GEOLOGICAL BRANCH ASSESSMENT REPORT

REPORT OF AINEW GROUP OF MANERA CLAIMS

GREENWOOD MINING DIVISION

LATITUDE: 49° 02'
LONGITUDE: 118° 40'

NTS 82E/2W

Owners: Dentonia Resources Ltd., Kettle River Resources Ltd,

and D. Moore

Operators: Kerr Addison Mines Limted

703 - 1112 W. Pender Street, Vancouver, B.C. V6E 2S1

Claims: Midway, Midway Fr., M.F., Rainbow, Downhill,

Annex and Graham Camp.

Date of Field Work: September 10, 1984 - September 30, 1984.

Author: Fred Chow.

RECORDED

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GREENWOOD MINING DIVISION

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	Au	6a [`]	1=1000	ri 11
	Ag	6b	1=1000	n u
	As	6c	1=1000	n n
	Sb	6d	1=1000	и и

RAINBOW GROUP

INTRODUCTION

The southern half of the Greenwood map area was again the scene of intensified exploration activities during the past few years in the search for massive sulphide and precious metals.

Dentonia Resources Limited and Kettle River Resources acquired by staking and by agreement the ground known as the Rainbow Group which covered the Midway Mine workings, the Murray digs, Dry Lake and other prospect pits which were worked on during the early part of this century.

A serpentinite rock unit locally contains chalcedonic quartz veining and the latter occurs in abundance at the Picture Rock Quarry where active extraction of the quartz material has been carried out by a local lapidary. The concept of an epithermal vein carrying precious metals in the system is geologically favourable in the area surrounding the quarry.

Kerr Addison Mines Limited secured an agreement on August 31, 1984 to option the ground covered by the Rainbow Group of claims. This report describes the field program and the results obtained from the work done.

Property

The Rainbow group consists of 6 mineral claims and one fraction, totalling 80 units, and held as follows:

CLAIM NAME	UNITS	RECORD NO.	RECORD DATE	OWN	VER		
Annex	20	3402	Jan 14			ia 509 River	
Graham Camp	18	3403	Jan 14		"	**	н
Rainbow	20	3404	Jan 14		"	11	11
Downhill	8	3405	Jan 14		11	"	*1
Midway	9	472	Aug 10	D.	Mod	ore	
M.F.	4	769 .	Aug 10	"	•	•	
Midway Fr.	1	3401	Jan 14	"	,	•	

Location and Access

The Picture Rock Quarry is located within the SE quadrant of the Midway claim, the latter is situated on the SW side of the Rainbow group of mineral claims. This site is about 5 km northwest of the town of Midway, B.C., and is on a southern slope facing a broad, gently rolling pasture land. Elevation at the Quarry is 975m (3200') A.S.L.

