REPORT ON THE ART PROPERTY CARIBOO MINING DIVISION, BRITISH COLUMBIA

LOCATION

N.T.S.: 93A/2E LATITUDE: 52° 00'N LONGITUDE: 120° 37'W

CLAIMS

ART 1 (#359881) ART 2 (#359882) ART 3 (#359883) ART 4 (#359884)

FOR

MANDALAY RESOURCES CORPORATION 501-595 HOWE STREET VANCOUVER, B.C. V6C 2T5

<u>BY</u>

Dr. J. (Duro) Adamec, P. Geo. 48-1745 FELL AVENUE NORTH VANCOUVER, B. O. LOGICAL SURVEY BRANCH ASSESSMENT REPORT

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SUMMARY

The Art mineral property of Mandalay Resources Corporation, comprising four units, is situated approximately 75 kilometers northeast of 100 Mile House near Canim Lake in central British Columbia. It has received reconnaissance exploration for base metals in 1997 and more comprehensive exploration for precious and/or base metals in 1998.

The property is situated in the Quesnel Trough, a subdivision of the Intermontane belt, which is composed of Triassic to Jurassic volcanic and sedimentary rocks and intruded by various plutons, ranging in age from Triassic to Cretaceous.

The exploration results indicate the presence of gold in geologically significant settings. Geochemical surveys and geological mapping, with limited support from magnetic and VLF-EM geophysical surveys, have established several "target areas" that warrant more detailed and definitive exploration of mechanized trenching and diamond drilling.

INTRODUCTION

Mandalay Resources Corporation conducted a geological-geophysicalgeochemical exploration program on the Art property, located near Canim Lake in the Cariboo Mining District of British Columbia.

Between June and October 1998, a five member crew conducted the above program. The program was under the supervision of the writer.

This report is based on the 1998 assessment work done on the Art claims and on a review of previous field program, summarizes the results, and recommends additional exploration on the property.

Location and Access

The Art property is located in the Cariboo Mining Division approximately 75 kilometers of 100 Mile House and some 30 kilometers northeast of Eagle Creek, a small settlement on the north side of Canim Lake (Figures 1).

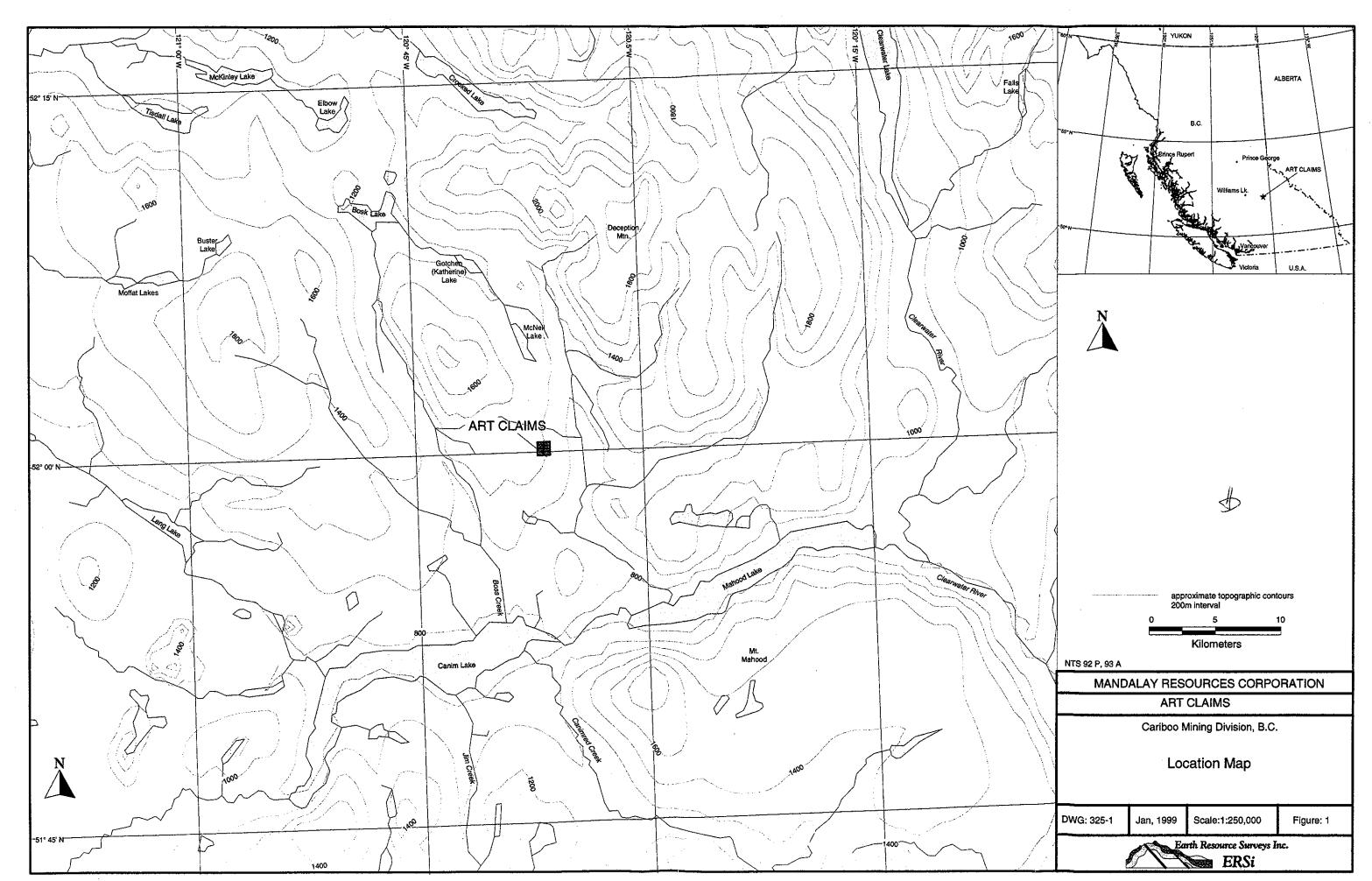
The property is readily accessible from 100 Mile House, located on Highway 97, 50 kilometers southeast of Williams Lake. It is approximately 40 kilometers by paved road to Eagle Creek and another 30 kilometers to the property via good gravel roads and logging roads.

Topography and Vegetation

Topography on the claims is very subdued, consisting of low, rounded hills rising only 75-100 meters above the otherwise gently dipping terrain. Elevations range from approximately 1,250 meters in the central part of the claims to approximately 1,350 meters at the heights of land.

Great part of the claims has been recently commercially logged, part of the claims area is covered by matures stands of cedar, spruce, and fir. Areas logged in the past; these are now covered by thick second growth conifers alder, willow, devil s club and wide variety of herbaceous plants.

Small streams and local swamps provide ample water for exploration purposes.



