YEIP 2002-050 2002

## **REPORT OF 2002 FIELD ACTIVITIES FUNDED UNDER YMIP GRANT #02-050**

Bigtop Property Sidney Creek Area

NTS 105 C 14 Lat. 60 52' N, Long. 133 19'W Whitehorse Mining District Yukon Territory, Canada

PREPARED FOR: 15053 YUKON INC. C/O 214 ALSEK ROAD WHITEHORSE, YUKON Y1A 5A8

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BY: STEVE TRAYNOR, B.Sc.

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## **INTRODUCTION**

Further development work was completed on the Bigtop Property during the 2002 field season and consisted of detailed prospecting, hand trenching and limited magnetometer surveying. A total of 14 man days were spent and focused on assessing the potential for *cenicero* type alteration in the balck shales to host emeralds, ground truthing of the main magnetic feature on the property and continue to reassess and possibly reinterpret the local geology.

## PROPERTY LOCATION AND ACCESS

The Bigtop property is located 80 kilometers east of Whitehorse and 12 kilometers west of the south Canol Road on Sidney Creek at the confluence with Iron Creek on NTS Map Sheet 105 C 14. The geographic coordinates of the property are 60° 52' N and 133° 19' W (see Figures 1 and 2).

Access to the property is by bush road from Km. 50 on the south Canol Road. An all weather camp is located at 875 meters elevation on the bank of Iron Creek, 16 kilometers along the bush road from the south Canol Road. Several 4wheel drive roads and ATV trails provide good access to most areas of the claim block. Logistically, Whitehorse provides supplies, equipment and government services for the district.

## PROPERTY DESCRIPTION

The Bigtop Property consists of 174 contiguous mineral claims, as shown in Figure 3 and listed in Table 1. The Bigtop 1-30 and Bozo 1-24 claims were staked in June 1996 and 120 additional claims were staked during the 1997 field season. The author has inspected many of the claim posts and lines, which are all in good order, and has supervised the tagging of all the claims.

#### TABLE 1 Claim Data

Claim Name	Grant Number	Expiry Date
BOZO 1 – 8	YB67080 - YB67087	March 31, 2005
BOZO 9 - 24	YB67298 - YB67313	March 31, 2005
BOZO 25 - 38	YB97749 - YB97762	March 31, 2005
BOZO 39 - 52	YB97845 - YB97858	March 31, 2005
BOZO 53 - 70	YC08057 - YC08074	March 31, 2005
BIGTOP 1 - 30	YB67268 - YB67297	March 31, 2005
BIGTOP 31 - 58	YB97721 - YB97748	March 31, 2005
BIGTOP 59 - 64	YC08075 - YC08080	March 31, 2005
BIGTOP 65 - 76	YC08270 - YC08281	March 31, 2003
KRUSTY 1 - 16	YC08282 – YC08297	March 31, 2005
RUSTY 1 - 12	YC08258 – YC08269	March 31, 2003







#### **REGIONAL AND PROPERTY GEOLOGY**

Physiographically the property lies in an area of the northern Cordillera known as the Yukon Plateau. Subdued, often rounded mountains becoming broadly rolling, open valleys predominate much of the area.

Extensively glaciated during the McConnel glaciation, the area was probably covered by a major ice stream flowing northwest, that resulted from a bifurcation of the Cassiar Lobe of the Cordilleran Ice Sheet. Much of the area in covered by fluvioglacial, lacustrine and recent alluvial deposits. Outcrop is present at less than 1% and is restricted to the main ridges and the lower reaches of some of the creek valleys, particularily Iron Creek. Careful prospecting has shown that outcrop is probably more widespread than previously thought.

