

14-066

# **Geochemical Report**

# **Yukon Mineral Exploration Program (YMEP)**

WEST-Woodcutter Range Regional Exploration Program

# **Whitehorse Mining District**

NTS: 115I/07, 115I/08 Latitude: 62° 21.82' N Longitude: -136 ° 22.86' W

Work Performed On: July 14 - 18, 2014

Prepared for Shawn Ryan. By GroundTruth Exploration Inc.

Written by: Isaac Fage

March 30, 2015



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### 1 Introduction

GroundTruth Exploration Inc. conducted a regional soil sampling program over the proposed traverses in the West - Woodcutter Range Regional Exploration Program application. A total of 733 soil samples were collected with a 9 person crew based from Carmacks between July 14 – 18, 2014. The regional program consisted of ridge and spur soil sampling at 50m station spacing on 24 traverses.

The primary target of the regional program is to locate gold and/or copper-gold porphyry or intrusive style mineralization. The regional follows up on a reconnaissance sampling program in the area conducted in 2012. The 2012 soil data, prospective regional geology and airborne geophysical data were used by Shawn Ryan to position the traverses on the regional program.

# **Property Description**

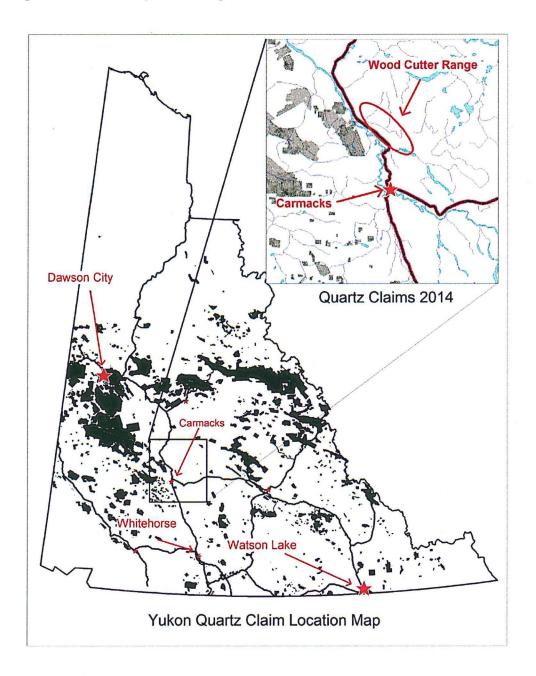
The West – Woodcutter Range Regional Exploration program is located in Central Yukon, approximately 30km North of the community of Carmacks (figure 1). The approximate center of the regional is located at Latitude 62° 21.82' N and Longitude: -136° 22.86' W.

The regional is located in the Woodcutter Range within the Stikinia Terrane. Vegetation is typical of Central Yukon in the Carmacks area, dominated by spruce and pine on East and West slopes, black spruce with thick sphagnum moss on North facing slopes and grassy/sage exposure on many South facing slopes. Permafrost is common on North facing slopes and there is a blanket of volcanic ash covering the area that is typically 5-10cm thick just below the surface. Elevations on the survey are range from 1100m on ridgetops to 500m in the Yukon River valley.

The regional was accessed by helicopter based out of Carmacks. Some traverses were accessed by vehicle when they were within walking distance from the North Klondike Highway. The regional was operated by moving the first load from Carmacks Trans North base and successive loads staged from nearest landing zone off of the Klondike Highway.



Figure 1: Location Map- West Regional





# **Geology and Geophysics**

# 1.1 Regional Geology

The regional area occurs within the Stikinia Terrane. The prospective unit focused on in this regional is: uTrp- Povoas which is a volcanic unit that forms the Woodcutter Ridge. (Figure 2)

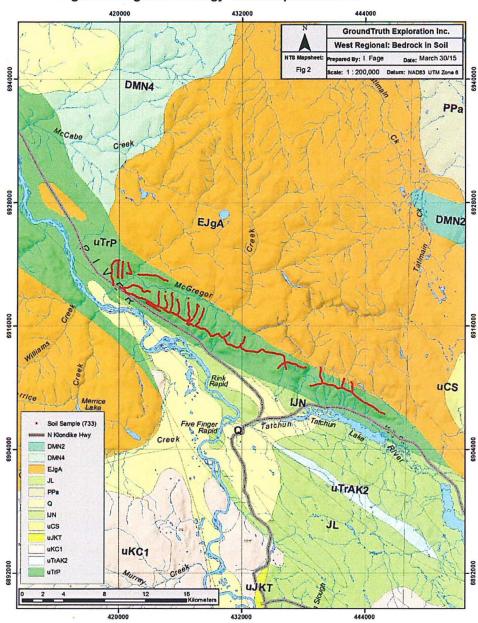


Figure 2: Regional Geology with sample locations



### **Bedrock Geology Legend for Figure 2:**

### QUATERNARY



#### Q: QUATERNARY

unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluviatile silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits