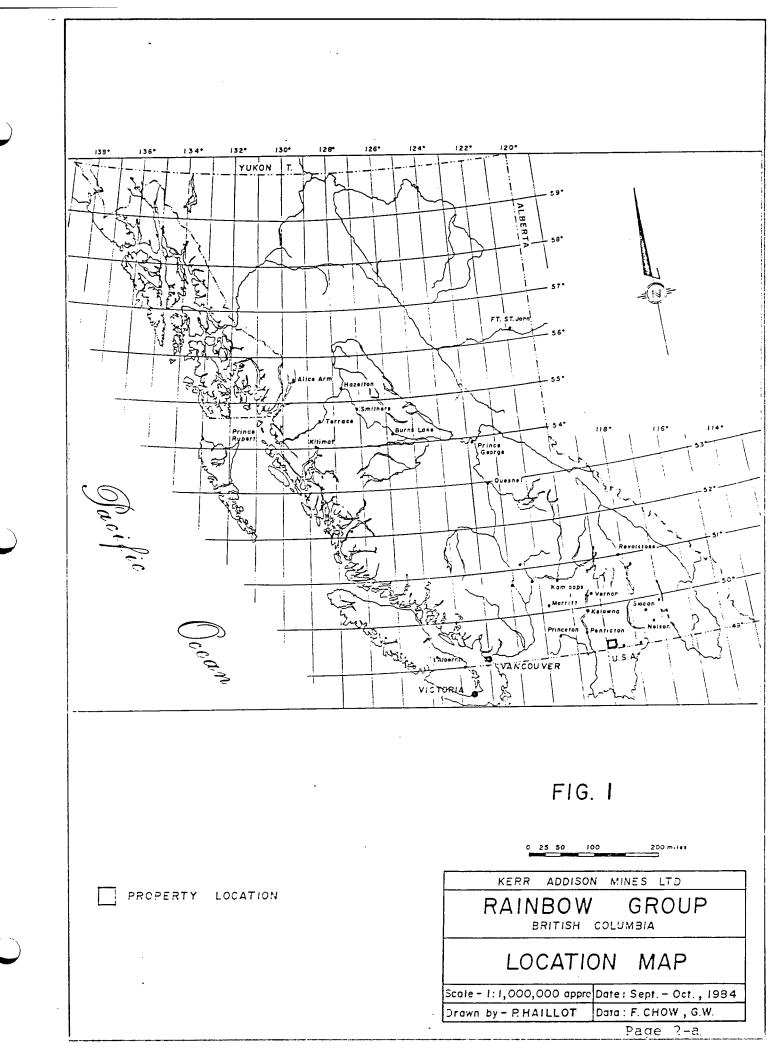
Access is from Highway 3 at Midway, B.C., along a dirt road via the Murray Gulch-Ingram Creek road, with a turn off to the north at about 1.3 km west of the fork in the road at the Murray Gulch turn-off. A 4-wheel drive vehicle is necessary for travelling during the wet season.

Previous Work

Many pits and diggings noted around the hillsides are evidence of mineral investigation done by the early prospectors. Later activity by D. Moore during the late 60's and early 70's was conducted at the Midway Mine, extracting shipping ore which contains Au and Ag in association with galena, sphalerite, chalcopyrite, and pyrite occuring in quartz carbonate veins. Most recent work was done by the Dentonia-Kettle River Joint Venture during the summer of 1983. A regional geological map was produced, then followed by detail mapping and a ground magnetic survey over the area surrounding the Midway Mine. Rock geochemical investigation was employed on a reconnaissance basis.

Kerr Addison Mines Limited Work Program

The main objective of Kerr Addison's work program is to explore for gold and silver mineralization on the Rainbow group of claims. Initial attention is to focus on the Picture Rock Quarry where chalcedonic quartz veins are exposed, then extend the investigation beyond the pits, and therefore search the entire property for similar indications of epithermal activity. A crew of 3-4 people participated.