A wide west-northwest trending band consisting of intermediate to mafic volcanic rocks overlying various felsic volcanic lithologies associated with thinly laminated terrigenous clastic rocks and minor recrystalized limestone underlies the Sidney Creek valley. The volcano-sedimentary sequence, upper Proterozoic to Mississippian in age, is part of the broad Yukon-Tanana terrane which lies northeast of the complex Teslin Structural zone (see Figure 4). The sedimentary portion of the package is a fine grained, thinly laminated to massive textured, often carbonaceous pyritic argillite that weathers to dark rusty brown gossan. It is interlayered with felsic volcanic, fragmental and tuffaceous units that petrographic analysis has shown to be dacitic in composition with deposition in a shallow marine environment. Weathering to form bright orange gossans, they often produce distinctive limonitic colorations in the overlying soils. Petrographic analsysis also suggests that some of the felsic rocks are porphyritic in nature, although strong, widespread deformation fabrics have obscured these textures in the field.

Occurrences of recrystallized limestone, present as pure white marble has been noted previously in the Iron Creek canyon and prospecting south of the baseline this year has indicated more wide spread occurrences in this area. This unit overlies the volcano-sedimentary units present in the area and likely represents a quiescent period in the geological evolution of the area. Until recently the only occurrences found were of limited dimensions and extent. Drilling in 1999 revealed a thick (50 feet or more) succession of marble south of the baseline in DDH-BT3. Logging of the hole (see Appendix A) revealed



that the marble was directly overlying tuffaceous felsic rock (with at times a minor terrigineous component) and seems to suggest that this area may lie outside of an inferred basin or rift in which carbonaceous argillites found elsewhere on the property have accumulated.

North and south of the Sidney Creek area large bodies of Cretaceous granite intrude the layered rocks, subvolcanic rocks in the form of diorite and quartz-feldspar porphyry sills and dykes are present locally and may be important in the generation of the VMS-related hydrothermal system that has been identified by field work in the area. A number of vertically discordant zones of silicified, variably sericitized and lesser chloritized rocks with quartz veining and abundant disseminated sulfide mineralization have been discovered on the property. The best developed of these (likely representing hydrothermal alteration pipes or concentration of hydrothermal fluids along synvolcanic faults) show strong depletions of Ca, Na and K, with the Na depletion often being laterally extensive.

The most recent regional mapping of the area, by Gordey and Stevens (1974) of the Canada-Yukon Geoscience program was carried out during the period from 1990-1993 and is reported in two GSC Open Files, numbered 2768 and 2886.

In the late Mesozoic, extensive thrust faulting along the Teslin zone caused regional ductile deformation forming tectonites. A later compressional episode caused deformation and folding and likely contributed to the steeply dipping foliation measured in the argillites and tuffaceous volcanoclastic rocks mapped along the main ridge of the property, which show dips of 55 to 65 degrees to the SW. Prospecting outside the gridded area in 1998 showed that locally the dips moderate quickly and are in the 25 to 35 degree to the SW range. On the front side of the Bigtop ridge more moderate dips can be measured just off the baseline in the 1150 W trench south of where it crosses the access road and across Iron Creek to the north the stratigraphy becomes quite flat lying often showing gentle NE dips of few degrees. Prospecting in 1999 revealed the presence of flat lying massive felsic rock in the bed of Iron Creek which was later confirmed during stratigraphic drilling. This flat lying nature of the lowest levels of the stratigraphy was also noted in the Top Creek area in the NW corner of the property block during prospecting and hand trenching in this area and as well drilling in 1999 showed that the tuffaceous rocks intersected in this area were bedded at 15-20 degrees from horizontal. The implications of this are that the lowest levels of the stratigraphy reveal a mappable paleotopographic surface.

#### PREVIOUS WORK AND EXPLORATION ACTIVITY

Exploration of the Teslin River-Quiet Lake district centers around placer prospecting and mining starting in the early 1900's and the discovery of porphyry molybdenum mineralization at Red Mountain in the mid 1960's. Placer activity started on Iron Creek and continued periodically with the busiest period from 1932-1936 when a flume was constructed along the west side of the Iron Creek valley. Overburden was removed by monitoring the thick glacial deposits overlying the pay gravels. About 20 men were employed at the operation in 1934 and 75,000 cubic yards of gravel was processed. Mining ceased in 1936 due to uneconomical ground conditions. Placer prospecting and mining was again active in the late 1980's with no records of gold production. Placer claims and leases currently cover the lower 10km of Iron Creek.

