GEOLOGICAL
ASSESSMENT REPORT

on the

RAINBOW CLAIM GROUP
OKANAGAN FALLS AREA
OSOYOOS MINING DIVISION

by

MURRAY S. MORRISON, B.Sc.

CLAIMS: Rainbow 1-4 & 7-24 (22 units).

LOCATION: The Rainbow Claim Group is situated near the headwaters of Vaseux Creek, 24 km southeast of Okanagan Falls, B.C.
Lat. 49° 16'; Long. 119° 17';
N.T.S. Map 82-E-6W

OWNER: M. S. Morrison

OPERATOR: M. S. Morrison

DATE STARTED: April 30, 2002

DATE COMPLETED: May 16, 2002
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SUMMARY

The Rainbow Claim Group is comprised of 22, 2-post mineral claims which are located near the headwaters of Vaseux Creek, 24 km southeast of Okanagan Falls, B.C. The property, owned by the writer, M. Morrison, of Kelowna, B.C., covers the eastern portion of the Venner Meadows Tertiary Outlier. Volcanic rocks of the outlier are known to host an epithermal precious metal occurrence at the AU prospect located just 1 km west of the Rainbow property.

Similar Tertiary age rocks host epithermal precious metal values at the well-known Dusty Mac and Vault properties located near Okanagan Falls. A total of 93,653 tonnes of ore with an average grade of 6.29 g/tonne gold and 146.49 g/tonne silver were mined from the Dusty Mac open pit mine during 1975-76. One persistent composite epithermal vein on the Vault property has a reserve of 152,000 tonnes of 14 g/tonne gold plus minor silver values. A large epithermal deposit on the same property may contain an additional 1.3 million tonnes of 2 g/tonne gold.

Drill intercepts as high as 300 g/tonne gold over 15 cm have been reported from the AU prospect.

The Tertiary rocks underlying the Rainbow Claim Group are predominantly andesitic and dacitic flow rocks of Eocene Age and conglomerates comprised of clasts of the same volcanic units. The Eocene rocks dip steeply to the northeast. The Tertiary Outlier is separated from “basement rocks” of the Pre-Permian Monashee gneiss and Cretaceous (?) Valhalla intrusions by a strong fault (called the Fort Knox Basement Fault in this report). It is thought that the fault has allowed for the passage of epithermal solutions from some source lying to the northeast and that these solutions have deposited precious metals with silica in some of the most permeable Eocene rocks. The good gold values associated with a quartz/calcite/adularia vein at the AU prospect are an example of such disposition.
This year’s detailed geological mapping program was conducted on the Rainbow 21 & 22 mineral claims to the east of last year’s program. Some of the important volcanic and sedimentary units of the Early Eocene Marron Formation were found to extend into this year’s map area.

The main economic features on the property are considered to be the Fort Knox Basement Fault and two very permeable units (4b and 4d) of the Early Eocene Marron Formation which dip towards the fault. The Fort Knox Basement Fault has been traced for 1000 metres in a direction of 120 degrees across the property. Wide belts of a permeable conglomerate (Unit 4d) and a brittle dacite (Unit 4b) cross the property subparallel to the Fault 500 to 700 metres to the northeast. Both the conglomerate and dacite exhibit clay alteration, pyritization (now limonite) and silicification that are believed to be related to epithermal solutions that have ascended the Basement Fault.

It is speculated that sizeable economic concentrations of epithermal precious metal deposits could occur within the permeable conglomerate and brittle dacite. It is thought that the mineralization could be associated with silica flooding near the Basement Fault and for several tens of metres above the Fault. A series of 150 to 200 metre Reverse Circulation Percussion Drill holes is recommended to test this hypothesis.

Prior to the drilling program, it is recommended that a lithogeochemical sampling program be conducted to test for precious metals and indicator elements and that the data collected be used to select the optimum drill sites.
INTRODUCTION

This report, written for government assessment work credits, discusses the results of a geological mapping survey carried out over the Rainbow 21 & 22 mineral claims by the writer during the early spring of 2002.

The Rainbow Claim Group is comprised of 22 contiguous 2-post mineral claims which are located near the headwaters of Vaseux Creek, 24 km southeast of Okanagan Falls, B.C. The mineral claims were staked by the writer, M. Morrison, of Kelowna, B.C. between June, 1994 and October, 1999.

The mineral claims are positioned to cover the eastern end of the Venner Meadows Tertiary Outlier which is comprised of Early Eocene volcanics and sediments. Similar rock is known to host epithermal precious metal mineralization just 1.0 km west of the Rainbow property at the AU Prospect on the boundary of the old Gold and Venner Mineral Claims. The well-known Dusty Mac and Vault properties, located near Okanagan Falls, B.C. also host epithermal precious metals in Tertiary Age rocks.

This year's geological mapping program on the Rainbow 21 & 22 mineral claims was conducted at the same scale as earlier mapping programs on the property (i.e. 1: 2500). Since the program was begun in 1997, the Rainbow 1, 2, 7-10, 12, 14 & 17-22 mineral claims have been mapped. The main purpose of the mapping programs was to investigate the relationship between the strong faulting and the widespread rock alteration that are evident on the property.

