REPORT ON
GEOLOGICAL AND GEOCHEMICAL SURVEY
CONDUCTED JULY 18 - AUGUST 29, 1982
FOR
QUARTZ LAKE PROJECT

QUIVER 1-40
(YA68429-YA68452 & YA68709-YA68724)

WATSON LAKE MINING DISTRICT
YUKON TERRITORY
CLAIM SHEETS 95D/5 AND 95D/12
LATITUDE 60°32'N; LONGITUDE 127°49'W

DECEMBER, 1982
This report has been examined by the Geological Evolution Unit under Section 53 (4), Yukon Quartz Mining Act and is allowed as representative work to the amount of $11,000.

[Signature]

Regional Manager, Deputy Minister, Geological Services for Commissioner of Yukon Territory.
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<td>D</td>
</tr>
<tr>
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<td></td>
<td>D</td>
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</tbody>
</table>
INTRODUCTION

The Quiver 1-24 claims were staked in June, 1982 by Quartz Lake Project (Kidd Creek Mines Ltd.) to cover anomalous arsenic geochemical values obtained from previous work in the area.

In July, the Quiver 25-28 were added to cover a mineralized boulder train exposed on the shore of Roy Lake and the Quiver 29-40 were added to cover the southern extension of pre-1982 anomalous values and to form a grouping bridge to the Cuz claims.

Work by Quartz Lake Project (QLP) in 1982 consisted of mapping, prospecting and collection of 795 stream sediment, soil and rock samples, as illustrated on Figures 2 to 6 in pocket.

PROPERTY, LOCATION, ACCESS AND HISTORY

The property consists of 40 Quiver claims in an irregularly-shaped, but contiguous, block. The claims are recorded in the Watson Lake Mining District as follows:

<table>
<thead>
<tr>
<th>Claim Name</th>
<th>No.</th>
<th>Mining District</th>
<th>Claim Sheet</th>
<th>Grant Numbers</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiver 1-24</td>
<td>24</td>
<td>Watson Lake</td>
<td>95D/12</td>
<td>YA68429-YA68452</td>
<td>11 June/83</td>
</tr>
<tr>
<td>Quiver 25-40</td>
<td>16</td>
<td>Watson Lake</td>
<td>95D/5 &amp; 12</td>
<td>YA68709-YA68724</td>
<td>28 July/83</td>
</tr>
<tr>
<td><strong>Total - 40</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The property is located 70 km northeast of Watson Lake on claim sheets 95D/5 and 95D/12, latitude 60°32'N and longitude 127°49'W, as illustrated on Figure 1 on the following page. Access in 1982 was by foot from the QLP basecamp at Roy Lake.
Figure 1
Location map - QUIVER Claims
Quartz Lake Project
The western portion of the Quiver claims was previously staked as the SN claims by Liard River Mining in 1954 and again as part of the Porker claim block in 1973 by Hyland Joint Venture (Marietta Resources Ltd., Mitsubishi Metal Corp. and individuals). Both groups explored for lead-zinc with small drill programs and obtained negative results.

**GEOLOGY**

The claims overlie rounded mountainous terrain cut by east-flowing streams in swampy, broad valleys. Elevations range from 930 m (3050') to 1325 m (4350'). Vegetation consists of spruce and fir on hillsides with moderate to thick birch and willow underbrush, to open pine forest on glacial terraces. The area was ice sheet glaciated during the Pleistocene. Thin glacial till is common on hillsides and a thick glacial-fluvial terrace occupies valleys up to approximately 1065 m (3500') elevation. Outcrop is sparse and restricted to steep slopes above terrace level and deeply incised creeks crosscutting the thick glacial material.

The property sits within a northerly-trending belt of Hadrynian sedimentary rocks regionally known as the Grit Unit. The Grit Unit is overlain locally by probable Cambro-Ordovician silty limestone and limy shale, a western facies of the Rabbitkettle Formation. On the Quiver claims, grit, quartzite and quartz pebble conglomerate of the Grit Unit are mapped as one unit as insufficient mapping has been done for further stratigraphic subdivisions. A few small outcrops of platy, carbonaceous, fetid limestone interbedded with black, non-calcareous phyllite and bleached, pyritic sandstone are located on the northwest side of the property. These rocks may be part of the Grit Unit but are more likely younger. The geology of the Quiver claims is illustrated on Figure 6 in pocket.
GEOCHEMISTRY