In the mid 1970's the area just south of Red Mountain was explored for Pb-Zn mineralization with the resultant discovery of disseminated sulfide mineralization in one of three holes drilled into a package of metamorphosed schists and shales. Ongoing work by the same company in the surrounding area eventually led to the discovery of the Red Mountain Cu-Mo porphyry deposit, which extensive drilling has shown to contain subeconomic grades of mineralization. Since this time surprisingly little attention has been focused on the area despite its accessibility.

The confluence of Sidney and Iron Creeks was first staked as mineral claims in 1967 by Mt. Grant Mines Ltd. who pushed several bulldozer trenches on a reported silver occurrence (Minfile 105C 021). It was restaked in 1981 by McCroy Holdings, in 1988 by T. Morgan and in 1989 by R. Hamel. Only sketchy reports of this work are available, although one assay of 130.3 g/t Ag and less than 0.3 g/t Au is recorded.

In the summer of 1996 an exploration crew under the direction of the author conducted a reconnaissance program in the Sidney Creek area directed at finding potential massive sulfide bearing rocks of the Yukon-Tanana terrane. A pyritic argillite unit striking 310 was discovered along Iron Creek and was traced west along a ridge for over a kilometer. Felsic volcanic rocks were found to be interbedded in the metasediments. Initial rock samples returned favourable values in copper, zinc and silver. Claim staking followed by grid development and a soil geochemical survey in August 1996 identified three Pb-Zn-Ag-(Cu) anomalies along the lower part of the southeast-northwest trending ridge.

In the spring of 1997 an investors syndicate was formed to fund exploration on the Bigtop and claim title was transferred to 15053 Yukon Inc. Aerodat Ltd. was contracted to fly an airborne geophysical

survey of 550 line kilometers in May 1997. Strong electomagnetic reponses were outlined associated with the carbonaceous argillite units. The positive airborne geophysical results precipitated further ground acquisition, grid expansion and additional soil geochemistry.

To facilitate geological mapping a series of backhoe trenches were excavated over a 1,500 meter distance along the ridge featuring the anomalous trend. The units exposed were mainly shales and silicified argillites with interbedded felsic rocks, meta-dacite and tuffaceous equivalents. Sulfide mineralization discovered to date is generally finely disseminated and consists of pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, covelite and magnetite. In the better mineralized horizons pyrite concentrations reach 20% and the host rocks are variably silicified, sericitized and occasionally chloritized.

Rock and soil geochemical data from 1996-1997 outined a number of areas of interest which are coincidental with electromagnetic conductors and somewhat coincidental with magnetic highs. Zinc is the most responsive element in soils, reaching a peak of 3,361 ppm, the maximum for lead was 669 ppm and copper and silver reached peak values of 351 ppm and 8.9 ppm respectively. Similarily, rock sampling in 1996, 1997 and 1998 has returned peak values of 7656ppm Zn, 826ppm Pb, 649ppm Cu, 7100ppm Ba, 783ppb Hg, 5g/t Ag and traces of Au.

To date 5.0 km of baseline and 25 km of flagged crossline has been established on the property, 475 soil samples and 312 rock samples have been collected (365 and 226 of which, respectively been submitted for analysis), geological mapping and over 2000 meters of trenching on the gridded area has been completed since the first claims were staked in 1996.

#### **DESCRIPTION AND SUMMARY OF WORK**

Exploration efforts this past season were focused on an area south of the baseline on the property from 500 to 2000W / BL to 1000S and the northwest end of the claim group. Some prospecting was also carried out along the main ridge and in the upper Iron Creek canyon.

Stongly magnetic argillite was previously found in the Iron Creek canyon, the unit is highly enriched in base metal mineralization and is coincident with a magnetic field high that was incorrectly thought to be related to an intrusive sill. When the 1999 drilling revealed the mostly flat lying nature of the areas stratigraphy, the potential importance of the stratigraphic positioning of the magnetic argillite horizon was recognized. Magnetometer surveying was carried out over the airborne magnetic high previously delineated south of the baseline to determine by prospecting the true nature of this anomaly.