The results of this year's mapping program are illustrated on Map R-02-1 which accompanies this report.
LOCATION AND ACCESS

The Rainbow property is located near the headwaters of Vaseux Creek, 24 km southeast of Okanagan Falls, B.C. (Lat. 49° 16'; Long. 119° 17'; N.T.S. Map 82-E-6W).

Access to the property from Okanagan Falls is via the Weyerhauser Sawmill Road to the Allendale Lake Road which by-passes the sawmill and then continues beyond the millsite as the Okanagan Falls Forest Service Road. The road climbs the mountain on the south side of Shuttleworth Creek as the main haulage road. A secondary logging road branches to the right at kilometre 12.3 and continues southeast another 14.7 km to the property. Several old logging roads provide access to the property both north and south of the main road (see Figure 2).

The main logging roads are gravelled and maintained year-round.
Rainbow Claim Group
Okanagan Falls Area
Osoyoos Mining Division, B.C.

Mineral Claims & Access

Drawn by: M.M.  
N.T.S. 82-E-6W
July 2002  
Figure 2
PHYSICAL FEATURES AND CLIMATE

The Rainbow property is situated on a rolling uplifted region known geographically as the Okanagan Highland. Elevations on the Highland generally range from 1400 to 1800 metres with some ridges reaching 2100 metres. Mount Baldy, located 11 km due south of the Rainbow property, is the highest point of land in the region at 2300 metres.

The Okanagan Highland is deeply incised by Shuttleworth and Vaseux Creeks which drain into the Okanagan River at the 330 metre elevation just 13 km west of the property.

The Rainbow property is centred over a shallow southeasterly trending valley which is occupied by a small tributary of Vaseux Creek. Elevations in the property range from 1450 to 1600 metres.

A light cover of Pleistocene boulder till blankets much of the valley bottom on the property. Deep gravel terraces occur along the northern side of the valley. Natural rock outcroppings are few, but recent road construction and logging activities have exposed bedrock over a widespread area.

Much of the Lodgepole pine forest has been clear-cut logged and replanted in recent years. The pine trees of the new forest plots range from 1 to 5 metres in height.
The region is also used as a summer rangeland. The tributaries of Vaseux Creek provide ample drinking water for the cattle.

The Okanagan Highland receives considerably more precipitation than the arid Okanagan Valley. Annual precipitation on the Rainbow property probably equals 60 cm - half of it in the form of snow. The snow begins to accumulate around the first of November and generally lingers on shaded slopes until mid-May.

Summer temperatures can reach as high as 30°C in the upland country while winter minimums can drop to -30°C.
**CLAIM STATUS**

The Rainbow 1-4 & 7-24, 2-post mineral claims were staked by the writer, M. Morrison, of Kelowna, B.C. and recorded in the Osoyoos Mining Division.

The mineral claims making up the Rainbow Claim Group are listed below:

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*(The Expiry Dates are based on the acceptance of this report for assessment work credits).*
HISTORY

The Tertiary Age rocks of the Okanagan Falls area were not seriously explored for precious metal deposits until the late 1960's when Noranda Mines Ltd. discovered silver and gold mineralization within a silicified outcrop of Tertiary rock 2 1/2 km northeast of Okanagan Falls on the Dusty Mac property.

Extensive drilling by Noranda proved that the deposit was too small considering the low metal prices of the day and the property was returned to the vendor, Dusty Mac Mines Ltd., in 1970. Shortly thereafter, precious metal prices increased dramatically and Dusty Mac extracted the deposit with a profitable open pit operation during 1975-76. In all, 93,653 tonnes of ore grading 6.29 g/tonne gold and 146.59 g/tonne silver were mined.

The principals associated with Dusty Mac Mines Ltd. also discovered gold mineralization within Tertiary Age rocks 22 km southeast of Okanagan Falls, or 1 1/2 km east of Venner Meadows, in the early 1970's. The AU property was staked and optioned to Teck Corporation Ltd. which conducted preliminary exploration programs on the ground.

In 1982, the writer discovered a large silicified zone within Tertiary rocks 4 km northwest of Okanagan Falls and staked the Vault property. The Vault property was explored extensively by Riocanex Inc. (1982-83), Dome Exploration Ltd. (1984), Seven Mile High Resources Inc. (1985) and Inco Ltd. (1986-1990). Expenditures exceeding 4 1/2 million dollars went into exploration on the property in an effort to establish a precious metal reserve (see section on Regional Mineralization).

Also, in the 1980's, Esso Minerals and Minova Inc. each conducted further drilling on the Dusty Mac property, and Lacana Corp., Riocanex Inc. and Inco Ltd. all carried out exploration programs (including diamond drilling) on the AU gold prospect 1 1/2 km east of Venner Meadows (see section on Regional Mineralization).
Lacana Corporation was eventually taken over by Homestake Canada Ltd. and through the years Homestake allowed their ground over the AU gold prospect (i.e. the Venner 1-5 mineral claims) to lapse. The Rainbow 1-6 mineral claims were staked by the writer in June, 1994 to cover some of the lapsed ground. The Rainbow 7-10 mineral claims were staked in May, 1998 and the Rainbow 11-24 mineral claims were staked during the period July - October, 1999 as more ground "came open".