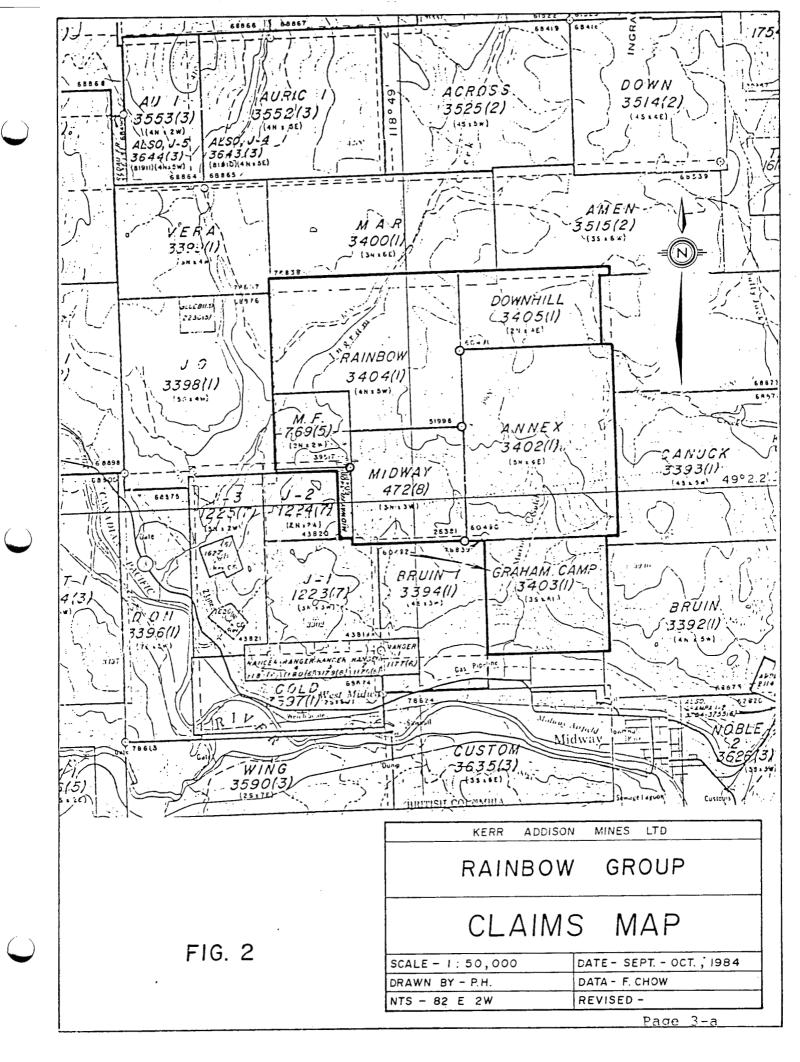
I. Control Grid

An east-west picketed grid covering the Midway Mine and Picture Rock Quarry had been established last season, with Cross Lines emplaced at 30m intervals, and stations at 30m spacings, by the Dentonia Kettle River Joint Venture Kerr Addison extended the 100 E Base Line (N-S) from Station 100N to Station 76N and the east-west cross lines were extended eastward from Station 139E to Station 202E on lines 118N to 100N inclusive. Further, six new crosslines are emplaced between 97N to 82N, starting @ B.L. 100E The E-W grid lines are turned off at the B.L. using a Woods right angle prism device. Line Stations are marked by 1"x2"x3' pickets at 30m intervals and the distances are chained using a 30m rope. The grid station number is written on the picket with a dark lumber crayon, and orange flagging is tied to each picket for ease in sighting. The additional grid lines total 4.02 km in length. The newly established cross lines are tied in to one another at the eastern end by compass bearing and chainage, using L 97N as the true E-W base.

A closed traverse surrounding the area of the Picture Rock Quarry was surveyed using compass and chain, tying in Lines 103N, 106N, and 109N and the station locations. This was done to gain greater accuracy of the geological plans.

II. Mapping and Sampling of Quarry Pits

Detail mapping of the quarry area was tied to the existing survey grid. This was followed by chip sampling the exposed rock faces. A total of 37 chip samples were taken, one grab sample at a contact, plus 9 samples of separate pieces



of quartz and of the altered serpentinite were randomly selected from the broken rock in the pits. Four elements, Au, Ag, As and Sb were analysed by rock geochemical techniques.

III. Soil Sampling

A preliminary check for precious metals and trace elements in the soils was done in July of 1984. Geochemistry analyses of the "B" horizon soils within the Quarry area and those near the Midway Mine area did not show any anomalous values in Au, Ag, As,Sb,or Hg. A further investigation was launched in September. An area 270m by 210m surrounding the Quarry, bounded by Lines 91N to 118N from 121E to 142E was selected for the soil sampling program. The soil samples were collected at 30m interval sites along the cross lines but at 15m intervals in the central area where the pits are located.

A total of 106 sites were sampled, and 77 "C" horizon samples plus 58 "B" horizon samples were collected. The depth of the "C" horizon ranges from 10cm to about 35cm, with a 50/50 ratio of ones greater or less than 20cm in depth. The "B" horizon samples were taken at a depth between 8cm-10cm with about 25% of the samples being deeper than 10cm. Four elements, Au, Ag, As, and Sb were analysed by soil geochemical techniques.