Prospecting and hand trenching were carried out elsewhere on the property (see Figure 5 for details) to followup on a previously noted occurrence of greenish beryl associated with an alteration zone in the black shales in the Top Creek area of the property.

## ANALYSIS AND RESULTS

Two lines of magnetometer surveying were completed on grid lines 500W and 1000W to obtain an accurate ground position for the magnetic feature identified during the 1997 airborne surveying. A 300 to 600 gamma (above background) magnetic high was located in a ground position consistent with previous data plotting. Prospecting along the ground truthed trend of the feature identified slightly to strongly magnetic argillites and metavolcanic schists though to be the cause of the anomaly. The units showed pervasive chloritization in many areas and were variably silicified and sericitized.

This area south of the baseline had previously seen only limited prospecting and/or mapping as it was thought to be underlain by later mafic volcanic rock. Armed with the knowledge that stratigraphy in the area is more flat lying than previously thought, it was quickly realized that lithologies in the this area are in fact the same as those mapped previously on the main ridge. This indicates that prospective units on the property are far more widespread than previous interpretations indicated. It also is conceivable that the strongly magnetic argillites in the Iron Creek canyon are in fact the same unit located south of the base line and possibly represent a magnetic iron formation with important ramifications for future exploration of the property.

Prospecting and hand trenching in the Top Creek area, along the main ridge of the property and in the upper canyon of Iron Creek revealed the alteration (leached) zones to be of limited extent. The zones occasionally contain quartz-carbonate stringers sometimes carrying green mica (fuchsite?) and the black sediments in these area often contain disseminated pyrite. Hand trenching quickly revealed that the zones are of very limited extent, often occupying areas of less than 10 cubic meters. The most extensive trenching was completed in the area of the minor beryl occurrence identified previously and revealed a diorite dyke associated with the area of most abundant alteration. No additional beryl crystals were located at this or any other location on the property.

## **CONCLUSIONS AND RECOMMENDATIONS**

While some of the features presented in the descriptive model for emerald veins in black shales are definitely present on the property, the zones investigated are weakly developed and of limited aerial extent. This understanding coupled with the lack of success in locating any more beryl precludes any further exploration for this type of mineralization.

On the other hand, this season's work south of the baseline shows that lithologies prospective for VMS mineralization are far more widespread on the property than previously thought. The possible existence of a magnetic iron formation within the package, the probable axis of which apparently lies in an underexplored area south of the baseline highlights the need for further exploration on the property.

Extension of the grid south of the baseline for up to a 750 m, between 500W and 3000W, is recommended. Mapping, prospecting and soil sampling should be carried out in conjunction with the grid expansion and upon completion would approximately double the area currently covered by ground investigations on the property. While this increase in coverage is definitely warranted, and was in fact proposed for the past season, the decision not to proceed further at the present time was based on continuing weakness in base metal prices resulting in a reduced ability to raise the required funding.

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# APPENDIX A

# SYNOPTIC LOG / FIELD NOTES

# **SYNOPTIC LOG – YMIP Grant #02-050**

# **Bigtop Target Evaluation**

June 7, 2002 -Mobilize from Whitehorse to Iron Creek camp. -WSC and SDT.

June 8-9, 2002-Setup camp (06/08). -Clear access road from Sidney Creek valley to baseline (06/09). -WSC and SDT.

- June 10-14, 02-Magnetometer surveying and prospecting, 500 to 2000W/BL to 1500S(06/10 and 06/11). -Prospecting of central area of main ridge (06/12). -Prospecting of Iron Creek valley above canyon (06/13).
  - -Return to Whitehorse (06/14).
  - -SDT and WSC.
- June 15, 2002 -Pickup ATV and return to Iron Creek camp (06/15). -WSC.
- June 16, 2002 -Prospecting of Top Creek area (06/16). -WSC.
- June 17, 2002 -Go to town to replace ATV (breakdown) and return to camp (06/17). -WSC.

June 18-20, 02-Propecting of Top Creek area (06/18, 06/19 and 06/20). -WSC.

June 21, 2002 -Demob from Iron Creek to Whitehorse (09/21). -WSC.



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