In 1995, the writer conducted a ground magnetometer survey over the Rainbow 1 & 2 mineral claims (Morrison, 1995) and in 1997, 1999, 2000 & 2001, geological mapping was carried out by the writer over portions of the Rainbow 1-4 & 7-10, 12, 14 & 17-20 mineral claims (see References).

The Rainbow 5 & 6 mineral claims were allowed to lapse in June, 1998.

The most recently staked mineral claims of the Rainbow Claim Group (i.e. Rainbow 11-24) cover ground that was once covered by the Golden 2 mineral claim. The Golden 2 mineral claim was one of three large claims (44 units) which were aggressively explored under the direction of Discovery Consultants of Vernon, B.C. in the 1980's.

Work in the 1980's on the Golden Claim Group included geological, geochemical and geophysical surveys. Several diamond drill holes were also drilled. The success of the 1980 work programs is unknown to the writer and the proportion of work that was directed specifically towards the Golden 2 mineral claim is also unknown.
REGIONAL GEOLOGY

Figure 4 accompanying this report outlines the regional geology of the Okanagan Falls area. The geology has been reproduced from G.S.C. Map 15-1961 by H.W. Little with some modifications.

The oldest rock illustrated on Figure 4 is a Pre-Permian Monashee gneiss. It underlies much of the country for 16 kilometres east and southeast of Okanagan Falls. The gneiss has been intruded by the Cretaceous (?) Nelson Intrusives northeast of Okanagan Falls. The Nelson Intrusives also occur at three sites on the eastern side of the map area. Later Cretaceous (?) Valhalla Plutonics intrude both the Monashee Group and Nelson Intrusives and underlie much of the eastern half of the map area.

Tertiary Age sediments and volcanics rest unconformably over all earlier rock formations and occur within fault-bounded basins at Okanagan Falls and at Venner Meadows, 20 kilometres to the southeast, as illustrated on Figure 4. The Tertiary rocks have been folded and cut by late faulting.

It is believed that precious metal bearing epithermal solutions have ascended late fault structures within the Tertiary rocks, and that at some mineral prospects repeated faulting and the introduction of several phases of epithermal solutions have upgraded the precious metal content of the Tertiary rocks to ore grade values. Important precious metal deposits in the district are illustrated on Figure 4. They include the Vault, Dusty Mac and AU occurrences. The geology and mineralogy of these interesting occurrences will be discussed more fully in the section that follows.

The Rainbow Claim Group covers the eastern end of the Venner Meadows Tertiary outlier.
REGIONAL MINERALIZATION

Introduction

Two distinct types of precious metal bearing epithermal deposits are recognized in the Okanagan Falls area and these will be referred to as Type 1 and Type 2 deposits in the discussion that follows.

Type 1 Precious Metal Bearing Epithermal Deposits

Composite veins comprised of quartz-calcite + adularia filling shears in brittle rocks are characteristic of Type 1 precious metal bearing epithermal deposits in the district. The veins are generally narrow, but are persistent in strike and in depth. The veins often carry gold (electrum) and silver minerals throughout although values can be highly variable.

The Vault property North Vein and the AU prospect Main Vein are examples of Type 1 precious metal bearing epithermal deposits in the Okanagan Falls district.

Vault Property - North Vein

The North Vein on the Vault property is a precious metal bearing epithermal composite vein comprised of quartz, calcite and adularia. The vein cuts through the brittle Eocene Marron Formation trachytes underlying the Vault property. The vein is exceedingly persistent and extends at least 1100 metres along strike and to at least 350 metres in depth. The vein averages 55 cm in width. That portion of the vein drilled to date is reported to contain 152,000 tonnes of 14 g/tonne gold plus minor values in silver to a depth of 200 metres.
REGIONAL MINERALIZATION continued

**Type 1 Precious Metal Bearing Epithermal Deposits** continued

**AU Prospect** (Gold Claim Group)

The main vein at the AU prospect (now covered by the Gold Claim Group) is a composite vein comprised of quartz, calcite and adularia. Some drill intercepts have returned gold values as high as 30 g/tone over one metre intercepts. The vein is believed to fit the Type 1 deposit model, but it has been severely disrupted by late faulting, and no mineral reserve has been calculated.

**Type 2 Precious Metal Bearing Epithermal Deposits**

The main characteristics of Type 2 precious metal bearing epithermal deposits in the district are large size, irregular dimensions, and erratic distribution of precious metal values. The size and form of Type 2 deposits are controlled by the permeability of the Tertiary host rocks which the epithermal solutions invade. Most often the host rock is a very porous lahar or lapilli tuff that is overlain by an impervious rock unit such as a mudstone or volcanic flow. Epithermal solutions invading the porous rock units are confined by the impervious cover rock. The Type 2 deposits contain abundant silica which carries gold + silver values. Repeat brecciation and the introduction of multiphase veining upgrades the precious metal content of Type 2 deposits.