### **EARLY JURASSIC**



### EJgA: AISHIHIK SUITE

medium- to coarse- grained, foliated biotite-hornblende granodiorite; biotite rich screens and gneiss schlieren; foliated hornblende diorite to monzodiorite with local K-feldspar megacrysts; may include unfoliated monzonite of the Long Lake Suite (Aishihik Suite)

### **UPPER TRIASSIC, CARNIAN AND OLDER (?)**



#### uTrP: POVOAS

augite or feldspar phyric, locally pillowed andesitic basalt flows, breccia, tuff, sandstone and argillite; local dacitic breccia and tuff with minor limestone; greenschist, chlorite schist, chlorite-augite-feldspar gneiss, amphibolite (Povoas)



### 1.2 Regional Geophysics

This regional is targeting gold and copper-gold deposit potential. 2012 reconnaissance sampling in this area identified anomalous gold and copper values associated with the magnetic feature shown in figure 3 below.

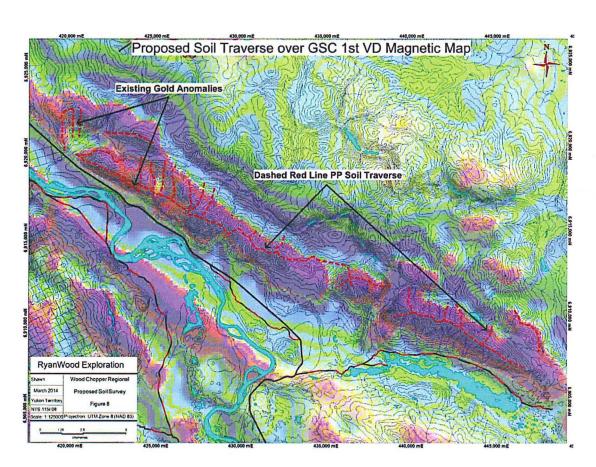


Figure 3: Regional magnetics (first vertical derivative) with proposed traverses



# 2 Regional Soil Sampling

### 2.1 Personnel

The soil sampling was conducted by the following GroundTruth Exploration personnel:

1. Dan Murray	Foreman
2. David Cox	Foreman
3. Janna Stecyk	Soil Sampler
4. Frances Langtry	Soil Sampler
5. Heidi Bradley	Soil Sampler
<ol><li>Brett Godwin</li></ol>	Soil Sampler
7. Matt Emmett	Soil Sampler
8. Hector Barrientos	Soil Sampler
9. Ryan Humphries	Soil Sampler

### 2.2 Work Performed

A total of 733 soil samples were collected along 24 traverses at 50m. Samplers collected an average of 31 soils per traverse. Sample quality was good overall. Some traverses that were run on North facing ridges had permafrost and frozen ash layer to contend with, particularly where traverses ended close to valley bottoms. Few samples were missed due to permafrost. C Horizon soil was the medium collected on this survey. Soil samplers were instructed to be aware of rounded pebbles in soil which would denote glacial till or alluvially transported material. Georeferenced photos and comprehensive descriptions were collected at all sites to monitor quality of samples collected.

# 2.3 Soil Sample Procedure:

The survey is completed in the field according to the following procedure:

All sampling traverses are pre-planned, with pre -specified sampling intervals, typically 50m. Field technicians navigate to sample site using handheld GPS units. The soil sampler arrives at each sample site, identifies the most appropriate location to collect the sample and lays out a sheet of plastic (12"x20" ore bag). The soil sample is taken using an Eijklcamp brand hand auger at a depth of between 20cm and 110cm. Samplers strive to consistently collect C-Horizon sample material. Where necessary (rocky or frozen ground) a prospector's pick ('mattock') is used to obtain the sample.



The soil is laid out on the sheet of plastic in the order it was recovered from the sample hole. Two Standardized photos are taken at each sample site- 1) Sample Location photo: across slope, 5m from sample hole with auger inserted and 2) Sample Profile photo: Close up of sample laid out on ore bag with barcode tag and munsell color chart in photo.