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Property

The Art property consists of four two- post metric units located in Cariboo Mining Division (Figure 2). The claims are held by Dave Ridley, General Delivery, Eagle Creek, B.C. Mandalay Resources Corporation signed an option agreement with the right to earn a 100% interest in the property. Claim details are as follows:

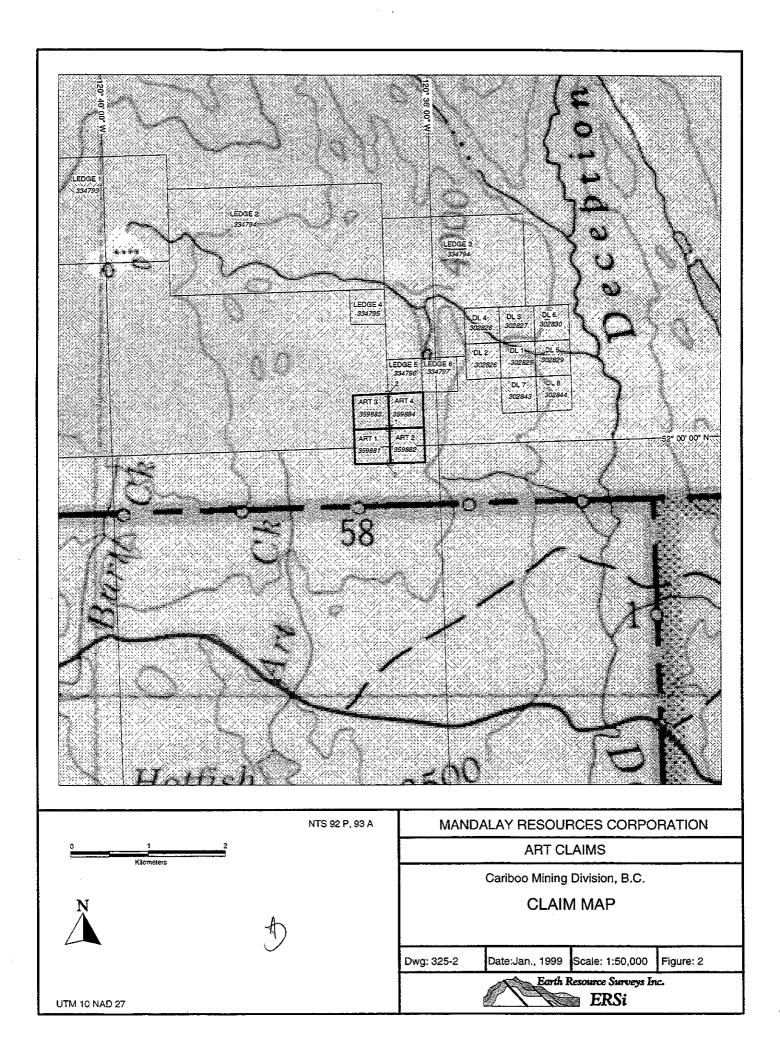
Claim	No. of Units	Record	Anniversary
<u>Name</u>	Unit	Number	Date
Art 1	1	359881	Oct.20, 2001
Art 2	1	359882	Oct.20, 2001
Art 3	1	359883	Oct.20, 2001
Art 4	1	359884	Oct.20, 2001

History and Previous Work

Gold mining in the Cariboo District originated with the discovery of placer gold in 1860 at Quesnel Forks, Keithley Creek and Antler Creek and, in 1861, the more spectacular discoveries at Williams, Grouse, Lowhee and Lightning creeks. Placer activity peaked in 1863 but it continued in a significant manner for many years thereafter. It received a boost in 1879 when hydraulic mining was introduced. In later years underground mining was carried out as well as mechanized methods of dredging such as the use of draglines and bulldozers. After the early years of this century, placer mining activity became sporadic and was generally conducted on a small scale.

Lode mining followed in the footsteps of placer mining. Earliest exploration of quartz veins (lodes) was in the early 1870's. It has been stated that "the history of lode-gold mining in the Cariboo District was one of repeated unsuccessful ventures from the early 1870's until 1933, and since then pulses of intense activity followed by period of quiescence", (Sutherland Brown, B.C.D.M., Bull, No 38). In 1933, the Cariboo Gold Quartz Mine was brought into production.

During the late 1960's to mid 1970's, the Cariboo district was actively explored for porphyry copper mineralization. Gibraltar Mines was developed during this period and the Cariboo Bell or Mt. Polley property (48.5 mt of 0.16 g/t gold and 0.44% copper) explored in detail. Boss Mountain molybdenum mine (4.17 mt of 0.23% molybdenum) was also brought into production during this period. Frasergold property near Crooked Lake(20 mt of 2.5 g/t gold) and CPW property in the Likely area (890,000 tons of 2.5 g/t gold) lies within a thick package of deep water sediments collectivelly termed the "black phyllites".



 In the past few years, all of the areas of known lode mineralization in the district have been staked by mining and exploration companies. Many companies are looking for gold but some are also seeking base metals or tungsten. Surface exploration is being conducted but, with possible exceptions, no underground exploration is being done. The surface work consists of geological mapping, geophysical and geochemical surveys, trenching, stripping, and diamond or rotary drilling.

The Art property, consisting of Art 1, 2, 3, 4 claims, was staked by David Ridley. A small grid was sampled and limited geological mapping was done in 1997. The Art 1-4 location line was employed as a baseline in setting up the soil grid. Lines were run north and south of the initial post and one hundred meters east and west from it. Three lines were run to the north with an interval of 100 meters between lines 51N and 52N with an interval of 50 meters between baseline and line 51N. The same method was used for lines run to the south of the IP. A total of 51 samples were collected and analyzed. Program returned values anomalous in arsenic and sporadically high in copper and gold. Rock sample ART97; DR4 returned values of 1950 ppb gold and 210 ppm copper.