**Dusty Mac Deposit**

The open pit mine on the Dusty Mac property allows for a good view of a Type 2 deposit. A lahar unit made up of Eocene andesite has been flooded with silica, brecciated, and flooded again. The lahar unit lies directly below a mudstone unit of
REGIONAL MINERALIZATION continued

Type 2 Precious Metal Bearing Epithermal Deposits continued

Dusty Mac Deposit continued

the White Lake Formation. It is believed that the mudstone unit provided an impervious cap for ascending epithermal solutions. The gold and silver mineralization is disseminated throughout the silica breccia. The Dusty Mac open pit mine yielded 93,653 tonnes of ore grading 6.89 g/tonne gold and 146.59 g/tonne silver during operations conducted in 1975-1976.

Vault Property - Main Epithermal Precious Metal Deposit

The Main Epithermal Precious Metal Deposit on the Vault property has been penetrated by more than 60 diamond drill holes. The deposit displays all of the characteristics of Type 2 deposits. The main host rocks are lahars and lapilli tuffs of the Eocene Marama Formation. The mineralized zones are flooded with silica and the precious metal values are erratic. Intercalated mudstones and flow rocks appear to act as "dams" to epithermal solutions ascending the porous lahar and tuff units. Repeat brecciation and multiphase veinlets are characteristic of portions of the deposit.

The erratic distribution of gold in the Main Epithermal Deposit has made it difficult to calculate a mineral reserve, but it is estimated that 1.3 million tonnes of 2 g/tonne gold may occur in the deposit. One of the best drill intercepts on the property assayed 15.0 g/tonne over 8.8 metres.
REGIONAL MINERALIZATION continued

Type 2 Precious Metal Bearing Epithermal Deposits continued

Rainbow Claim Group

It is thought that the Rainbow Claim Group could host either a Type 1 or Type 2 precious metal bearing epithermal deposit.

PROPERTY GEOLOGY

Grid

The 2001 grid was expanded east on to the Rainbow 21 & 22 mineral claims with the establishment of a Baseline at 6+00N. The five flagged grid lines spaced 100 metres apart were then measured 700 metres south and 400 metres north of the Baseline as illustrated on Map R-02-1. Stations were marked at 25 metre intervals along each grid line to facilitate the geological mapping program. Key claim posts were also tied-in to the grid during the course of the work.

A Silva Ranger compass and a Topolite hip chain were used to establish the 500 metres of Baseline and 5500 metres of flagged grid line.

Summary of Property Geology

Steeply northeasterly dipping Eocene volcanics and sediments unconformably overlie Pre-Permian Monashee Group gneiss on the property. A strong northeasterly dipping fault (called the Fort Knox Basement Fault throughout this report) separates the Eocene rocks from the pre-Tertiary rocks.
PROPERTY GEOLOGY continued

Summary of Property Geology continued

A rhyolite tuff unconformably overlies other rock types on the property.

The Eocene volcanics include a variety of green and purple porphyritic andesite flows as well as at least one dacite flow. A very thick, poorly sorted, conglomerate unit comprised of Eocene volcanic clasts overlies the flow rocks.

The conglomerate is very limonitic and clay altered locally.

It is believed that epithermal solutions ascending the Fort Knox Basement Fault have selectively invaded the permeable conglomerate unit resulting in the clay alteration and mineralization (i.e. limonite after pyrite). Some quartz and calcite veinlets occur in fractures in the flow rocks, but alteration of these rocks is slight.

The rock units underlying the property are described in more detail under the titles that follow. The units were mapped on the Rainbow 12, 14 & 17-20 mineral claims in 2000 & 2001 and most of the units are expected to extend southeast on to the Rainbow 21 & 22 mineral claims below the deep glacial deposits that were mapped this year.

Pre-Permian Monashee Group Gneiss - Unit 1

Gneiss of the Monashee Group (unit 1) underlies the southwest corner of the property on the Rainbow 19 & 20 mineral claims. The gneiss is generally massive in outcrop and contains up to 10% irregular pegmatite and aplite dykes comprised of quartz and pink orthoclase.
PROPERTY GEOLOGY continued

Pre-Permian Monashee Group Gneiss - Unit 1 continued

The gneiss is fine to medium grained with banded layers of hornblende (30%) and white to light pink feldspars (50%). Quartz equals 20% of the rock.

The minerals comprising the gneiss are generally unaltered, but towards the Fort Knox Basement Fault, over a distance of 50 metres, the gneiss becomes more and more altered with chlorite and epidote. Within the fault, the gneiss is highly brecciated and altered to chlorite and epidote. There is 10 to 20% secondary quartz within the breccia locally.

Eocene Marron Formation - Unit 4

Andesitic Porphyry Flows - Unit 4a

Several andesitic porphyry flow rocks occur over a distance of 400 to 500 metres to the northeast of the Fort Knox Basement Fault. The andesites were all mapped as unit 4a in 2000, but in 2001 some of the more recognizable andesites were mapped as sub-units 4aa, 4ab, 4ac, 4ad and 4ae on Map R-01-1 which accompanied the 2001 Assessment Report.