IV. Magnetic Survey

Several attempts to conduct a ground magnetic survey was hampered by magnetic storms and the program was cancelled. A Geometrics Portable Proton Magnetometer, Model G-816, with a sensitivity of \pm 1 gamma was used.

V. Detail Mapping of Quarry and Vicinity

Detail mapping was conducted on a scale of 1:1000 within the grid area. Data from R.E. Reid's map "Geology, Midway Mine Area", surveyed in Aug/83 was checked on the ground and incorporated into Kerr Addison's maps.

VI. Prospecting and Mapping

Air photos and 1=50,000 scale topographical maps were used for control in prospecting and mapping the seven claims of the Rainbow group. Standard surveying equipment such as a compass, altimeter and hip chain were used for tying in locations. Although special attention was placed in the search for precious metals in an epithermal system, nonetheless, prospecting and mapping was done in a thorough investigative manner for other economic minerals. Promising occurrences of chalcedonic quartz veining were sampled and analysed for Au, Ag, As and Sb content. Other mineralization were recorded but none was assayed.

GENERAL GEOLOGY

The Rainbow group of claims covers a portion of the northern arch of the serpentine belt which runs through the City of Paris (Lexington Mine), in the southeastern corner of the Greenwood map area, then northwesterly north of Midway and Rock Creek and then arches back southwesterly into Washington State. The serpentinite is of Jurassic age (Paper 19-29, Geology of the Greenwood Map-Area, N.W. Little, 1983) and is the oldest rock unit known on the property.

During the Cretaceous period or early Tertiary time a suite of acidic intrusions which forms a body about 2km x 2km in size was emplaced inside (south) the above mentioned segment of the serpentinite arch. Kettle River sediments deposited during the Early Tertiary period were later overlain by lava flows of the Marron Formation. Subsequent to the latter event, rocks equivalent to the lavas intruded the sediments and lavas. The Kettle River and Marron Formations occupy the entire northern half and eastern half of the Rainbow property.

GEOLOGY of PICTURE ROCK QUARRY and VICINITY

The granitic rocks, composing mostly of diorite with lesser amounts of monzonite and quartz-eye porphyry occupy most of the area within the picketed grid. Serpentinite form as irregular-shaped bodies within the northern boundary of the granitic mass.

Almost all of the serpentinite has been highly altered except for the large outcroppings on Lines 112N to 115N between 149E-162E, and on the bluffs about 100m NE of L 142N/139E. Other outcrops of unaltered serpentinite were found but the occurrences are generally small and are more often noted to occur along with or near altered serpentinites.

Outcrops of siltstone lie near the east end of the grid lines at about 187E between Lines 106N to 115N.

Altered Serpentinites

The altered serpentinites are gneissic silica-carbonate rocks with lenses of fine-grained silicic mafics in brown ankerite-siderite. These lenses often appear boudinaged or mylonitic. Generally, these rocks contain approximately 30 - 60% mafic lenses and their surfaces weathers to a rusty color.

The unit exhibits a wavy foliation with small scale, shallow open folds which have no general trend and shallow dips - less than 50 degrees.

Minor lenses of pyroxinite and siltstone are sometimes found within the serpentinite units.

An outcrop of diorite occurs at 122.5N/119.5E within the serpentinite unit, likely a dyke off the intrusives on the west or an apophysis from an underlying granitic body. Diorite is exposed in the three quarry pits on Lines 106N and 109N, and the rock is fresh looking.

The serpentinite unit is entirely bounded by intrusives, dominantly diorite, and appears to be pendants on top of the granitic mass. The alteration of the serpentinite could have occurred during the emplacement of the granitic mass, although no evidence was found to support this event. It is more probable that the alteration occurred before the intrusion.