General

The 1982 sampling program by QLP consisted of 12 stream sediment, 761 soil and 22 rock samples, as shown on Figures 2 to 5 in pocket. Silts were collected at approximately 300 m intervals along a single large creek draining the south end of the claims and when smaller creeks were encountered along soil lines. Reconnaissance soil samples were collected on the shore of Roy Lake to follow-up mineralized boulders on the beach, and along a shear zone near the mouth of Cumzin Creek to follow-up high gold values from the pre-1982 results. Grid soil sampling was conducted along and between old cut lines from a Hyland Joint Venture grid. Sample spacings of 100 feet, in keeping with the old grid coordinates, were measured by pacing along cut lines and by pace and compass from a north-south baseline (148E) between cut lines. All sample sites were marked with flagging on which grid coordinates and sample bag numbers were written. Line spacing on the northeast corner of the grid was 200 feet and 400 feet elsewhere.

Soils were obtained from a B+C horizon by digging through 10 to 30 cm of moss and frozen peat using a heavy mattock. Samples were collected in waterproof kraft envelopes and shipped to Chemex Labs Ltd., North Vancouver, B.C. for gold analysis using a NAA finish on a minus 35 mesh fraction. Sample splits of grid soil samples were later reanalyzed for arsenic, bismuth, lead, copper, tungsten and manganese using ICP-AES and for antimony using standard atomic absorption techniques. (See Appendix I for details of analytical techniques.) Samples of altered and/or mineralized rocks were collected for geochemical analysis and results are plotted on the geochem maps and listed on Table 1 on the following page.
TABLE 1

Rock Geochemical Analyses

<table>
<thead>
<tr>
<th>Sample</th>
<th>Au (ppb)</th>
<th>As (ppm)</th>
<th>Sb (ppm)</th>
<th>Bi (ppm)</th>
<th>Pb (ppm)</th>
<th>Ag (ppm)</th>
<th>W (ppm)</th>
<th>Zn (ppm)</th>
<th>Cu (ppm)</th>
<th>He (ppm)</th>
<th>Sn (ppm)</th>
<th>Sample Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 5026</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bleached, silicified grit with Py</td>
</tr>
<tr>
<td>M 5027</td>
<td>59</td>
<td>200**</td>
<td>100***</td>
<td>50***</td>
<td>5***</td>
<td>2***</td>
<td>6***</td>
<td>13***</td>
<td>565***</td>
<td></td>
<td></td>
<td>Altered conglomerate with 20% sulph.</td>
</tr>
<tr>
<td>M 14352</td>
<td>19</td>
<td>55**</td>
<td>1.8</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 14353</td>
<td>12</td>
<td>20**</td>
<td>2.4</td>
<td>3</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>Sheared, black phyllite</td>
</tr>
<tr>
<td>M 14354</td>
<td>11</td>
<td>35**</td>
<td>2.6</td>
<td>7</td>
<td>13</td>
<td>10</td>
<td>61</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>Black siltstone</td>
</tr>
<tr>
<td>M 14355</td>
<td>33</td>
<td>205**</td>
<td>3.0</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>Sheared, grained grit</td>
</tr>
<tr>
<td>M 14356</td>
<td>2</td>
<td>30**</td>
<td>2.2</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>10</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Tan, sugary quartz sandstone, Trace PY</td>
</tr>
<tr>
<td>M 14357</td>
<td>6</td>
<td>30**</td>
<td>2.6</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>3</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>Quartz-veined grit</td>
</tr>
<tr>
<td>M 14357A</td>
<td>96</td>
<td>320**</td>
<td>1.6</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Silicified grit with sulphide veins</td>
</tr>
<tr>
<td>M 14358</td>
<td>2</td>
<td>55**</td>
<td>1.8</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Alterable, QZ-veined black shale, Py</td>
</tr>
<tr>
<td>M 14359</td>
<td>93</td>
<td>45**</td>
<td>1.6</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Quartz vein with minor sulphide</td>
</tr>
<tr>
<td>M 14360</td>
<td>1</td>
<td>50**</td>
<td>1.4</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Silicified, quartz-veined grit</td>
</tr>
<tr>
<td>M 14379</td>
<td>88</td>
<td>1200**</td>
<td>4.6</td>
<td>16</td>
<td>11</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>Quartz-veined, tan, sugary grit</td>
</tr>
<tr>
<td>M 14380</td>
<td>4</td>
<td>55**</td>
<td>3.0</td>
<td>3</td>
<td>8</td>
<td>10</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quartz veins in fine grit, Pyrite</td>
</tr>
<tr>
<td>M 14381</td>
<td>5</td>
<td>75**</td>
<td>1.8</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bleached, fine grit, Trace Pyrite</td>
</tr>
<tr>
<td>M 14382</td>
<td>1</td>
<td>30**</td>
<td>1.4</td>
<td>2</td>
<td>19</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sheared, bleached, limy siltstone</td>
</tr>
<tr>
<td>M 14383</td>
<td>62</td>
<td>3680**</td>
<td>5.4</td>
<td>4</td>
<td>13</td>
<td>10</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bleached, quartzite grit with QZ-PY-Arsenopy veins</td>
</tr>
<tr>
<td>M 14384</td>
<td>60</td>
<td>3200**</td>
<td>3.4</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quartz-veined grit with arsenopy (?)</td>
</tr>
<tr>
<td>M 14385</td>
<td>20</td>
<td>210**</td>
<td>1.8</td>
<td>5</td>
<td>14</td>
<td>10</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quartz-siderite veined grit</td>
</tr>
<tr>
<td>M 14386</td>
<td>11</td>
<td>395**</td>
<td>3.6</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sheared grit</td>
</tr>
<tr>
<td>M 14992</td>
<td>42</td>
<td>795**</td>
<td>1.2</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Black, fine grit with PY-arsenopy veins</td>
</tr>
<tr>
<td>M 14993</td>
<td>941</td>
<td>9440**</td>
<td>9.4</td>
<td>48</td>
<td>4</td>
<td>0.5</td>
<td>5</td>
<td>14</td>
<td>82</td>
<td>0.3</td>
<td>30</td>
<td>Sheared grit with PY-arsenopy veins</td>
</tr>
</tbody>
</table>