The sampler places the necessary amount of soil (400-500 grams) from the bottom of the hole into a kraft sample bag. The bag labeled with the 3-letter project and tagged with a plastic barcode ID tag containing a unique 7 digit sample identification number is inserted. A plastic barcode ID tag with the sample identification number is attached to a rock or branch in a visible area at the sample site along with a length of pink flagging tape.

A field duplicate sample is taken once for every 25 samples. Both samples are given unique Sample identification number. The data for both samples is recorded and a note is made indicating the duplicate and its corresponding sample identification number. At client's discression standard reference material is inserted into the sample stream at an interval of 1:50.

The GPS location of the sample site is recorded with a Garmin GPSMap 60cx or 76cx GPS device in UTM NAD 83 format, and the waypoint is labeled with the project name and the sample identification number. A weather-proof handheld device equipped with a barcode scanner is used in the field to record the descriptive attributes of the sample collected. This includes: sample identification number (scanned into device at sample site), soil colour, soil horizon, slope, sample depth, ground and tree vegetation and sample quality and any other relevant information. As well, the GPS coordinates are entered into the handheld device as a secondary backup in case of GPS failure.

# 2.4 Interpretation

The West Regional evaluated 30km of the Woodcutter Range ridge with 733 soils collected at 50m station spacing along all major ridges (figure 4). 2012 reconnaissance sampling identified anomalous Au, Cu, Bi in soil at the NW limit of the regional. Higher density soils were focused here which expanded the Au anomaly. Extending the coverage in this regional down the ridge to the SE did not generate other high threshold soil anomalies in target or pathfinder elements.



### 2.5 Results

Figure 4: Location of West Regional targets and sample location

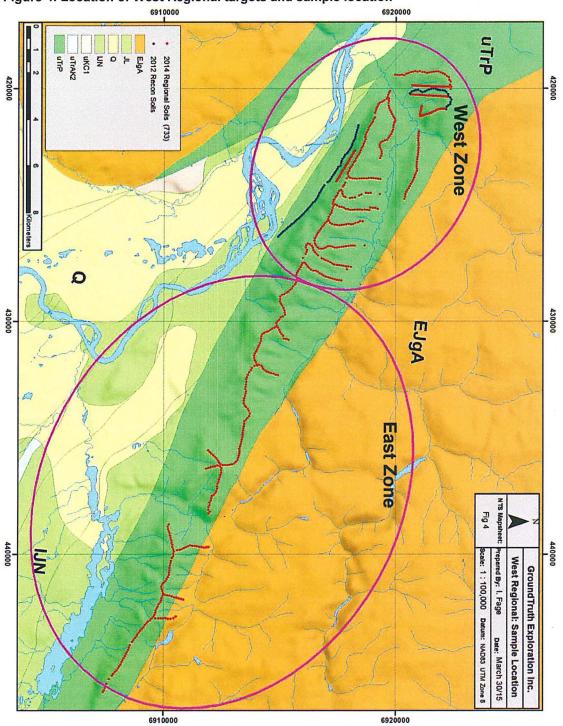




Figure 5: West Regional (Woodcutter Range) – Gold in Soil, Western half of survey

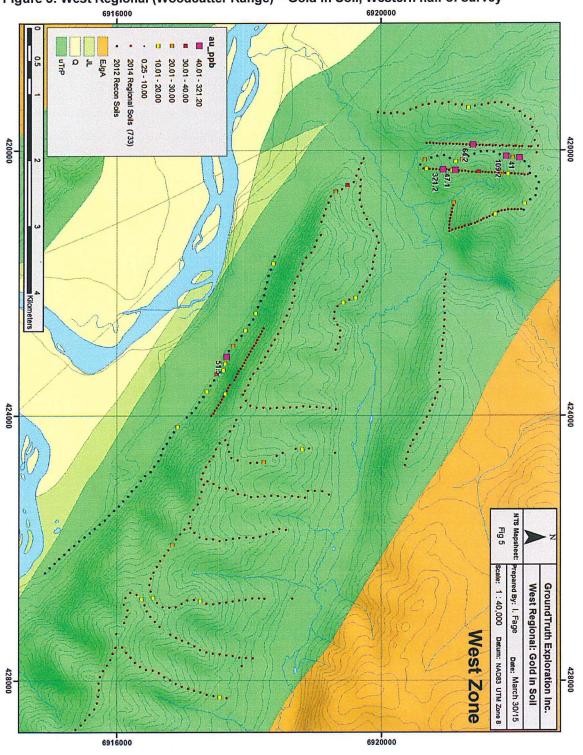




Figure 6: West Regional (Woodcutter Range) – Bismuth in Soil, Western half of survey