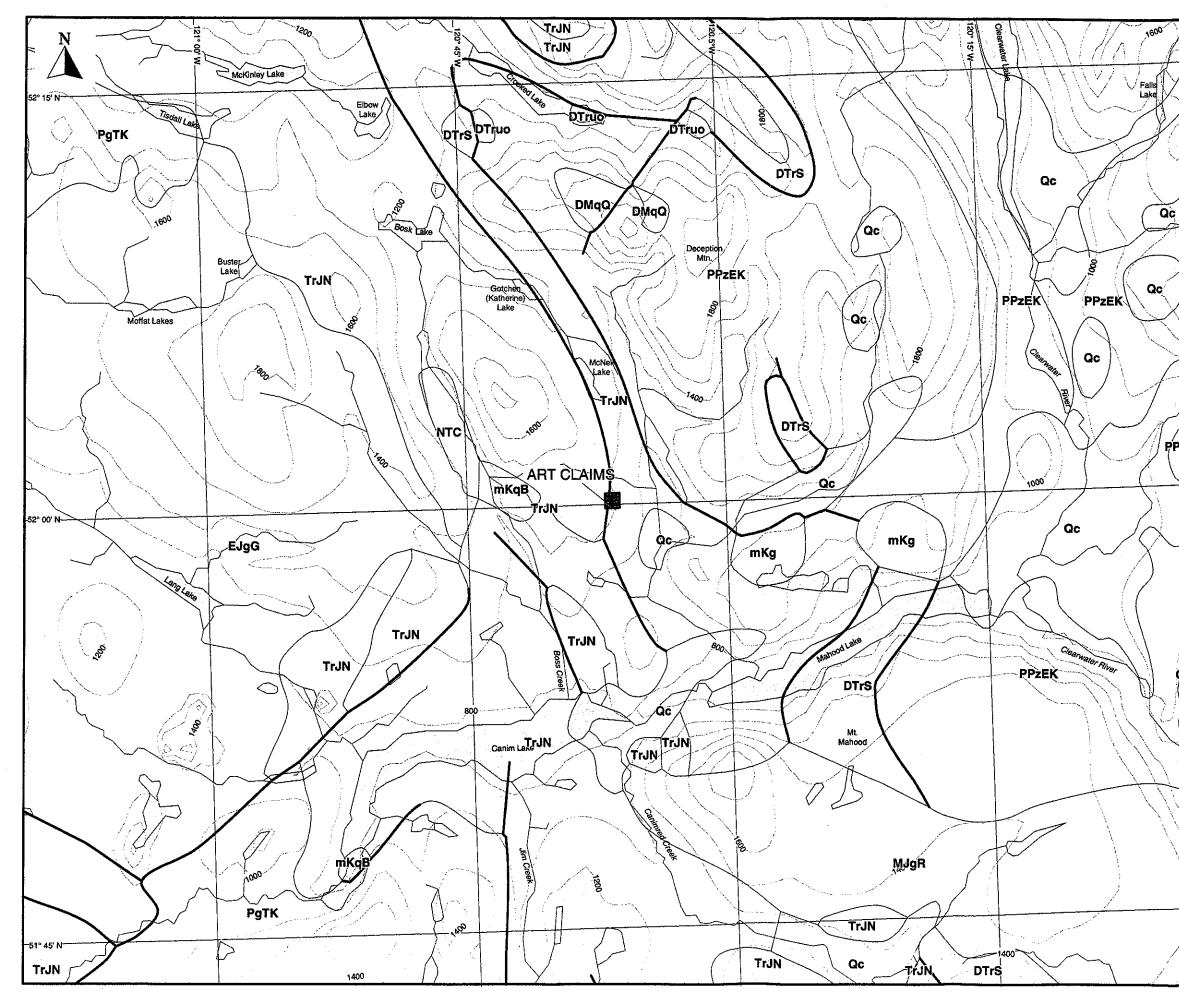
Results from this preliminary survey, along with indications of favorable results being obtained on nearby properties, were sufficient evidence to justify a more thorough examination of the property in 1998.

GEOLOGY

Regional Geology

The Art property examined in this program lies in the Quesnel Trough, a subdivision of the Intermontane belt, which is composed of Triassic to Jurassic volcanic and sedimentary rocks and intruded by various plutons, ranging in age from Triassic to Cretaceous (Figure 3).

The oldest rocks in the vicinity of the Deception Ledge property are comprised by quartz-mica schist, micaceous quartzite and quartz-feldspar gneiss of the Lower Cambrian Snowshoe Formation (Cariboo group; Struik, L.C., 1988). These rocks are found east of the property and from many of the high mountain peaks in this area.



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The Permian-Mississippian rocks of the Redfern Complex; consisting of amphibolite, gabbro, norite, serpentinite, pyroxenite and peridotite, outcrops east of the property as well. These rocks have been correlated to the Crooked Amphibolite Unit of Bloodgood (1990) and is interpreted to represent the imbricated boundary between Quesnellia and Barkerville (Cariboo?) terranes.

A thick package of Triassic to Jurassic volcanic and sediments from the bulk of rocks near the property as well as underlying a large area to the west. These rocks are intruded by stocks of Cretaceous intrusions of granodiorite, diorite and quartz monzonite as well as by Triassic to Jurassic Takomkane batholith.

#### Recent

glacial alluvium and fluvial deposits

### **Miocene**

Chilkotin Group plateau basalts

#### **Cretaceous**

intrusive - stocks, plugs, dykes or sills usually quartz - feldspar rich granodiorite, quartz diorite

#### **Triassic to Jurassic**

Takomkane batholith diorite, granodiorite, with a border phase of gabbro, hornblende and lesser syenite

#### **Triassic to Jurassic**

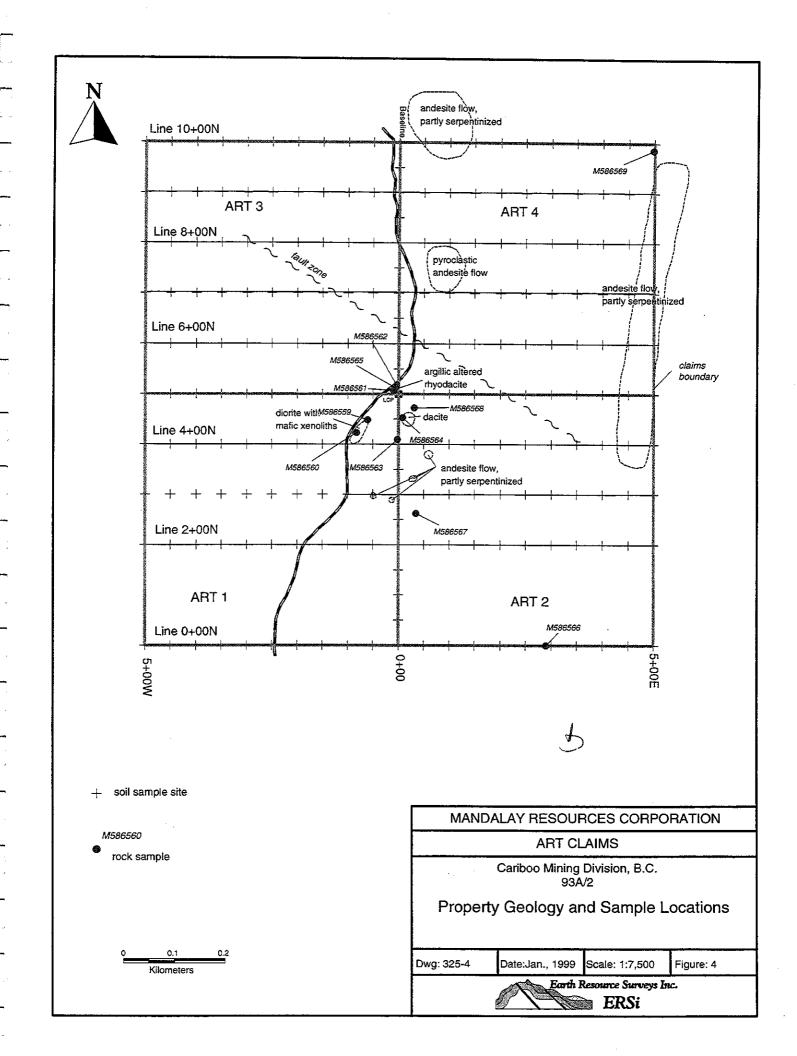
Nicola Group volcanic, flows, breccia, sediments, with lesser limestone and argillite

#### **Triassic**

Quesnel River Group (metasedimentary sequence) graphitic black phyllites and slate

### Permian - Mississipian

Redfern Complex (correlated to Crooked Amphibolite Unit) amphibolite, gabbro, norite, serpentinite, pyroxenite, peridotite



#### Lower Cambrian

Snowshoe Group (Cariboo Group) quartz-mica schist, gneiss: parts equivalent to younger Eagle Bay Assemblage

### **Property Geology**

The geology of the 1998 grid area was mapped by geologist E. Ronyecz as shown in Figure 4.