Quartz Veining

Chalcedonic quartz veining is prominent only near serpentinite-intrusive contacts and is found abundant only at the Picture Rock Quarry and at the old adits located about 500m due north of the Quarry (156N/128E Grid System). All of the serpentinite on the property was prospected and found to be relatively dry except the above mentioned areas.

The chalcedonic quartz is usually white or light gray and most often is banded, although in the Picture Rock Quarry a pale green quartz is common. The quartz is mainly cryptocrystalline but not cherty and ranges to a slightly gritty texture.

In the quarry, about 15% of the thicker veins (greater than lcm) locally contains fragments of ankerite-siderite and sometimes fragments of light gray chalcedonic quartz. Both the ankerite-siderite and quartz fragments occur in angular and sub-angular to rounded pieces. The quartz fragments vary from about lmm to 3cm in size and the ankerite-siderite fragments vary from about lmm to 30cm in size. The ankerite-siderite are remnants or pieces fallen off the walls of the host rock, and some pieces exhibit chalcedonic quartz veining contemporaneous with the main veining. The chalcedonic quartz fragments suggest at least two periods of silica injection.

One other location where ankerite-siderite fragments are noted in a chalcedonic quartz vein is near L 101N/165E, along a diorite-altered serpentinite contact.

Chalcedonic quartz veining was found within the exposed diorite in the pit just south of L 109N/130E, and noted again in diorite in the pit at L 106N/133E. At the latter location, the quartz veins extends across the serpentinite/diorite contact with no apparent disemplacement. Ankerite-siderite fragments were noted in most of the veins. These evidences show that fracturing and veining occurred after or immediately following the emplacement of the intrusion. The two rocks may be the only source for the silica Au, Ag, As and Sb.

No major structure was found to indicate a break or vent for the source of the chalcedonic quartz in the quarry. No sulphides or other economical minerals were noted.

In the Picture Rock Quarry, the dominant quartz veins are singular veins up to 50cm in thickness and sets of multiple, parallel, hairline to a few cm. thick veinlets interbanded with altered serpentinite. The latter veins vary from 10-45 cm. apart and often display quartz-filled fractures in the altered serpentinite. These veins strike approximately due north to N20W and dip about 25° - 42° east. The next prominent veins are ones which strike N25-72E with shallow dips of 12-33° east and ones which strike N20E - N5W and dip steeply at 60-80° east. These veins are less thick and more widely separated. Other veins are generally singular veins, few in number and with varying altitudes.

Two old adits, lying immediately one above the other, at about 500m north of the Quarry, is the location of a shear zone within altered serpentinite. The shear has been infilled wilth quartz, contains ankerite-siderite fragments, similar to veins at the quarry except that there is less chalcedony in the system.

The wall rock is slightly fractured and the latter infilled wilth chalcedonic quartz. The zone is about 50cm wide at the lower adit, and is about 80cm wide at the upper adit which is about 10m higher, but the zone pinches within 5m above.

GEOCHEMISTRY

1-A Rock Geochemistry

Rock samples were analysed by Chemex Labs Ltd. of North Vancouver, B.C. Lab preparation of the samples includes primary and secondary jaw crushing, tertiary cone crushing, rotary pulverize and screen to -100 mesh and the screen is examined for metallics. Method for geochemical analyses for gold involves fire assay preconcentration with atomic absorption analysis; for silver: aqua regia digestion with atomic absorption analyses; for arsenic: perchloric-nitric acid digestion and a flameless atomic absorption finish; for antimony: hydrochloric acid-postassium chlorate digestion and a TOPO-MIBK extraction and a atomic absorption finish; for mercury: nitric-hydrochloric digestion and a flameless atomic absorption finish.