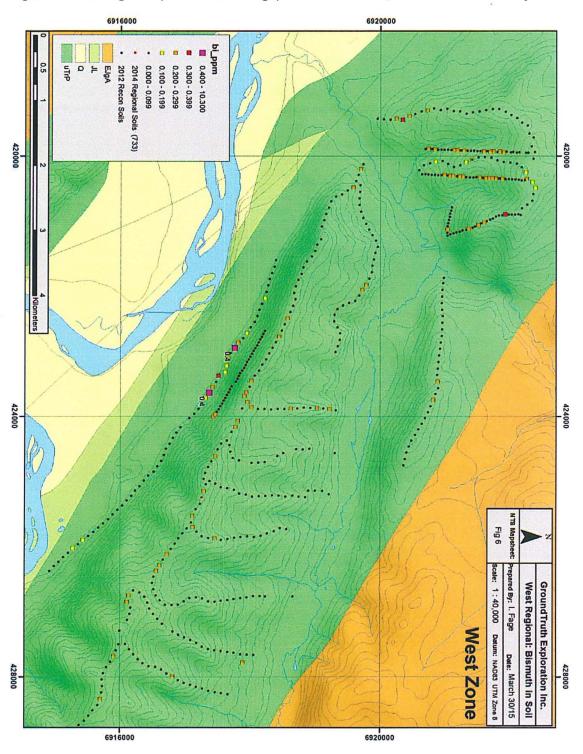




Figure 7: West Regional (Woodcutter Range) - Copper in Soil, Western half of survey

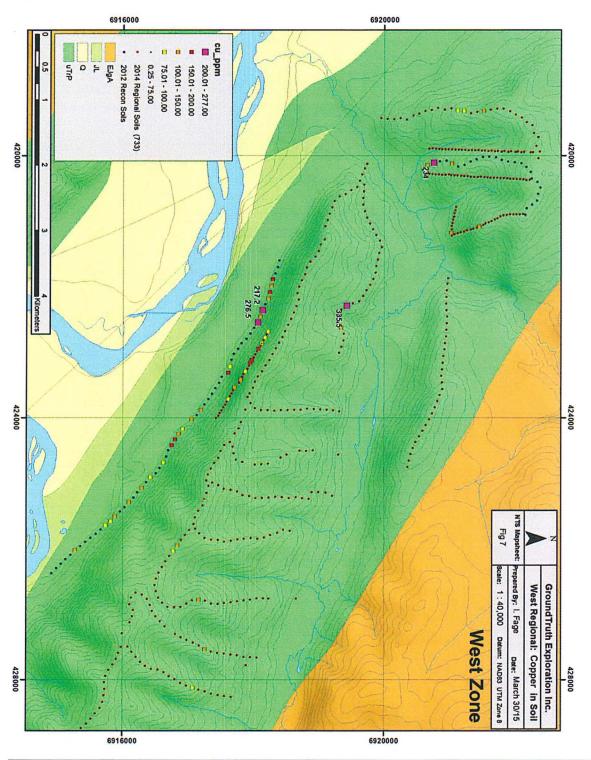




Figure 8: West Regional (Woodcutter Range) - Gold in Soil, Eastern half of survey

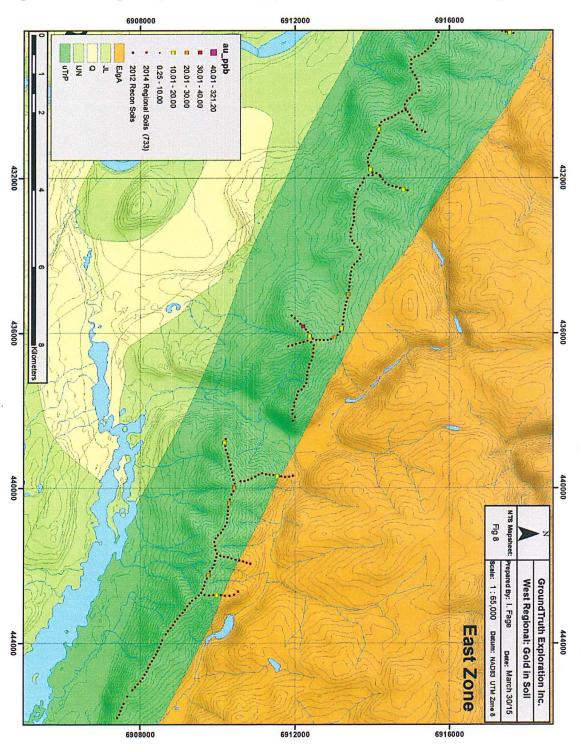




Figure 9: West Regional (Woodcutter Range) – Bismuth in Soil, Eastern half of survey