* Au – Neutron Activation Analysis; Sb, Te, Hg, Pb, Ag – Atomic Absorption
** ICP-AES Analysis except as noted
*** Spectrographic Analysis, additional elements as follows: B – 5000 ppm, Cr – 150 ppm, Ti – 700 ppm.
Results and Discussion

Gold, antimony, arsenic and bismuth response on the Quiver claims are plotted on Figures 2 to 5 in pocket. Tungsten response is uniformly at and below detection level of 10 ppm. Copper, lead and manganese results are shown on Figures 7 to 9 in pocket and no obvious areas of interest are indicated.

Gold values returned in silt range from 4 to 33 ppb. Soil values range from less than 1 to 701 ppb and outline a small area at the northwest end of the grid roughly 75 by 150 m in size with gold values greater than 100 ppb. The anomaly is truncated on the north by a glacial terrace and to the south by the Porker claims. Two small areas of weakly anomalous (40 ppb) gold occur in the central part of the grid in a region of moderate to heavy glacial cover. Rock specimens from the Quiver property returned values up to 941 ppb at the north end of the grid. Soil lines along Roy Lake returned values from less than 1 to 22 ppb gold and soil and rock samples from Cumzin Creek returned values of 4 to 22 ppb and 8 to 17 ppb, respectively.

Antimony results in silt range from 2.4 to 5.0 ppm. Soil values ranging from 0.6 to 47 ppm are anomalous (greater than 10 ppm) at the north end of the grid, coincident with the gold anomaly. The 5 ppm contour outlines a broad area in the central and southern part of the grid, partially coincident with weakly anomalous gold values. Rock samples returned maximum values of 5.4 ppm.

Bismuth values in silt range from less than 2 to 4 ppm. In soil, values range from less than 2 to 32 ppm. Highest values are scattered within the zone of high gold at the north end of the grid. A weak bismuth anomaly near the south end of the grid coincides with anomalous arsenic and antimony with no gold response. Numerous weakly anomalous values (6 to 9 ppm) occur in the central portion of the
grid area. Threshold values may be lower in this area because of heavy drift cover. Rock samples returned a maximum of 48 ppm at the north end of the grid and 50 ppm from Roy Lake shore boulders.

Arsenic in silt ranges from 60 to 385 ppm. Soils range from 20 to 4000 ppm and one of the best concentrations of high values (greater than 300 ppm) coincides with the gold anomaly at the north end of the grid. Across the rest of the grid, arsenic values are consistently greater than 100 ppm with a 400 by 150 m zone of greater than 300 ppm at 108+00N and a 200 by 100 m zone of similar values at 60+00N. High values south of 60+00N on glacial terrace material are likely due to precipitation of chemically transported arsenic, rather than high arsenic substratum. Rock samples range up to 3600 ppm.