1-B Assay Results

A total of 37 chip samples obtained from the quarry pits were analysed for Au, Ag, As and Sb content. Four Au assays are in the 200-540 ppb range, two assays of 100-105 ppb, and the remaining 30 has two that are greater than 50 ppb Au. Ag assays are generally low, the higher values being 2.2 and 5.5 ppm, and the remaining assays are between 0.1 to 1.7 ppm Ag. As assays are mostly anomalous, 18 high values ranges from 210-650 ppm, 8 values between 50-210 ppm, with he remaining 11 ranging from 6-50 ppm As. Sb assays show coincident values with

As; three assays are in the 81-105 ppm range, nine between 44-80 ppm Sb, and the remaining 25 assays are between 1.0 to 38 ppm Sb. None of the Sb values are considered anomalous as the average value of Sb in altered serpentinite was found earlier to be about 40 ppm Hg.

In addition, one chip sample of a chalcedonic quartz vein outcrop at 103N/129.7E, immediately southwest of the southernmost quarry pit assayed 7300 ppb Au, 31 ppm Ag, 360 ppm As, and 44.0 ppm Sb over a thickness of 35cm. The Au and Ag assays are exceptionally high compared to others on the Rainbow property.

From each of the five pits in the quarry, a random sampling of the broken quartz was obtained and the assays show slightly to moderately anomalous values (115-740 ppb) in gold, low to slightly anomalous values (0.9 to 4.6 ppm) in Ag, slightly to moderately anomalous vaues (69-320 ppm) in As, low to average values (9.2 to 52 ppm) in Sb, and only average values (30 to 40 ppb) in Hg.

Five selected specimens of quartz from the pits were analysed and compared to the random sampling, the results show that the specimens gave lower assays in Au; similar value for Ag; erratic low and highs for As and slightly higher values in Sb. Three selected specimens of the ankerite-siderite including the fragments, all of which are in contact with the vein were analysed. The results indicate that the ankerite-siderite contains more As and Sb than the quartz, and the latter contains more Au and Ag.

Three chip samples of the altered serpentinite, taken at separate locations distant from the quarry, were analysed for Au, Ag, As, Sb and Hg and their assays were used for background values. All the elements except Hg can be used as trace elements in a geochemical search for precious metals within the serpentinite belt on the Rainbow property.

Three other locations on the property where noticeable chalcedonic quartz veining occurred were sampled and analysed.

These are as follows:

127N/88E trench in altered serpentinite, Assays 500 ppb Au,l.4 ppm Ag, 240 ppm As,l0.6 ppm Sb.

101N/154E outcrop in altered serpentinite; Assays 60 ppb Au, 0.1 ppm Ag, 41 ppm As, 5.6 ppm Sb.

100N/196E outcrop in altered serpentinite; Assays 40 ppm Au, 1.2 ppm Ag, 160 ppm As, 6.6 ppm Sb.

See Fig. 3 and Fig. 4, Sheet 1 and 2.

2-A. Soil Geochemistry

Soil samples were analysed by Chemex Labs Ltd. of North Vancouver, B.C. Lab preparation procedure involves drying the samples and sieving, retaining the minus 80 mesh screen for analyses. Methods and procedure for the geochemical analyses are as follows:

For Au: fire assay preconcentration with atomic absorption analyses;

For Ag: aqua regia digestion

For As: perchloric-nitric acid digestion and a flameless A.A. finish;

For Sb: hydrochloric acid-potassium chlorate digestion and a TOPO-MIBK extraction and A.A. finish.

2-B.Assay Results

- 1. Gold Assay results show a negative response to the gold content of the quartz veins in the quarry area. Most values are in the less than 5 to 10 ppb Au range. A slight indication of gold in the soils are found upslope from the pits, on Line 112 N (see Fig. 6a), where values of 35-50 ppb Au were obtained.
- Silver Assay results show a similar negative response as the gold assays (see Fig. 6b)

- 3. Arsenic Assay results indicate a low order anomaly about 100m N-S by 140m E-W in size, outlined by the 20 ppm As "B" horizon contour (see Fig. 6c). The 60 ppm As contour, 40m by 60m in size, includes three values greater than 60 ppm including the highest value of 230 ppm. The "C" horizon soils contain slightly less arsenic and similar value contours would outline a smaller anomaly. The contours outline an area fanning about 70m downslope from the pits.
- 4. Antimony Assay results show a similar lower order anomaly as the As assays, likewise the fan-shape contours, though slightly larger in size. The central core of the anomaly is outlined by the 4 ppm Sb "B" horizon contour (see Fig. 6d), within which the highest value is 13 ppm Sb. The "C" horizon soils contain slightly less antimony than the "B" horizon soils and therefore would outline a smaller anomaly.