The Art property is predominantly underlain by pyroclastic porphyritic augite andesite flows to the west that are interbedded with argillite, shale and minor limestone that are cut by various andesite to basaltic dikes and a granodirite-quartz-diorite stock. This shallow marine sequence deepening to the east is summarized below:

### Pyroclastic andesite flow (porphyritic augite)

Greenish pyroclastic rock composed of coarse grained augite crystals in a fine grained plagioclase-rich groundmass. Calcite and serpentine fill fractures and vugs in the matrix. Weathered surfaces show clasts while the fresh surfaces show a homogeneous interior.

#### **Rhyo-dacite**

Light gray - blue, fine grained quartz-plagioclase groundmass with disseminated sulphides.

#### <u>Phyllite</u>

Black to dark gray, carbonaceous, layered with knots locally, locally graphitic. Crosscut by quartz veins with siderite and rare sulphides.

#### Quartz diorite

Coarse grained, pepper and salt texture, hornblende crystals prominent with rare disseminated sulphides. Intrudes and mixes with older rocks.

### **STRUCTURES**

The bedding of the phyllite in the east trends at  $120^{\circ}$ , then trending up to  $160^{\circ}$  further upstream and then trending again at  $120^{\circ}$  with the dip varying from  $50^{\circ}$  NE to subvertical. These rocks are cut by structures of various orientations but are the determining factor in the topography. Weak  $090-110^{\circ}/60-90^{\circ}$  N faults and felsic dikes crosscut the phyllite.

### ALTERATION AND MINERALIZATION

The volcanic rocks are lightly chlorite-epidote-saussurite altered throughout the property with rare silicified zones. Mineralization consisting of bornite, chalcopyrite and pyrite is rare and occurs in association with areas of epithermal alteration. Mariposite occurs as small knots in volcanic with minor carbonates giving rise to the listwanite model. Quartz-carbonate veins crosscut and parallel the phyllites with rare crosscutting veins carrying sulphide mineralization.

A total of five rock chip and six grab samples were collected by E. Ronyecz. Field description of rock samples could be find in Appendix III. Grab sample M 586559 from rhyo-dacite outcrop with up to 0.5% pyrite, trace arsenopyrite and bornite contained the highest gold value of 281 ppb. This sample site has been unsuccessfully hand trenched to obtain more representative sample. One meter chip samples m 586562 and m 586 565, from argillic altered rhyo-dacite outcrop contained strongly elevated values of 47 ppb and 49 ppb gold, respectively.

Sample # *	Au (ppb)	Ag (ppm)	As(ppm)	Cu(ppm)	Ni(ppm)
559	281	1.0	6	142	
560	4	0.3	4	40	24
561	10	0.3 ·	143	18	8
562	47	0.3	4994	11	8
563	5	0.3	50	19	66
564	2	0.3	30	8	3
565	49	0.6	2961	9	10
566	2	1.1	17	82	14
567	2	0.3	7	82	58
568	5	0.3	23	188	9
569	1	0.3	31	78	184

Summary of rock sample results:

* starts with prefix M 586

### EXPLORATION PROGRAM

The 1998 exploration program was conducted on the Art property between June 1, and October 19, 1998. A surveyed grid was laid out to cover Art 1, 2, 3 and Art 4 claims. A 1000 meters of slope corrected baseline, trending approximately north, was marked out with blazing, flagging and some cutting. Stations were marked at 100 meter intervals to identify each grid line, which was run approximately due east and west from the baseline for 500 meters. Stations were marked along each line at 50 meter intervals with flagging tape bearing the co-ordinates of that specific point.

### **GEOCHEMICAL SURVEY**

A total of 189 soil samples was collected along 10,6 km of grid lines. All samples were taken from the "B" horizon, using a mattock, from depths 15-40 cm. Each sample was placed in a kraft paper envelope, marked as to its grid location and stored for shipment to the assay laboratory.

Only 72 samples were shipped to Acme Analytical Laboratories Ltd., 852 East Hastings Street, Vancouver, B. C. and analyzed for 30 elements by I.C.P. method and by fire assay for the gold content. Remaining samples will be assayed in short time.

Gold values in soil samples (72) varied from 1 ppb to 208 ppb with 8 sample results over 40 ppb considered anomalous. Gold values are plotted on Figure 6. The strongest gold response of 208 ppb was obtained from station with coordinates LA 2+00N 5+00W. Geochemical results show that anomalous gold values tend to occur with anomalous zinc and barium.

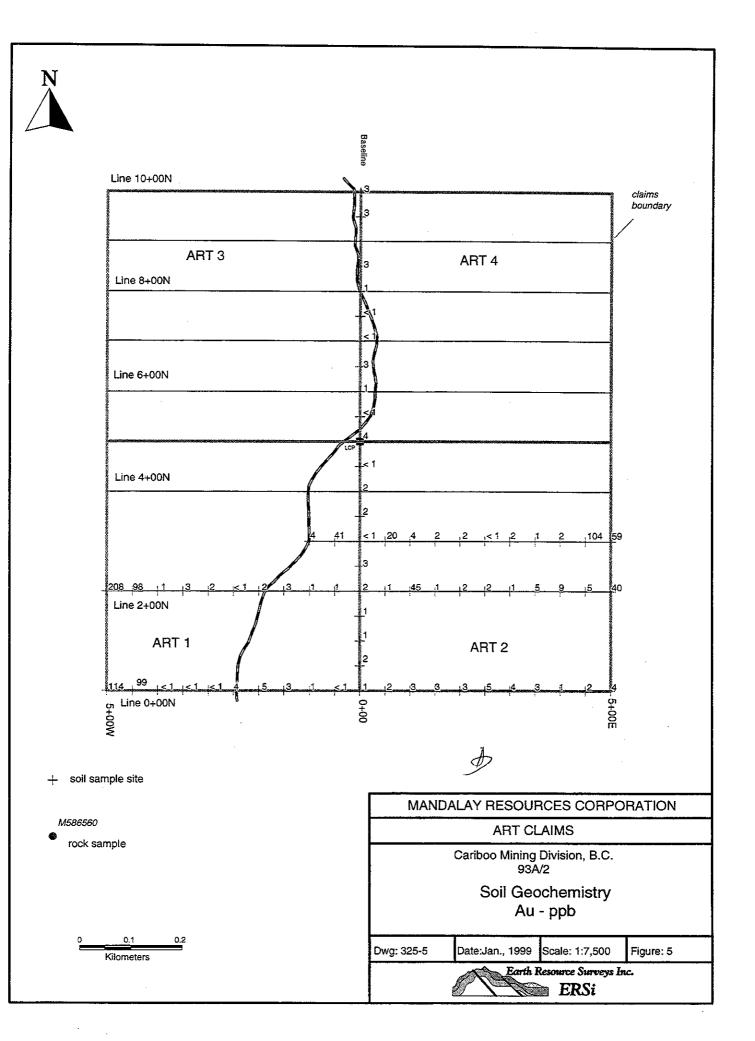
Zinc values in 1998 soil samples varied from 42 ppm to558 ppm with values over100 ppm considered anomalous.