In general, the andesites contain variable percentages of white plagioclase phenocrysts and augite phenocrysts. The plagioclase phenocrysts rarely exceed 10% of the rock and the groundmass minerals are usually very fine grained. Many of the andesites are green, but weather to purple with hematite staining.
PROPERTY GEOLOGY continued

Eocene Marron Formation - Unit 4 continued

Andesitic Porphyry Flows - Unit 4a continued

The 4a andesites are reduced to a gouge for up to 50 metres northeast of the trace of the Fort Knox Fault and are highly faulted for another 150 metres to the northeast. Elsewhere the 4a andesites exhibit very little fracturing, alteration or veining.

Augite Andesite - Unit 4aa

A dark to olive green augite andesite (Unit 4aa) with less than 10% plagioclase phenocrysts lies immediately northeast of the Fort Knox Basement Fault. The rock is moderately altered to chlorite and epidote. Locally, the augite andesite is highly fractured with smeared crystals, and in places the rock is reduced to gouge.

Faulted Mixed Clast Andesite - Unit 4ab

Highly faulted andesites (Unit 4ab) and/or volcaniclastic conglomerates form a low ridge centred 100 metres northeast of the Fort Knox Basement Fault. The clasts are comprised of various andesites of mixed sizes (usually 2 to 10 cm). Chlorite, epidote and minor limonite are common alteration minerals.

Brick Red Brecciated Andesite - Unit 4ac

A distinct brick red brecciated andesite (Unit 4ac) occurs as a ridge between grid lines 1+00E and 2+00E near the southwestern corner of the Rainbow 20 mineral claim.
PROPERTY GEOLOGY continued

Eocene Marron Formation - Unit 4 continued

Andesitic Porphyry Flows - Unit 4a continued

Brick Red Brecciated Andesite - Unit 4ac continued

Other than the hematite staining, the rock is not altered or veined. The breccia, which is probably a flow breccia, appears to be 25 to 35 metres thick.

Purple Porphyritic Andesite - Unit 4ad

A very distinct dark purple andesite with up to 20% white plagioclase phenocrysts (Unit 4ad) crosses the property from L1+00E, 8+00N to L7+00E, 3+00N. The andesite averages 70 metres in thickness.

The plagioclase phenocrysts are ragged and of mixed sizes with the largest being 1 cm. The rock contains 3% augite and 3% biotite microphenocrysts to 2 mm and 5% void space (vesicles?). The groundmass is purple and very fine grained.

Undifferentiated Porphyritic Andesitic Flows - Unit 4ae

Unit 4ae includes several porphyritic andesite flows of similar composition and texture which occur in a 150 to 200 metre wide belt between units 4ad and 4b.

The andesites all have plagioclase phenocrysts (10 to 15%) up to 1 cm and biotite and augite microphenocrysts up to 2 mm. The groundmass is very fine grained and can be green or purple. Some of the green andesites weather to purple with hematite staining.
**PROPERTY GEOLOGY** continued

**Eocene Marron Formation - Unit 4** continued

**Dacite Porphyry Flow - Unit 4b**

A light green dacite porphyry (unit 4b) overlies the 4a andesites to the northeast and is 150 to 170 metres thick. Orthoclase phenocrysts up to 1 cm equal 10 to 15% of the rock. There are also 5% mafic microphenocrysts set in a very fine grained to amorphous light green groundmass.

The dacite is much more brittle than the andesites and at many locations it is well fractured and stained with limonite (after pyrite). Up to 2% quartz veinlets fill fractures at many locations.

**Green Andesite Vesicular Flow - Unit 4c**

A thick (60 to 100 m) dark green andesite flow (unit 4c) lies immediately above the 4b dacite flow. The andesite is vesicular with 10% amygdules of calcite to 1 cm and 5-10% mafic microphenocrysts. The groundmass is very fine grained.

The 4c andesite is well fractured in places, but in general, it seems less brittle than the dacite. Quartz and calcite veinlets (up to 1 cm) fill fractures locally, but limonite staining is rare.
PROPERTY GEOLOGY  continued

Eocene Marron Formation - Unit 4  continued

Conglomerate - Unit 4d

A very thick conglomerate (unit 4d) extends for at least 370 metres to the northeast beyond the volcanics. The conglomerate is not sorted and is comprised of subangular to subrounded pebble and cobble sized clasts which are separated by 20% matrix material of course sand and grit. The clasts are most often 5 to 15 cm, but some measure over 1 metre in size. The clasts are comprised of an assortment of all of the volcanic units which lie to the southwest.

There is very little evidence of bedding within the conglomerate, but some elongate clasts and wisps of sandstone have an attitude of 130/80NE.

Because there is so little evidence of sorting or sedimentation, it is speculated that the material making up the conglomerate slid down a slope as a very large debris flow before consolidating into rock.

The conglomerate is generally weakly stained with limonite and slightly altered to clay, but there are localized zones where there is considerable clay alteration and strong (5%) limonite (after pyrite).