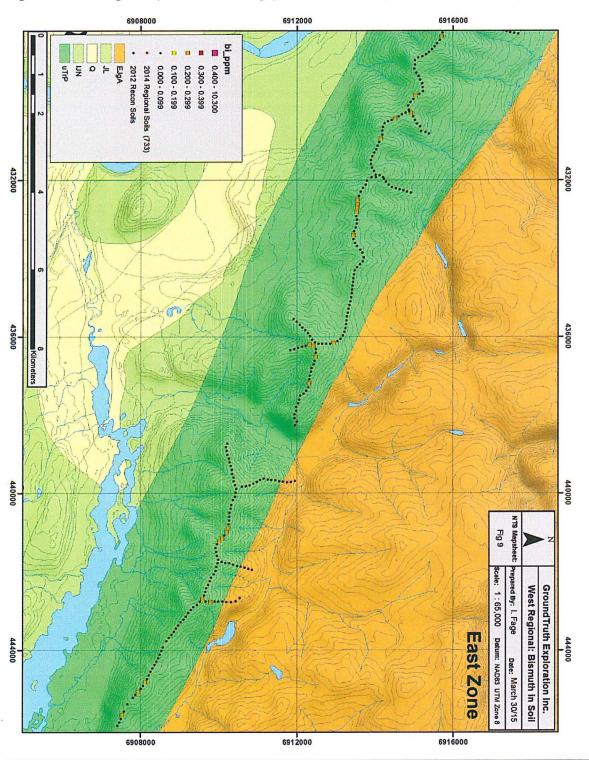
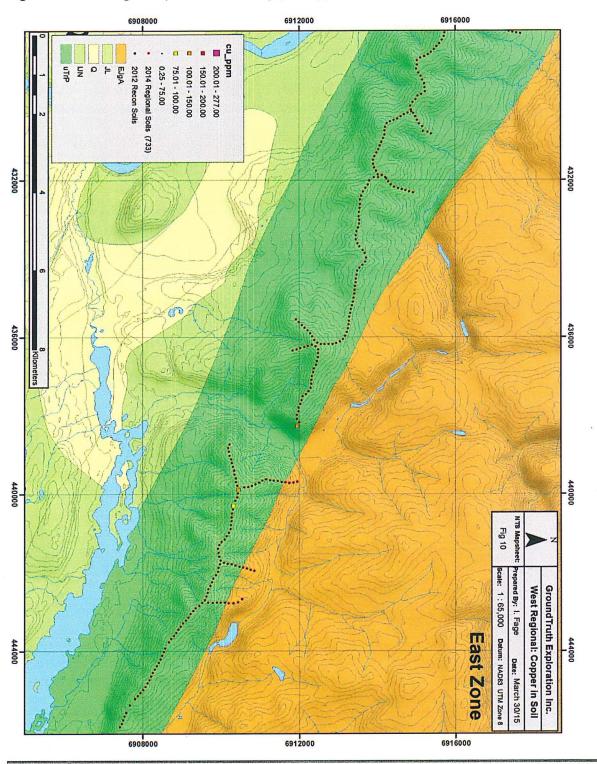




Figure 10: West Regional (Woodcutter Range) - Copper in Soil, Eastern half of survey





### 3 Recommendations

Additional followup of the multi station Au - Bi soil anomaly identified is recommended. Grid extension, geological mapping and/or prospecting should be done to evaluate the significance of the soil anomalies to plan additional survey work.

# 4 Expenditures:

Soil Sampling: 733 soil samples

GroundTruth Exploration Inc.