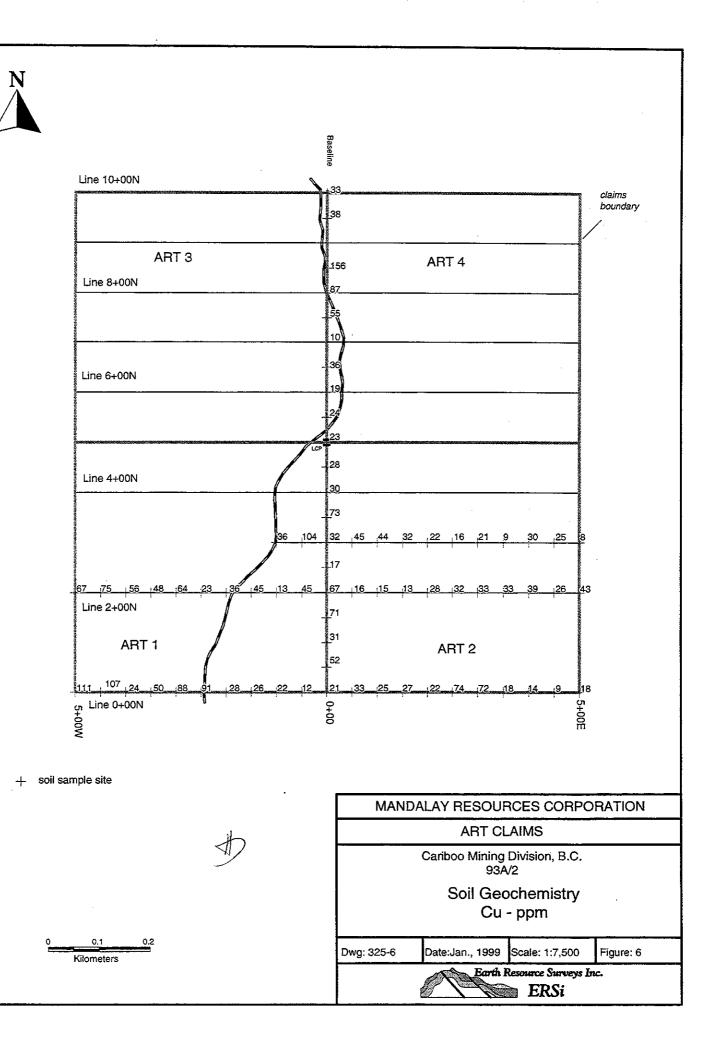
Silver values in soil samples varied from 0.3 ppm to 5.00 ppm with 14 values over 1.00 ppm considered anomalous.

Arsenic and molybdenum assays did not appear to be significant. Barium values were recorded from 60 ppm to 849 ppm

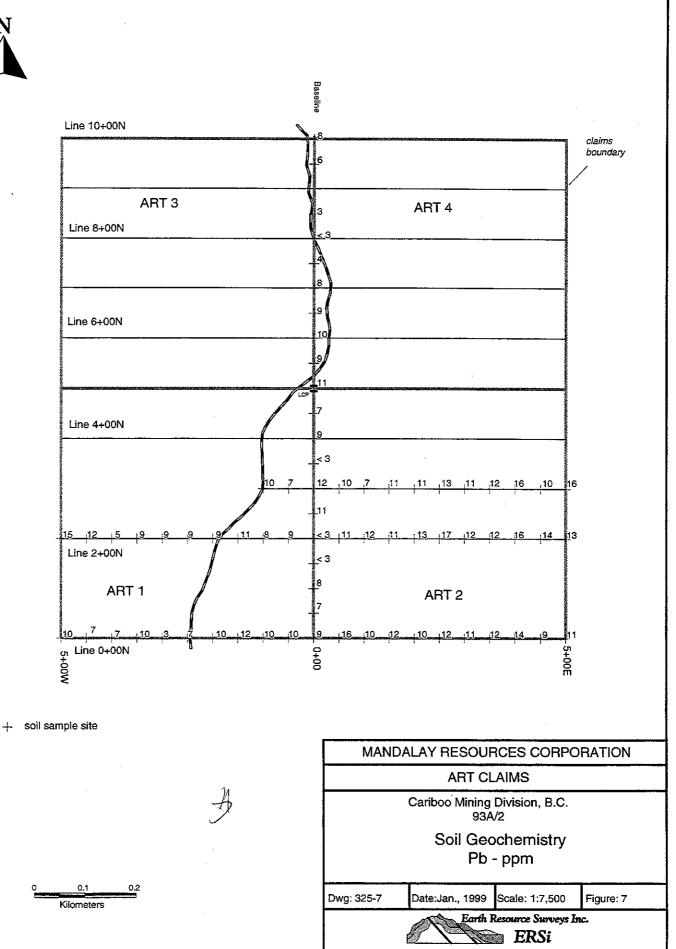
Geochemical data are presented in Appendix II.

Geochemical maps for the Art accompany this report as Figures 5 through 10.