Eocene Marama Formation - Unit 5

The Marama Formation unconformably overlies the Marron Formation on the property. On the Rainbow 12 mineral claim, thin bedded greywackes, siltstones and argillites (collectively
PROPERTY GEOLOGY continued

Eocene Marama Formation - Unit 5

called unit 5a) appear to occur at the base of the Marama Formation. The sediments occur as rubble exposed by road construction and unfortunately the attitude of bedding can not be determined.

Immediately above the sediments there is a remnant of rhyolite tuff (5b) near grid 3+10E, 13+15N. The white to tan chalky tuff contains 20% lithic clasts of the Marron Formation volcanics.

Post-Eocene (?) Conglomerate - Unit 6

Near the southeast corner of the Rainbow 18 mineral claim (at grid 3+25E, 5+60N) there is a remnant of sedimentary rock that is comprised of thin bedded pebble conglomerate and greywacke. The clasts are subrounded and comprised of Monashee gneiss (90%) and Marron volcanics (10%). The conglomerate rests unconformably over Marron volcanics and it may also postdate the Marama Formation.

Pleistocene Sediments

The main features of the surficial geology on the Rainbow 21 & 22 mineral claims are illustrated on Map R-02-1. The glacial deposits are widespread and range from low benches of sand, gravel and boulders on the northern portions of the map area to very deep accumulations of sand and gravel on the southern portions of the map area. On the southern portions of the Rainbow 22 mineral claim, there are morainal ridges made up of sand and gravel believed to be 60 metres deep. There are also intermorainal basins (kettles) with shallow ponds.
PROPERTY GEOLOGY continued

Structural Geology and Faulting

Neither the volcanics nor the conglomerate (debris flow) give a clear indication of attitudes within the Marron Formation. Some elongate clasts and wisps of sandstone within the debris flow have a common attitude of 130/80 NE and this direction fits well with the assumed contacts (125 degrees) of the various Marron units that were illustrated on Map R-01-1 which accompanied the 2001 Assessment Report. The apparent steep dip of the Marron Formation on the property is also consistent with steep dip angles measured at other properties on the Venner Meadows Outlier.

The Fort Knox Basement Fault, which was first recognized and named by the writer while mapping the Fort Knox property 6 km to the west, is very well exposed on the Rainbow property. It has been traced for 800 metres across the Rainbow 19 & 20 mineral claims and for another 200 metres off of the property south of the Rainbow 19 & 21 mineral claims. It strikes at 120 degrees and appears to have a shallow dip (possibly 15 degrees?) to the northeast.

The Basement Fault occurs at the contact between Pre-Permian Monashee Gneiss and the Eocene Marron Formation. Fault movement involves both the Pre-Tertiary and Tertiary rocks.

The Monashee gneiss is increasingly more disrupted and chloritic towards the Basement Fault and it is entirely brecciated and altered to chlorite and epidote over a horizontal distance of 20 metres at the Fault. There is up to 20% quartz replacement within the brecciated rock locally.
PROPERTY GEOLOGY continued

Structural Geology and Faulting continued

The volcanics of the Marron Formation are reduced to gouge over a horizontal distance of 50 metres northeast of the Basement Fault and are strongly disrupted and chloritic for another 150 metres to the northeast.

The very wide horizontal zone of faulting suggests that the fault may have a shallow dip (15 Degrees?; see Cross-Section Diagram R-02-1).

Alteration and Mineralization

Limonite staining is widespread across the 4d conglomerate and to a lesser extend across the 4b dacite unit. There are localized zones within both rock types where limonite equals 5% of the rock. It is believed that the limonite represents weathered pyrite.

There are also localized zones of clay alteration within the conglomerate. The clay alteration is most intense where the limonite staining is strongest.

Epithermal quartz and calcite veinlets (1-5%) occur at several sites within the 4b dacite and appear to have a close association with zones of limonite staining.

Quartz and calcite veinlets (1-3%) also cut through the 4c andesite unit at several locations, but there is a notable lack of limonite staining within the 4c andesite.

The limonite staining, clay alteration and epithermal quartz and calcite veinlets on the Rainbow property are all similar to features which have been mapped on other properties located over the Venner Meadows Tertiary Outlier (e.g. Gold and Fort Knox properties).
DISCUSSION

Geological mapping on the Rainbow 12, 14 & 17-20 mineral claims in 2000 & 2001 confirmed that the steeply dipping sequence of Eocene volcanics and sediments which occur on the southern portion of the property are separated from Pre-Tertiary rocks by a gently northeasterly dipping fault. This fault has been recognized on other properties in the area mapped by the writer (i.e. Fort Knox, Lucky Star and Gold properties) and it has been called the Fort Knox Basement Fault in previous reports.