MINERALIZATION

Mineralized rocks at the north end of the grid include sheared, silicified grit which is crosscut by veinlets of pyrite, arsenopyrite and quartz. The veinlets postdate the shear fabric. Best values in rock of this sort is 941 ppb Au. A second type of mineralized rock is a bleached, sugary, tan weathered rock with disseminated pyrite grains and quartz veinlets. Low gold values are returned from these rocks but the alteration suggests the presence of hydrothermal activity.

A cluster of mineralized boulders in a 5 by 5 m area along the shore of Roy Lake includes silicified grit with 10 to 20 percent disseminated pyrite and chalcopyrite and rotted, leached, siliceous rocks in which sulphides are weathered away. Boulders of this type are local to only this spot on the lakeshore, are totally surrounded by glacial till, and resemble rocks peripheral to the McMillan massive sulphide deposit.
RECOMMENDATIONS

The gold anomaly at the north end of the Quiver grid should be further mapped and prospected to determine the nature of controls on mineralization. The steep slopes above Quartz Lake should be prospected for mineralization exposed in windows through the glacial material. The weak gold, arsenic, antimony and bismuth anomalies in the central and southern portion of the grid should be further sampled by digging test pits to assess geochemical response close to bedrock with subsequent trenching of favourable zones.

APPENDIX I - ANALYTICAL TECHNIQUES
GEOCHEMICAL PREPARATION
AND
ANALYTICAL PROCEDURES

1. ** Geochemical samples (soils, silts) are dried at 80°C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh.

2. A 1.00 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% HClO4 and concentrated HNO3. Digestion time = 2 hours.

3. Sample volume is adjusted to 25 ml. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures.


   Copper       - 1 ppm
   Molybdenum   - 1 ppm
   Zinc         - 1 ppm
   * Silver     - 0.2 ppm
   * Lead       - 1 ppm
   * Nickel     - 1 ppm
   * Chromium   - 5 ppm
   * Cobalt     - 1 ppm
   Manganese    - 5 ppm
   Iron         - 2 ppm
   Cadmium      - 0.1 ppm

   * Ag, Pb, Co & Ni are corrected for background absorption.

5. Elements present in concentrations below the detection limits are reported as one half the detection limit, i.e. Ag - 0.1 ppm.

** 1982 Quartz Lake Project samples were dried, sieved through an ASTM 35 mesh screen (0.50) and the minus 35 mesh fraction was pulverized and homogenized in a ring grinder to approx, -100 mesh.
PPM ANTIMONY

A 2.0 gm sample digested with conc. HCl in hot water bath. The iron is reduced to Fe +2 state and the Sb complexed with I-. The complex is extracted with TOPO-MIBK and analyzed via A.A. Correcting for background absorption 0.2 ppm +/- 0.2

Detection limit - 0.2 PPM.

PPM ARSENIC

A 1.0 gram sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digested is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with NaBH4 and the arsenic content determined using flameless atomic absorption.

Detection limit - 1 PPM

PPM BISMUTH

A 2.0 gram sample is digested with Conc. HCl and potassium chlorate. The solution cooled. After the addition of KI and the reduction of iron, the solution is extracted with MIBK-aliquot 336 and analyzed via standard AA procedure correcting for background absorption.

Detection limit - 0.2 PPM

PPM TELLURIUM

A 5.0 gram sample digested with aqua-regia to dryness. The residue taken up in 25% HCl and the solution adjusted with HBr to 3M Br-. After the reduction of iron with ascorbic acid the tellurium bromide complex is extracted into MIBK, washed and analyzed via AA correcting for background absorption.

Detection limit - 0.1 PPM
GEOCHEMICAL PROCEDURES FOR GOLD AND RELATED ELEMENTS

PPB GOLD: Chemical extraction - Atomic absorption analysis

A 5 gm sample ashed @ 800 deg. C for one hour, digested with aqua regia to dryness - taken up in 25% HCl-, the gold then extracted as the bromide complex into MIBK and analyzed via A.A.

Detection limit - 10 PPB.

GOLD FA-AA COMBO METHOD:

For low grade samples and geochemical materials 10 gram samples are fused with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO3 and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer.

Detection Limit - 5 ppb.

GOLD NAA - NEUTRON ACTIVATION ANALYSES**

A 10 gm sample is fused in litharge, carbonate and silicious flux. The resulting lead button containing any gold in the sample is cupelled in a muffle furnace to produce a precious metals bead.