Conclusions

Gold and silver mineralization occurs in the chalcedonic quartz veins on the Rainbow property. These veins are found only within the altered serpentinite unit although they have been found to extend into the granitic rock at the contact.

The chalcedonic quartz veins occur at or near the altered serpentinite/granitic rock contact, the best exposure being the Picture Rock Quarry and immediate area. The evidence of veins, containing fragments of the altered serpentinite, crosscutting the two rock units indicate veining at least one stage, occurred after the intrusion.

Fragments of chalcedonic quartz of a different color and sometimes different texture than the main vein, plus fragments of the ankeritesiderite wall rock - both rimmed and not rimmed by quartz, are found within the quartz vein. This evidence point to a least two stages of silica deposition.

Either arsenic and/or antimony will give a positive response as trace elements in the search for precious metals by soil geochemistry, on the Rainbow property.

STATEMENT OF COSTS

-						
1		W	а	α	0	S

	F. Chow -	Sept. 6/84, Sept. 10-30/84 Oct. 1-3/84, Dec /84, Jan 2/85,	fieldwork, drafting, drafting,			
	\$			-	32 days @ \$160	\$5120.
	G. Wingert	t- Sept 10-30/84, Oct 1 - 5/84,			19 days 5 days 24 days @ \$98	\$2532 .
			•		24 days e 470	Ų2332 ·
	J. Hobart	Sept 11-30/84,	fieldwork	20	days @ \$93	\$1260.
	S. Davies	<pre>Sept 11-30/84,</pre>	fieldwork	15	days @ \$69	\$1035
	P. Haillot	t - Sept 5-6/84,	drafting	2	days @ \$115	\$ 230
2.	Food and I	Lodging				\$1586
3.	Truck Rent	tal				\$1127
4.	Air Transp	portation				\$ 372
5.	Assaying					\$2899
6.	Office Sur	pplies				\$ 168
7.	Communicat	tion and Shippi	ng		•	\$ 109
			65.33		Total	\$16,258.

Statement of Qualifications

- I, Fred Chow of 945 15th Street, West Vancouver, British Columbia, hereby certify that:
- I conducted the geological mapping and sampling program described in this report;
- I completed the Mining Engineering Course at the University of British Columbia, 1953;
- 3. I have been practising my profession as a mine engineer, mine and exploration geologist in Eastern and Western Canada since 1953.
- 4. The work described herein is based on field work carried out between September 10 30, 1984.
- 5. I am employed by Kerr Addison Mines Limited as Project Geologist, based in VAncouver, B.C.

March 28, 1985 Vancouver, B.C. Fred Chow

Certificate

- I, Raymond A. Dujardin, with a business address of 703 -1112 West Pender Street, Vancouver, B.C., do hereby certify that:
- 1. I am a Professional Engineer, registered with the Association of Professional Engineers in the Province of British Columbia;
- 2. I am a graduate of the University of London, England.
- 3. I have been engaged in mineral exploration in South America, Europe, Australia and Eastern and Western Canada since 1954.
- 4. This report is based on personal examination and overall supervision of field work carried out between September 10 30, 1984.
- 5. I am employed by Kerr Addison Mines Limited as Regional Exploration Manager.
- 6. Written permission is required to use this report or any part of it in a prospectus or other statements of material facts.

Vancouver, B.C. March 28, 1985 R. A. Dujardin

P. Eng.