It is believed that the Fort Knox Basement Fault defines the southwestern edge of the 12 km long Venner Meadows Tertiary Outlier and that it has played a role in the development of some gold deposits. It is thought that the Fault has provided the conduit for epithermal solutions that have ascended from a source (possibly a deep vertical fault?) which lies to the northeast. There is evidence of the passage of epithermal solutions through many of the more permeable rock units which comprise the Eocene sequence of the Outlier. Clay alteration, pyritization, silicification and quartz/calcite veining occur at widespread locations across the southwestern side of the Outlier. In places, the quartz and calcite veins and veinlets are notably auriferous (e.g. Gold property; see Regional Mineralization).

There is ample evidence that the epithermal solutions have penetrated the most permeable rocks on the southern portions of the Rainbow property just as they have on other properties located on the Outlier. The 4d conglomerate exhibits widespread clay alteration, limonite staining and minor quartz veining and the brittle 4b dacitic unit is also altered, stained and veined locally. The andesitic units (4a & 4c) on the other hand are not well altered or stained.

All of the features observed on the southern portion of the Rainbow property can be explained with the general model that has been used for exploration elsewhere on the Venner Meadows Tertiary Outlier. The model suggests that epithermal solutions have ascended the
DISCUSSION continued

Fort Knox Basement Fault and have invaded the most permeable of the Eocene rocks. It suggests that the first permeable rocks encountered by the solutions will be the most affected.

An attempt has been made to illustrate the main concepts of the exploration model on Cross-Section D-D' (see Map R-02-1) The Cross-Section diagram indicates that the thick 4d conglomerate unit may have been the first permeable unit encountered by the ascending epithermal solutions. It is envisioned that the conglomerate may have absorbed the epithermal solutions like a sponge or ink blotter above the Basement Fault. The greatest absorption is expected to have occurred near the fault and the degree of absorption is expected to have decreased logarithmically away from the Fault.

The general epithermal model suggests that the deposition of silica from epithermal solutions will have converted the conglomerate into a brittle rock by replacement. The conglomerate is then expected to have fractured easily with each new movement along the Fault. The model further suggests that repeated brecciation near the Fault and the filling of new fractures by veining from episodal epithermal activity would have the potential to greatly upgrade the precious metal content to economic concentrations. It is thought that veined and silica replaced conglomerate could be well mineralized for a considerable distance above the Fault (see Cross-Section D-D').

In the 2001 map area there is evidence that the conglomerate is more clay altered and stained with limonite towards the southwest where the Basement Fault is believed to lie 150 metres below surface than it is further to the northeast where the Fault is believed to lie 250 metres below surface. This observation supports the general exploration model.

The other most prospective rock unit on the southern portion of the Rainbow Claim Group is the 4b dacite. The dacite is inherently brittle and it is believed to have fractured easily during
tectonic activity. The fractures are thought to have been mended with quartz and calcite derived from the epithermal solutions ascending the Basement Fault. Some veinlets occur on surface, but it is speculated that the veinlets increase in density towards the Fault. There could be economic concentrations of precious metals within stockwork veinlets near the Fault.

The andesitic units are not inherently brittle and there are few indications of mineralization on surface within the andesites. It is, however, expected that the andesitic units could be well fractured adjacent the Basement Fault, and that stockwork veining with precious metal values could occur.

Some of the andesitic units, however, are believed to occur several hundred metres away from the source of the epithermal solutions, and according to the exploration model, these units would not be expected to be well mineralized.

This year's mapping program on the Rainbow 21 & 22 mineral claims was conducted with the general exploration model in mind and the assumption that the very prospective 4d and 4b rock units might well extend further southeast from where they were last mapped on the Rainbow 14, 17 & 19 mineral claims.

Heavy glacial drift over much of the new survey area greatly hampered this year's mapping, but two significant exposures were found which are believed to add potential to the property.

The first outcrop occurs at 0+60S, 9+60E and is comprised of brecciated and highly altered (epidote and chlorite) Monashee gneiss. This rock represents the Fort Knox Basement Fault. The second outcrop occurs at grid 12+00E, 8+40N. The rock at this site is a highly brecciated conglomerate (unit 4d). The breccia contains fragments of quartz veinlets and it is
DISCUSSION  continued

moderately stained with limonite. The outcrop is considered important in that it lies 250 metres from all previous mapping and it adds another 250 metres in strike length to the 4d conglomerate unit.

The volcanic units (4a, 4b & 4c) of the Eocene sequence were not mapped in this year’s survey area, but they are expected to lie between the faulted Monashee gneiss and the brecciated 4d conglomerate as a series of subparallel units just as they do to the northwest.

All of the Eocene units are illustrated on the western edge of Map R-02-1. The map indicates fairly shallow drift on the Rainbow 21 mineral claim where the 4d conglomerate is expected to cross the survey area. The drift is also shallow on the northeast corner of the Rainbow 22 mineral claim where the 4b dacite is expected to cross the survey area, but the drift gets very deep (60 metres?) on the southwest corner of the Rainbow 22 mineral claim.

The results of this year’s mapping indicate that the two most prospective rock units (4d and 4b) probably cross the property for over 1000 metres. Economic precious metal deposits associated with the two rock units and the Basement Fault could lie at depths of 150 to 250 metres below surface at several easily accessible drill sites on the property.