Sample beads, plus standard and blank beads are irradiated in a thermal neutron flux. The gamma emissions of the irradiated beads are counted utilizing a Ge (Li) detector and quantified for gold.

The detection limit for a 10 gm sample is 1 µg/kg (ppb).

PPM SILVER

A 1.0 gm portion of sample is digested in conc. perchloric-nitric cid (HClO4-HNO3) for approx. 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Silver is determined by atomic absorption technique using background correction on analysis.

Detection limit - 0.1 PPM.

** Technique used for all Quartz Lake Project analyses, 1982 and pre 1982.
GEOCHEMICAL PREPARATION AND ANALYTICAL PROCEDURES ICP-AES

Geochemical samples (soils, silts) are dried at 80°C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh. A 0.50 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% perchloric acid and concentrated nitric acid. Digestion time is 2 hours. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures. Detection limits using Yvon-Jobin 48P Inductively Coupled Plasma Atomic Emission Spectrometer.

<table>
<thead>
<tr>
<th>Element</th>
<th>Detection</th>
<th>Element</th>
<th>Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>10 µg/g</td>
<td>Molybdenum</td>
<td>1 µg/g</td>
</tr>
<tr>
<td>Bismuth</td>
<td>2 µg/g</td>
<td>Nickel</td>
<td>1 µg/g</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.5 µg/g</td>
<td>Phosphorus</td>
<td>10 µg/g</td>
</tr>
<tr>
<td>Cobalt</td>
<td>1 µg/g</td>
<td>Silver</td>
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<tr>
<td>Copper</td>
<td>1 µg/g</td>
<td>Tungsten</td>
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</tr>
<tr>
<td>Iron</td>
<td>0.001%</td>
<td>Uranium</td>
<td>10 µg/g</td>
</tr>
<tr>
<td>Lead</td>
<td>1 µg/g</td>
<td>Vanadium</td>
<td>1 µg/g</td>
</tr>
<tr>
<td>Manganese</td>
<td>1 µg/g</td>
<td>Zinc</td>
<td>1 µg/g</td>
</tr>
</tbody>
</table>

Elements which exceed the upper limit for geochemical analyses should be assayed quantitatively.
STATEMENT OF QUALIFICATIONS

I, Alan R. Archer, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in Burnaby, British Columbia, do hereby declare:

1. I am a 1957 graduate of the University of British Columbia in geological engineering.

2. I have been engaged in geological engineering for over twenty years, the past seventeen of which have been as a consultant.

3. I am a registered professional engineer in British Columbia and in Yukon Territory.

4. I have supervised the work described in this report.

Alan R. Archer, B.A.Sc., P.Eng.
AFFIDAVIT

I, Joan Mariacher, of Vancouver, B.C. make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Quiver 1 - 40 mineral claims on Claim Sheet 95D/12 is accurate.

Sworn before me at Vancouver, B.C.
this 7th day of December, 1982

Joan Mariacher

Notary, Yukon Territory
Statement of Expenditures
Soil Sample Survey
Quiver 1 - 24 Claims
December 15, 1982

Management

Archer, Cathro & Associates (1981) Limited $ 500.00

Expenses

Chemex Labs, geochem analyses -

(a) 817 samples for Au (NAA) $4,902.00
(b) 793 samples for Sb and 6 element ICP analysis 5,868.00 10,770.00

Total $11,270.00


To: ARCHER CATHRO & ASSOC. (1981) LTD.,
P.O. BOX 4127,
WHITEHORSE, Y.T.
Y1A 3S9

Date : 21-JUL-82
P.O. # : NONE
Project QLP

Invoice for analytical work reported on certificate(s) A8211811-001 to -006

<table>
<thead>
<tr>
<th>Analysed for</th>
<th>Quantity code description</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>240 101 - Au NAA ppb</td>
<td>6.00</td>
<td>1440.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges :

<table>
<thead>
<tr>
<th></th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>240 203 - -35 mesh sieve + ring</td>
<td>1.50</td>
<td>360.00</td>
</tr>
</tbody>
</table>

TOTAL $ 1800.00
Discount (20 %) $ 360.00

Please pay this amount ---> $ 1440.00

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts
**CHEMEX LABS LTD.**

To: ARCHER CATHRO & ASSOC. (1981) LTD.,

P.O. Box 4127,
WHITEHORSE, Y.T.
Y1A 3S9

Invoice #: 18212447
Date: 17-AUG-82
P.O. #: NONE
Project #: CLP

Invoice for analytical work reported on certificate(s) A8212447-C01 to -C06

<table>
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<tr>
<th>Analysed for</th>
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<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>24C 101 - Au NAA ppb</td>
<td>6.00</td>
<td>1440.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