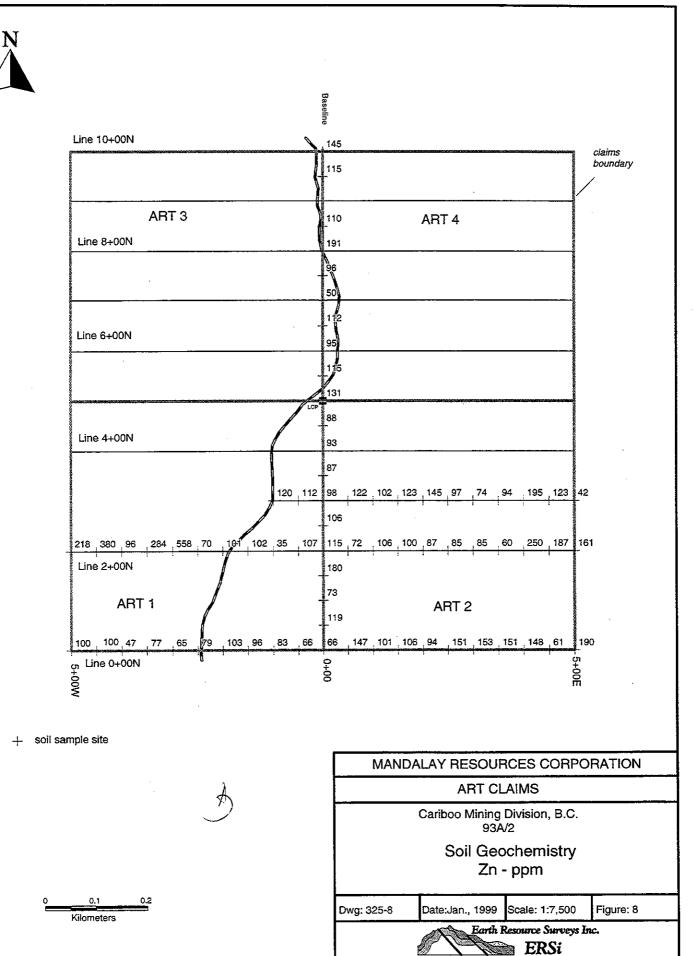




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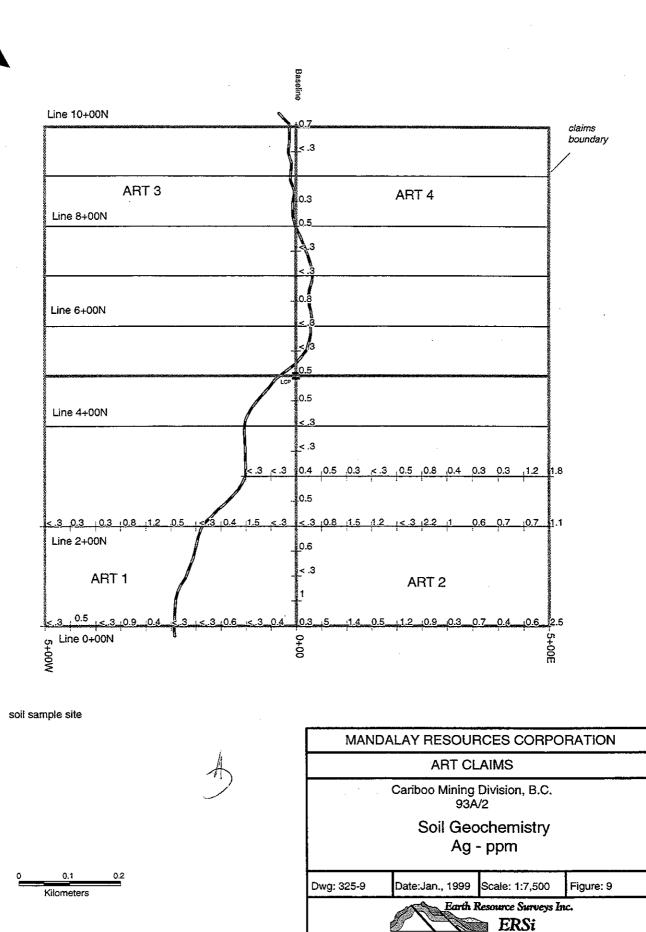


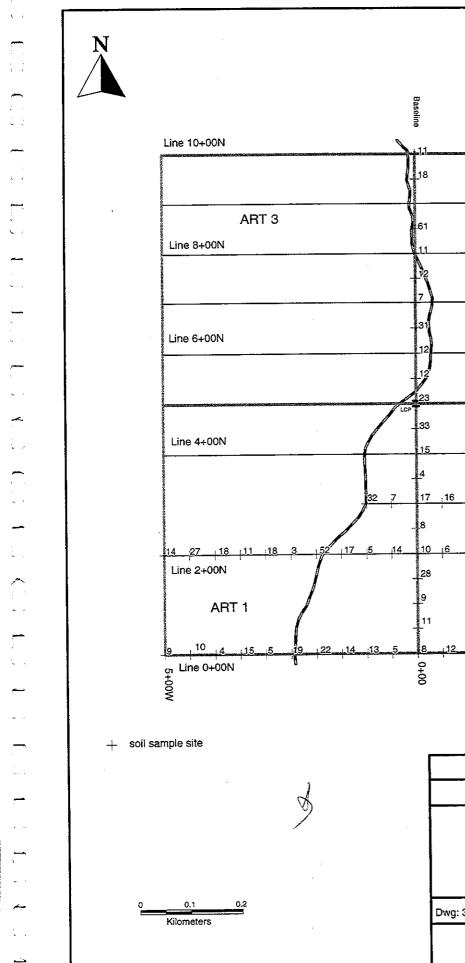
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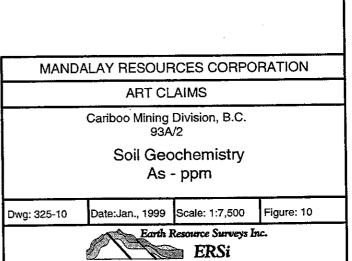
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### GEOPHYSICAL SURVEY

A combined Total Field Magnetometer-VLF-EM survey was conducted over the gridded portion of the Art Claims. Approximately 6.8 kilometers of survey was completed utilizing an EDA mag/VLF field unit in conjunction with a EDA TFM base station. Readings were taken at 12.5 meter intervals along the survey lines.

### Magnetometer Survey:

The Total Field Magnetic values delineated by this survey ranged over 12,089nT, from 50,012nT to 62,101nT. This represents a varied magnetic response. In order to verify the reliability of the data the Base Station readings were closely examined and it was determined that the diurnal variations were stable and moderate, ruling out potential magnetic storms. In addition, several field readings were repeated in both the high and low magnetic domains on different days. The checked results were consistent, confirming the veracity of the results (Figure 9).

The survey results delineated two distinct magnetic domains; a variable magnetic domain along the western edge of the grid, and a magnetic domain characterized by distinct northerly trending magnetic highs within a relatively quiet medium value background field throughout the rest of the survey area.

The variable domain lies on the western section of the survey and exhibits magnetic field values ranging over 10,000nT. The survey was limited in scope in this area therefor even though magnetic features in this area do not appear to have definitive trends further surveying would be necessary to confirm this observation. An intrusive has been mapped in this region and may be the cause of this feature.

The remaining portions of the survey show two strong and one weak magnetic high features striking northerly through the grid. They strike through a medium magnetic domain. The two strong magnetic highs, just to either side of the baseline, appear discontinuous in the north-central portion of the survey and may be an indication of some cross faulting. The weak magnetic high feature along the eastern edge of the property follows a ridge above the logged out central grid region. In each case, all three magnetic features have a corresponding VLF-EM anomaly, of varying intensities, and may be targets worthy of further investigation if geological and geochemical work in the area support this interest.

### VLF-EM Survey:

The VLF-EM survey conducted over the Art Grid utilized the VLF transmitting stations of Seattle (24.8khz). The signal from Seattle strikes through the grid from the SSW and coupled well with the lithological trends noted in the area.

Three main anomalies were delineated by this survey. The predominant anomalous response was observed from the In Phase component, however the central anomaly (around 1+50 East) exhibited a clear inverse Quadrature component.