Invoice: GT-WOO2014-01 (Appendix A) \$19,037.00

Helicopter: July 15-18 setouts/pickups: 4.9h

Trans North Helicopters, Bell 206

4.9 hours @ \$1,350/h wet \$6,615.00

Soil Assay: 733 soils ICPMS

Acme Labs: Certs- WHI14000124, 125, 126

733 soils @ \$20/sample \$14,660.00

Report:

GroundTruth Exploration: \$ 750.00

<u>Grand total</u> <u>\$41,332.00</u>

# 5 Qualification

I, Isaac Fage have been president of GroundTruth Exploration in Dawson City since May 2010. I have overseen the collection of 300,000 + soil samples across numerous projects in Yukon Territory. I have worked continuously in Mineral Exploration since 2004. I hold an advanced diploma in Remote Sensing from the Centre of Geographic Sciences in Lawrencetown, Nova Scotia.

I have overseen the survey work described in this report on the West Regional.

Dated this 31st day of March, 2015 in Dawson, YT.

Respectfully submitted

Ar



# Appendix A: Soil Sampling Invoice

#### WEST - Woodcutter Range Regional Soil Program 2014: Total Expenses Invoice #WOO2014-01 Prepared by: Gwen Franks 23 July 2014 Summary: Regional sampling on West- Woodchopper Project from 14 to 18 July, 2014. 733 field samples were collected with 24 field man days. GroundTruth Soil Sampling Invoice Breakdown Day Rate Unit Total Wages: 1 Foreman soil sampler \* \$400/day 400.00 6.0 \$ 2,400.00 350.00 18.0 \$ 6,300.00 8 Soil sampling technicians \* \$350/day 9.0 \$ 2,250.00 250.00 MOB & DEMOB 9 man/crew \* \$250/day/crew \$ 250.00 2.0 \$ Packing and Prep \$250/day 500.00 Food/Camp: Food: \$50/man/day 50.00 33.0 \$ 1,650.00 35.00 24.0 \$ Camp expenses: \$35/man day \$ 840.00 **Data Management and Processing Services** 2.0 \$ \$ 75.00 150.00 GIS/Job Layout/Mapping/Results Plotting @ \$75/hr \$ 0.50 733.0 \$ Database Management/Chain of Custody/Barcoded Samples @ \$0.50/sample 366.50 \$ 733.0 \$ 733.00 Georeferenced Photo Database for BETTY soil program, 1 sample+ 1 site photo (\$1/sample) 1.00 Survey Equipment: Field Laptop/Software for nightly download @ \$50/day 50.00 3.0 \$ 150.00 \$ 3.0 \$ Iridium Sat Phone @ \$35/day 35.00 105.00 \$ 25.00 0.0 \$ Satellite Internet @ \$25/day Chainsaw for helipads/camp \* \$35/day \$ 0.0 \$ 35.00 Radios: 5 \* \$5/day \$ 5.00 24.0 \$ 120.00 Handheld data logger/GPS/Camera: 5 \* \$15/day 15.00 24.0 360.00 6.0 \$ \$150.00 900.00 Truck Rental: Fuel Extra 3.0 \$ Flat Deck Trailer \$100.00 300.00 \$ 0.75 1444.0 \$ 1,083.00 **Consumable Supplies:** Consumable Supplies: Soil and Ore bags, Flagging, Barcode tags, Sampling tools, Soil auger, 1.50 733.0 1,099.50 Outfitted Field packs, Mattock @ \$1.50/sample \* 150 samples Soil Sampling Expenses: \$ 19,307.00

Helicopter Expenses:

Frans North Helicopters: Bell 206, 3 loads per day, based in Carmacks @ \$1,350/hr wet

	Helicopter Expe	nses: \$ 6.615.00
July 17/14: Ticket # 59012	2.3h	\$ 3,105.00
July 16/14: Ticket # 59009	1.9h	\$ 2,565.00
July 15/14: Ticket # 59005	0.7h	\$ 945.00
Trans North Helicopters, Bell 206, 3 loads per day, based in Carmacks @ \$1,330/ill Well		

Assay Expenses:

Acme Labs: Soil Analysis ICPMS(AQ201 package) @ \$20/sample

WHI14000124 - 320 samples	320	\$ 6,400.00	
WHI14000125 - 320 samples	320	\$ 6,400.00	
WHI14000126 - 93 samples	93	\$ 1,860.00	
	Assay Expenses:	Assay Expenses: \$ 14,660.00	

Final Report:

GroundTruth Exploration: Report Preparaton for West - Woodcutter Range Regional	Report Expenses	\$ 750.00

Total Expenses \$41,332.00



**Appendix B: Sample Locations** 



**Appendix C: Assay Certificates**