<table>
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<tr>
<th>Analysis</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>24C 203 - -35 mesh sieve + ring</td>
<td>1.50</td>
<td>360.00</td>
</tr>
</tbody>
</table>

TOTAL: $1800.00
Discount (20%): $360.00

Please pay this amount: $1440.00

TERMS -- NET 30 DAYS
2.0 % per month (24% per annum) charged on overdue accounts

MEMBER CANADIAN TESTING ASSOCIATION

**Net 30 Days**

$1840.00

$1440.00

$328.00

$112.00

$7488.00

---

(member signature)
To: ARCHER CATHRO & ASSOC. (1981) LTD.,
P.O. BOX 4127,
WHITEHORSE, Y.T.
Y1A 3S9

Invoice # : I8212448
Date : 17-AUG-92
P.C. # : NONE
Project CLP

Invoice for analytical work reported on certificate(s) A8212448-001 to -006

<table>
<thead>
<tr>
<th>Analysed for</th>
<th>code</th>
<th>description</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>24C</td>
<td>101</td>
<td>Au NAA</td>
<td>ppb</td>
<td>6.00</td>
<td>1440.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

| 24C | 203 | -35 mesh sieve + ring | 1.50 | 360.00 |

TOTAL $1800.00
Discount (20%) $360.00

Please pay this amount -> $1440.00

TERMS -- NET 30 DAYS
2.0% per month (24% per annum) charged on overdue accounts
To: ARCHER CATHRO & ASSOC. (1981) LTD.,

P.O. BOX 4127,
WHITEHORSE, Y.T.
Y1A 3S9

Invoice # : 18212451
Date : 23-AUG-82
P.O. # : NONE
Project CLP

Invoice for analytical work reported on certificate(s) A8212451-001 to -003

<table>
<thead>
<tr>
<th>Analysed for</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>98 101 - Au NAA</td>
<td>ppb</td>
<td>6.00</td>
<td>588.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

| 98 203 - -35 mesh sieve + ring | 1.50 | 147.00 |

---------------------
TOTAL $ 735.00
Discount (20%) $ 147.00
-------------
Please pay this amount ----> $ 588.00
---------

TERMS -- NET 30 DAYS
2.0% per month (24% per annum) charged on overdue accounts
To: ARCHER CATHRO & ASSOC. (1981) LTD.

1016-510 WEST HASTINGS
VANCOUVER, B.C.
V6B 1L8

Invoice # : I8214277

Date : 24-NOV-82
P.O. # : NONE
Project QLP

Invoice for analytical work reported on certificate(s) A8214277-001 to -005

<table>
<thead>
<tr>
<th>Analysed for</th>
<th>code</th>
<th>description</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
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</thead>
<tbody>
<tr>
<td>168</td>
<td>229</td>
<td>Partial ICP digestion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>553</td>
<td>Arsenic ppm (ICP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>556</td>
<td>Tungsten ppm (ICP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>Lead ppm (ICP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>561</td>
<td>Bismuth ppm (ICP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>568</td>
<td>Manganese ppm (ICP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>577</td>
<td>Copper ppm (ICP)</td>
<td></td>
<td></td>
<td>5.50</td>
<td>924.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

<table>
<thead>
<tr>
<th></th>
<th>code</th>
<th>description</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>168</td>
<td>214</td>
<td>Bag pulp</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

TOTAL $ 924.00
Discount (20 %) $ 184.80

Please pay this amount ----> $ 739.20

Terms -- net 30 days
2.0 % per month (24 % per annum) charged on overdue accounts
Invoice for analytical work reported on certificate(s) A8214279-001 to -003

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Code</th>
<th>Description</th>
<th>Unit</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>103</td>
<td>229</td>
<td>Partial ICP digestion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>553</td>
<td>Arsenic</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
<tr>
<td>556</td>
<td>Tungsten</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
<tr>
<td>560</td>
<td>Lead</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
<tr>
<td>561</td>
<td>Bismuth</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
<tr>
<td>568</td>
<td>Manganese</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
<tr>
<td>577</td>
<td>Copper</td>
<td>ppm (ICP)</td>
<td></td>
<td>5.50</td>
<td>566.50</td>
</tr>
</tbody>
</table>

Sample preparation and other charges :