The strongest anomaly is this central feature and it extends through the entire grid. The symmetry of the response indicates a very steeply dipping body while the relatively sharp drop off indicates a narrow source. This feature is coincident with a magnetic high lineament.

A second anomaly along the eastern edge of the grid has similar characteristics to the central anomaly, however there is not the clear Quadrature response. This feature is coincident with a weak magnetic high lineament.

A third weak VLF-EM anomaly was observed just to the west of the baseline and is coincident with a magnetic high (Figure 10).

### **DISCUSSION**

The Art property consists of thick sequence of northerly trending pyroclastic andesite flows with local domes of rhyo-dacite with some small interbedded volcanic sediments. Minor north-south structures are evident from examination of the topography and this combined with the minor east-west structures further to the east indicate a major north-south structure separating the two areas. A northerly trending epithermal sinter cap is located near the center of the Art property. In the south-central portion of the Art property is a quartz diorite intrusion mixing with the volcanic.

The initial geochemical survey on the Art property indicates anomalous areas with strong precious and base metal response despite the fact that only 72 soil samples were assayed up to date. Anomalous gold values as high as 208 ppb were recorded associated with high zinc of 218 ppm and barium of 289 ppm. Silver values were as high as 5.00 ppm. Also slightly elevated copper values up to 107 ppm were returned. Three rock samples have returned gold values over 40 ppb.

Geophysical program consisting of combined total field magnetometer and VLF-EM survey has delineated three main magnetic anomalies corresponding with VLF-EM anomalies.

### CONCLUSIONS AND RECOMMENDATIONS

The 1998 field program on the Art Property has been successful in defining a number of geological, geophysical and geochemical targets that warrant follow- up exploration.

The strong precious and base metal response and presence of geophysical anomalies on the Art claims indicate targets that warrant assaying of remaining soil samples further geochemical sampling, mechanized trenching over the geochemical anomalies discovered by this program and diamond drilling.

Respectfully submitted,

Ø. ADAMEC

Dr.J. (Duro) Adamec, P.Geo. January 10, 1999

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### **STATEMENT OF QUALIFICATIONS**

I, JURAJ (DURO) ADAMEC, of North Vancouver, British Columbia, hereby certify:

- 1. I am a graduate of the Commenius University in Bratislava, Slovakia 1978) and I hold Doctorate in Engineering Geology (1982) from the same University.
- 2. I am a certified Professional Geoscientist and member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
- 3. I am a Fellow of Geological Association of Canada in good standing.
- 4. I have been practicing my profession as a geologist in Europe, North America, South America and Russia since 1978.

Dated in North Vancouver, B. C. this 10 day of January, 1999.

Dr. J. (Duro) Adamec, P. Geo.

### **BIBLIOGRAPHY**

Basil, C., 1998: Geophysical report on the Art property, Private report.

- Bloodgood, M.A., 1990: Geology of the Eureka Peak and Spanish Lake Map Areas, BC, BCMEMPR Paper 1990-3.
- Campbell, R.B. and Tipper, H.W., 1971: Geology off Bonaparte Lake Area, 92P; GSC Mem. 363.

Campbell, R.B., 1978: Geology of Quesnel Lake Area, 93A GSC, Open File 574.

- Durfeld, R.M., 1988: Geochemical and Geological Report on the Deception Ledge property.
- Holland, S.S., 1950: Placer gold Production of British Columbia; B.C.D.M. Bulletin 28.
- Ridley, D.W. and Dunn, D., 1993: Prospecting Report on Deception Ledge Property, assessment report.

Ronyecz, E., 1998: Geological summary on the Art property, Private report.

- Schiarizza, P. and Preto, V.A., 1987: Geology of the Adam's Plateau-Clearwater-Vavenby Area; BCMEMPR 1987-2.
- Struik, L.C. 1986: Imbricated Terranes of the Cariboo Gold Belt with Correlations and Implications for Tectonics in Southeastern BC; Canadian Journal of Earth Sciences, Vol. 23, No. 8, Pgs. 1047-1061.

1988: Structural Geology of Cariboo Mining District, East-Central BC,: GSC Mem. 421.

Sutherland-Brown, A., 1957: Geology of the Antler Creek Area; British Columbia, B.C.D.M. Bulletin 38.

### APPENDIX I

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### Statement of costs

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### STATEMENT OF COSTS

Field Work between June 1 and October 19, 1998

Preparation	\$ 650.00
Mob/Demob	1,265.00
Truck rentals & fuel (10 days @ \$ 115/day)	920.00
Equipment rentals	377.00
Domicile (8 days 5 men @ \$ 60/day)	2,400.00
Geochemistry rock samples	197.15
soil samples	1,067.22
Geophysical survey all inclusive	3,100.00
Field supplies	698.63
Report, drafting, copying	3,150.00
Senior geologist (3day@ \$ 450/day)	1,350.00
Geologist (5days @ \$ 325/day)	1,625.00
2 technicians (8 days @ \$ 200/day)	3,200.00
	<b>\$</b> 20,000,00

TOTAL

\$20,000.00

### APPENDIX II

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Analytical Methods

# ACME Analytical Laboratories Ltd.

852 East Hastings Street, Vancouver, British Columbia, Canada V6A 1R6 Telephone: (604) 253-3158 • Facsimile: (604) 253-1716 • Toll free: 1-800-990-ACME (2263) • e-mail: acme_lab@istar.ca

# Group 1D ICP Analysis

Economical 30 and 32 element packages offering good to excellent detection limits for base metals, pathfinder elements and rock forming elements. Aqua Regia digestion followed by ICP determination.

	Detection	n .	Detection		Detection
Ag	0.3 ppm	Cr*	l ppm	P*	0.001 %
Al*	0.01 %	Cu	l ppm	Pb	3 ppm
As	2 ppm	Fe*	0.01 %	Sb	2 ppm
Au	2 ppm	<b>K</b> *	0.01 %	Sr*	1 ppm
<b>B</b> *	3 ppm	La*	l ppm	Th*	2 ppm
Ba*	1 ppm	Mg*	0.01 %	Ti*	0.01 %
Bi	2 ppm	Mn*	2 ppm	U*	5 ppm
Ca*	0.01 %	Mo	1 ppm	<b>V</b> *	1 ppm
Cd	0.2 ppm	Na*	0.01 %	W*	2 ppm
Co	l ppm	Ni	l ppm	Zn	1 ppm
Hg†	l ppm	Tl†	5 ppm		

	<u>Cdn</u>	<u>Ŭ.S.</u>
30 Elements	\$6.60	\$5.10
32 Elements	\$7.20	\$5.55
Any 1 element Any 5 elements	\$3.75 \$5.15	\$2.90 \$3.95

*Partial leach for these elements

†Additional elements in 32 element ICP package

### Method:

### ICP Analysis

A 0.5g sample of sample powder is digested in 2:2:2 mixture of concentrated HCl, HNO₃ and distilled  $H_2O$  for 1 hr at 95°C. Solutions are allowed to cool and settle for 2 hr. Solution is aspirated into an ICP emission spectrograph (Jarrel Ash AtomComp Model 975) for the determination of 30 to 32 major, minor and trace elements.

