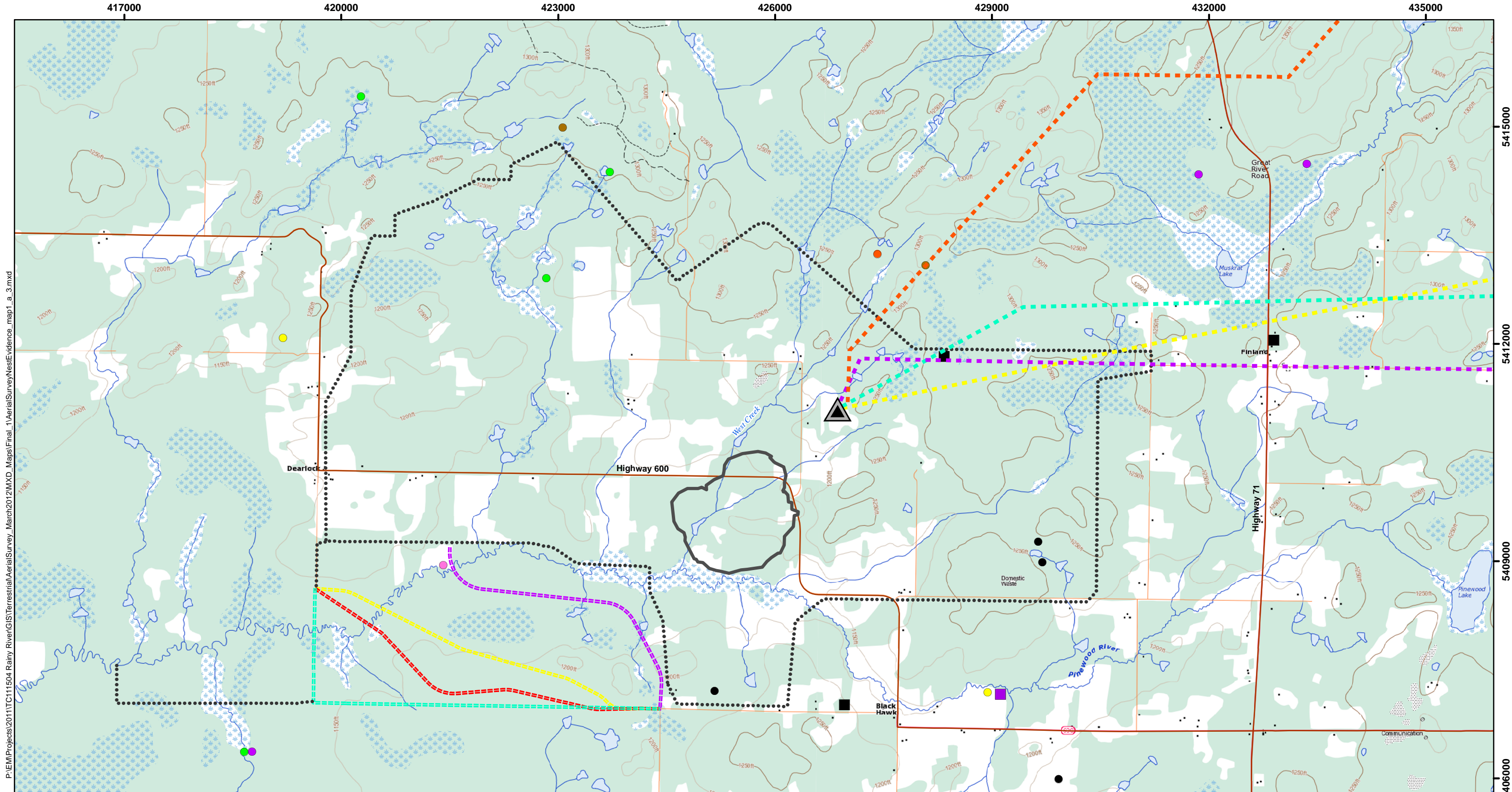
PROJECT N<sup>o</sup>: TC111504

SCALE: 1:70,000

FIGURE: 3a

DATE: May 2012





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**LEGEND**

- Approximate Open Pit Outline
- Approximate Project Boundary
- Approximate Processing Plant Location

**Transmission Line:  
Preliminary Alternative Routes**

- Alternative A (approx. 16.6 km)
- Alternative B (approx. 15.7 km)
- Alternative C (approx. 16 km)
- Alternative D (approx. 19.2 km)

**Highway 600 Realignment:  
Preliminary Alternative Routes**

- Alternate A (approx. 5.3 km)
- Alternate B (approx. 5.1 km)
- Alternate C (approx. 6.4 km)
- Alternate D (approx. 4.3 km)

**Aerial Survey Observation Results**

- Observation Type**
- Bird
  - Nest
  - Nest Old/Inactive

- Raptors**
- Bald Eagle
  - Great Horned Owl
  - Merlin
  - Osprey
  - Red-tailed Hawk

- Other Birds**
- Common Raven
  - Sandhill Crane
  - Trumpeter Swan
  - Turkey Vulture
  - Unidentified

NOTES:  
- Background topographic map extracted from Toporama, Geogratis, NRCan 1:50k DRG

Datum: NAD83  
Projection: UTM Zone 15N



**RAINY RIVER GOLD PROJECT**

**2012 Aerial Survey Results  
Proposed Project Location**

PROJECT N<sup>o</sup>: TC11504

FIGURE: 3b

SCALE: 1:50,000

DATE: May 2012