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Code</th>
<th>Description</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>103</td>
<td>214</td>
<td>Bag pulp</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**TOTAL** $ 566.50
Discount (20%) $ 113.30

Please pay this amount ---> $ 453.20

Terms -- net 30 days
2.0% per month (24% per annum) charged on overdue accounts
**Invoice for analytical work reported on certificate(s) A8214280-001 to -007**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Code</th>
<th>Description</th>
<th>Unit</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>248</td>
<td>229</td>
<td>Partial ICP digestion</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>553</td>
<td>Arsenic ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td>1364.00</td>
</tr>
<tr>
<td></td>
<td>556</td>
<td>Tungsten ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>560</td>
<td>Lead ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>561</td>
<td>Bismuth ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>568</td>
<td>Manganese ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>577</td>
<td>Copper ppm (ICP)</td>
<td>ppm</td>
<td>5.50</td>
<td></td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Code</th>
<th>Description</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>248</td>
<td>214</td>
<td>Bag pulp</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**TOTAL** $1364.00
Discount (20%) $272.80

Please pay this amount ---> $1091.20

Terms -- net 30 days
2.0% per month (24% per annum) charged on overdue accounts
To: ARCHER CATHRO & ASSOC. (1981) LTD.,

1016-510 WEST HASTINGS
VANCOUVER, B.C.

V6B 1L8

Date : 8-NCV-82
P.O. # : NONE

Project CLP

Invoice for analytical work reported on certificate(s) A8214283-001 to -011

<table>
<thead>
<tr>
<th>Analysed for</th>
<th>Unit</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>404 022 - Sb</td>
<td>ppm</td>
<td>3.75</td>
<td>1515.00</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

| 404 214 - Bag pulp | 0.00 | 0.00 |

TOTAL $ 1515.00
Discount (20%) $ 303.00

Please pay this amount ---> $ 1212.00

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts
CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1

TELEPHONE: (604) 984-0221
TELEX: 043-52597

--- ANALYTICAL CHEMISTS --- GEOCHEMISTS --- REGISTERED ASSayers ---

*** INVOICE ***

To: ARCHER CATHRO & ASSOC. (1981) LTD.,
1016-510 WEST HASTINGS
VANCOUVER, B.C.
V6E 1L8

Invoice # : I8214284
Date : 11-NOV-82
P.O. #: NONE
Project CLP

Invoice for analytical work reported on certificate(s) A8214284-001 to -011
Analysed for:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>code</th>
<th>description</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>022</td>
<td>Sb ppm</td>
<td></td>
<td>3.75</td>
<td>1522.50</td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>code</th>
<th>description</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>214</td>
<td>Bag pulp</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Total $1522.50
Discount (20%) $304.50

Please pay this amount --> $1218.00

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts

MEMBER
CANADIAN TESTING ASSOCIATION
To: ARCHER CATHRO & ASSOC. (1981) LTD.,
1016-510 WEST HASTINGS
VANCOUVER, B.C.
V6B 1L8

Invoice # : 18214287
Date : 30-NOV-82
P.O. # : NONE
Project QLP

Invoice for analytical work reported on certificate(s) A8214287-001 to -005

<table>
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<th>code</th>
<th>description</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>176</td>
<td>229</td>
<td>ppm</td>
<td>Partial ICP digestion</td>
<td>-</td>
<td>553</td>
</tr>
<tr>
<td>553</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>556</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>561</td>
<td>Bismuth</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>577</td>
<td>Copper</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>578</td>
<td>Silver</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

| 176                  | 214      | Bag pulp | 0.00 | 0.00 |

TOTAL $ 968.00
Discount (20%) $ 193.60

Please pay this amount ----> $ 774.40

Terms -- net 30 days
2.0 % per month (24 % per annum) charged on overdue accounts
**CHEMEX LABS LTD.**

- ANALYTICAL CHEMISTS
- GEOCHEMISTS
- REGISTERED ASSAYERS

***INVOICE***

To: ARCHER CATHRO & ASSOC. (1981) LTD.,

1016-510 WEST HASTINGS
VANCOUVER, B.C.
V6B 1L8

Date: 30-NOV-82
P.O. #: NONE
Project: QLP

Invoice #: 18214288

Invoice for analytical work reported on certificate(s) A8214288-001 to -003

<table>
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<th>Quantity</th>
<th>code</th>
<th>description</th>
<th>unit</th>
<th>price</th>
<th>amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>229</td>
<td>ICP</td>
<td>Partial ICP digestion</td>
<td></td>
<td>660.00</td>
<td></td>
</tr>
<tr>
<td>553</td>
<td>Arsenic</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>556</td>
<td>Tungsten</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>Lead</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>561</td>
<td>Bismuth</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>577</td>
<td>Copper</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>578</td>
<td>Silver</td>
<td>ppm</td>
<td>(ICP)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample preparation and other charges:

| 120          | 214      | Bag pulp | 0.00 | 0.00 |

---

**TOTAL $ 660.00**

Discount (20%) $ 132.00

Please pay this amount ----> $ 528.00

Terms -- net 30 days
2.0 % per month (24 % per annum) charged on overdue accounts
MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
   (Here list claims on which work was actually done by number and name)
   QUINEE 1-4, YA 6B423-432
   11-14, YA 6B432-442
   25-26, YA 6B709-719
   21-23, YA 6B713-716

   situated at HULSE-ROY LAKE AREA
   in the WATSON LAKE Mining District, to the value of at least $3850.00

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)
   GEOCHEMICAL SURVEY
   BALANCE GROUP 1 $7,420
   LESS GROUP 2 $3,850
   BALANCE GROUP 2 $3,570

Sworn before me at WHITEHORSE, YUKON
this 17th day of DECEMBER 1982

Notary Public

M.P. PHILLIPS
Applicant.

091425
MAKE OATH AND SAY, THAT:

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
   (Here list claims on which work was actually done by number and name)
   QUINER 5-10 YAL8433-436
   15-20 YAL8443-448
   21-28 YAL8711-712

situated at HULSE-ROY LAKE AREA
in the WATSON LAKE Mining District, to the value of at least $3,850.00
in dollars, since the day of JUNE 1, 1982
Claims Sheet No. 350/12

28 28
11 10

listed above in Group 1

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested)

GROUP 1
16 YAL8433
19 YAL8445
18
20 YAL8448
21 YAL8711
27
26 YAL8712
23

14 CLAIMS AT 2½ YEARS EACH = 35.5 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

   GEOCHEMICAL SURVEY

   TOTAL EXPENDITURES $11,270
   LESS GROUP 1 3,850
   BALANCE GROUP 1 $7,420

Sworn before me at WHITEHORSE, YUKON this 17 day of DECEMBER 1982

Notary Public
MAKE OATH AND SAY THAT:

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
   (Here list claims on which work was actually done by number and name)
   QUIVER 21-24; YA 6449-452.

   situated at HOZE-ROV LAKE Claim Sheet No. 95B/12

   in the WATSON LAKE Mining District, to the value of at least $1100.00

   dollars, since the 11 day of JUNE, 1982 QUIVER 24

   to represent the following mineral claims under the authority of Grouping Certificate No. 3403

   (Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

   GROUP A QUIVER 21-24, YA 6449-452 INCLUSIVE

   TO COMMON DATE 11 MARCH

   4 CLAIMS AT 2 3/4 YEARS EACH = 11 CLAIM YEARS

3. The following is a detailed statement of such works:
   (Set out full particulars of the work done
   in the twelve months in which such work is required to be done, as shown by Section 53.)

   GEOCHEMICAL SURVEY

   BALANCE GROUP B $1,370

   LESS GROUP A $1,100

   BALANCE GROUP 4 $270

Sworn before me at WHITEHORSE, YUKON this 17 day of DECEMBER, 1982

M.P. PHILLIPS Applicant.
MAKE OATH AND SAY, THAT:

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
   (Here list claims on which work was actually done by number and name)
   QUIVER 33-40 YALB717-724,

   situated at HULSE BOY LAKE AREA Claim Sheet No. 25/512
   in the WATSON LAKE Mining District, to the value of at least $2000.00
   dollars, since the 28th day of JULY 1972.

   to represent the following mineral claim under the authority of Grouping Certificate No. 3402
   (Here list claims to be renewed in numerical order, by number and name, showing renewal period required).

   GROUP 3
   QUIVER 33 YALB717
   34 716
   35 719
   36 720
   37 721
   38 722
   39 723
   40 YALB724

   + TO COMMON DATE 11 MARCH
   8 CLAIMS AT 2½ YEARS EACH = 22 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done
   in the twelve months in which such work is required to be done, as shown by Section 58.)
   GEOCHEMICAL SURVEY

   BALANCE GROUP 2 $3570
   LESS GROUP 3 $2200
   BALANCE GROUP 3 $1370

Sworn before me at WHITEHORSE YUKON
this 17th day of DECEMBER 1982.

Notary Public