The target area is large and it is recommended that several rock samples be collected from the clay altered limonitic 4d conglomerate and the veined and limonitic 4b dacite in order to define the most optimum drill sites.

The rock samples should be analyzed for the standard 30 elements by ICP and for gold by ICP-MS. The ICP results could outline areas with elevated concentrations of arsenic, antimony, silver or molybdenum which are known to be good pathfinders for gold concentrations elsewhere in the district.
DISCUSSION continued

Once the geochemical data is received, three or four drill sites should be selected to penetrate the 4d conglomerate and 4b dacite units down to where they are in contact with the Fort Knox Basement Fault.

CONCLUSIONS AND RECOMMENDATIONS

This year's geological mapping program which was conducted over the Rainbow 21 & 22 mineral claims was hampered by extensive glacial till and drift. In spite of the cover, two important rock exposures were discovered. One outcrop provided more confirmation of the Fort Knox Basement Fault. A second outcrop of highly brecciated and limonite stained conglomerate proves that the highly prospective 4d conglomerate unit extends at least another 250 metres along strike to the southeast from where it was previously mapped.

The Fort Knox Basement Fault, which is believed to define the southwestern edge of the 12 km long Venner Meadows Tertiary Outlier, is exposed over a length of 1000 metres on the southern side of the Rainbow Claim Group.

There is strong evidence (i.e. clay alteration, pyritization and silicification) that suggests that the Fort Knox Basement Fault was the main conduit for epithermal solutions that have ascended from some source which lies to the northeast on the Rainbow Claim Group (the same evidence occurs on the Gold and Fort Knox properties which lie 1 and 6 km to the west of the Rainbow property).

The Eocene volcanics and sediments which underlie the Rainbow property dip steeply towards the Basement Fault, and there are strong indications that the ascending epithermal solutions have selectively invaded the most permeable Eocene rock units.
CONCLUSIONS AND RECOMMENDATIONS continued

The 4d conglomerate, in particular, exhibits widespread clay alteration and limonite staining. The brittle 4b dacite is well fractured in places and strongly stained with limonite. Quartz veinlets and silica replacement also occur within the dacite locally.

The 4d conglomerate which crosses the southern portion of the Rainbow property for 1000 metres and has a thickness in excess of 370 metres represents an immense host for the deposition of silica and associated precious metals from ascending epithermal solutions. This is especially true adjacent the Fort Knox Basement Fault. The brittle 4b dacite is also expected to be a good permeable host rock where it is brecciated adjacent the Basement Fault. Heavy stockwork veining with associated precious metal values are expected near the Fault.

The Basement Fault is expected to underlie the 4b dacite and 4d conglomerate at depths ranging from 150 to 300 metres below surface and proposed targets will require drilling for testing.

Prior to drilling, lithogeochemical sampling is recommended on the Rainbow 11-24 mineral claims in order to define the optimum drill targets (see Discussion).

The Rainbow Claim Group is very accessible and a low-cost Reverse Circulation Drilling Program could be conducted with ease.

July 30, 2002
Kelowna, B.C.

Murray Morrison, B.Sc
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Harrison, C.S.


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1992: Geophysical Assessment Report, Fort Knox Claim Group, Okanagan Falls Area, Osoyoos Mining Division.*

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2001: Geological Assessment Report, Rainbow Claim Group, Osoyoos Mining Division.*

*Assessment Reports filed with the Ministry of Energy and Mines of British Columbia.
STATEMENT OF QUALIFICATIONS

I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:

1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.

2. I have been working in all phases of mining exploration in Canada for the past thirty-three years.

3. During the past thirty-three years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.

4. I have conducted several geological, geochemical, and geophysical surveys on mineral properties in Southern British Columbia during the past thirty-three years.

5. I conducted the geological mapping program outlined in this report.

6. I own 100% interest in the Rainbow 1-4 & 7-24 mineral claims.

July 30, 2002
Kelowna, B.C.
STATEMENT OF EXPENDITURES ON THE RAINBOW CLAIM GROUP

Statement of Expenditures in connection with a Geological Mapping Program carried out on the Rainbow Claim Group, located 24 km southeast of Okanagan Falls, B.C. (N.T.S. Map 82-E-6W) for the year 2002.

GEOLOGICAL MAPPING PROGRAM (50 Hectares)

M. Morrison, geologist 4 days @ $300.00/day $1,200.

Automobile (including gasoline and insurance) 4 days @ $50.00/day 200.

Meals and Lodging no charge -

Flagging and belt chain thread 30.

Sub-total: $1,430.

REPORT PREPARATION COSTS

M. Morrison, geologist 2 days @ $300.00/day $600.

Drafting 53.

Typing 75.

Copying 20.

Sub-total: $748.

GRAND TOTAL: $2,178.

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Geological Mapping Program carried out April 30 to May 16, 2002.

July 30, 2002
Kelowna, B.C.

Murray Morrison - Geologist
To Accompany a Geologic Report by M.S. Morrison
Coles Peaks Towed With a Compass and Hip-Chain.

Please see Figures 2 & 3 for the Entire Rainbow Claim Group.