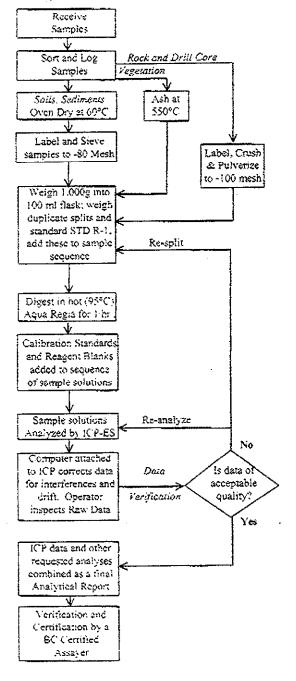
### Specifications:

Sample size required:	minimum of 1 gm
Accuracy:	Monitored with In-house Standard C3 that has been calibrated against
	CANMET Standards SO-2 and SO-4
Precision:	$\pm 10\%$
Turn around time:	3 – 5 working days for batches of 300 samples

852 East Hastings Street, Vancouver, British Columbia, Canada V6A 1R6 Telephone: (604) 253-3158 - Facsimile: (604) 253-1716 - Toll free: 1-800-990-ACME (2263) - e-mail: acme_lab@istar.ca

### METHODS AND SPECIFICATIONS FOR ANALYTICAL PACKAGE GROUP 7 – 15 ELEMENT ASSAY BY ICP-EMISSION SPECTROMETRY

**Analytical Process** 



#### Comments

### Sample Preparation

Assaying is recommended for samples containing very high concentrations of commodity or pathfinder elements (ie. > 1%). Soils and sediments are sieved to minus 80 mesh (-177 microns). Rocks are crushed to 75% minus 10 mesh (-1.7 mm), a 250 g sub-sample is riffle splitted then pulverized to 95% minus 100 mesh (-150 microns). Reject duplicate and pulp duplicate splits are taken from one sample in every 34 to monitor sub-sampling variation due to sample inhomogeniety (reject split) and analytical precision (pulp split). In to 100 mL volumetric flasks are placed 1.000 ±0.002g splits of pulp (0.25 g / 100 mL or 0.25 g / 250 mL weight to volume ratios may be used for very high grade samples). In each batch of 34 samples, in-house reference material STD R-1 and a blank are carried through weighing, digestion and analysis to monitor accuracy.

#### Sample Digestion

In to each flask is added 30 ml of Aqua Regia (2:2:2 ACS grade conc. HCl, conc. HNO₃ and demineralized H₂O). Sample solutions are heated for 1 hour in a boiling water bath (95°C) then cooled for 3 hours. Dilute HCl (5%) is added to bring the volume to the 100 mL mark.

#### Sample Analysis

Sample solutions are aspirated into and ICP emission spectrograph (Jarrel Ash AtomComp model 800 or 975) for the determination of Ag, As, Bi, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Th, U and Zn.

#### **Data Evaluation**

Raw and final data from the ICP-ES undergoes a final verification by a British Columbia Certified Assayer who then signs the Analytical Report before it is released to the client. Chief Assayer is Clarence Leong, other certified assayers are Dean Toye and Jacky Wang.

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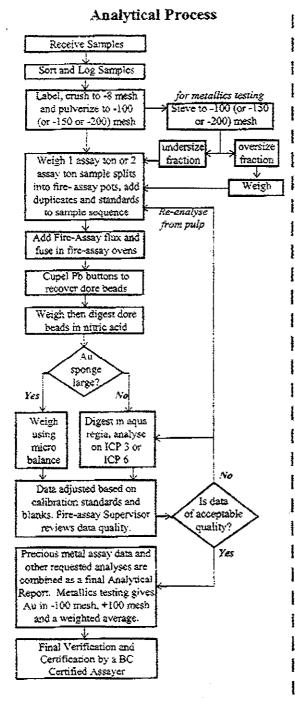
Date: November 16, 1998

Prepared By: J. Gravel

# ACME Analytical Laboratories Ltd.

852 East Hastings Street, Vancouver, British Columbia, Canada V6A 1R6 Telephone: (604) 253-3158 · Facsimile: (604) 253-1716 · Toll free: 1-800-990-ACME (2263) · e-mail: acme_labs@mindlink.bc.ca

### METHODS AND SPECIFICATIONS FOR ANALYTICAL PACKAGE GROUP 6 - PRECIOUS METAL ASSAY



### Comments

### Sample Preparation

Rocks and drill core are crushed to -8 mesh (-0.25 cm), riffle split to 250 g splits then pulverized to -100 mesh (-150 or -200 at client's request). Duplicates of crushed (rejects) and pulverized (pulp) material are added in each analytical batch (34 samples) to monitor sample inhomogeniety and analytical precision, respectively. One assay ton (29.2  $\pm$ 0.01g) or two assay ton (58.4  $\pm$ 0.01g) splits are weighed. High-grade gold standard STD Au-1 (Ag-2 if Ag assay requested) and a blank are added to each analytical batch to monitor accuracy. Results are reported in imperial (oz/t) or metric (gm/tonne) measure. For metallics testing, a 1Kg (or larger) split is pulverized and sieved to -100 mesh (-150 or -200 mesh at client's request). A representative 1 or 2 assay ton split of the undersize (-100, -150 or -200 mesh) fraction is assayed. Material remaining in the sicve (oversize fraction) is collected, weighed and assayed in total.

### Sample Digestion

Fusing at 1000°C for 1 hour with fire-assay fluxes containing a PbO litharge and Ag inquart liberates all Au, Pt and Pd. After cooling, lead buttons are recovered and cupelled at 950°C to render Ag  $\pm$ Au  $\pm$ Pt  $\pm$ Pd dore beads. Beads are weighed then leached in 1 mL of conc. HNO3 at >95°C to dissolve Ag leaving Au sponges.

#### Sample Analysis

Latge Au sponges >2 mm weighed by micro-balance (gravimetric determination). Small flakes are digested by adding 6 mL of 50% HCl to the HNO3 solution then determined by ICP-ES (Jarrel Ash Atom-Comp model 800 or 975). Pt and Pd are also determined by ICP-ES. Every Ag fire assay is accompanied by a wet assay. Ag concentrations <10 oz/t are reported from the wet assay, results >10 oz/t are from the fire assay. Au metallics testing reports concentrations of Au in the -100 mesh fraction, the +100 mesh fraction and the calculated weighted average of these fractions.

#### Data Evaluation

Raw and final data undergoes a final verification by a British Columbia Certified Assayer who then signs the Analytical Report before it is released to the client. Chief Assayer is Clarence Leong, other certified assayers are Dean Toye and Jacky Wang.

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Date: March 5, 1997

Prepared By: J. Gravel

# AACME Analytical Laboratories Ltd.

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852 East Hastings Street, Vancouver, British Columbia, Canada V6A 1R6 Telephone: (604) 253-3158 · Facsimile: (604) 253-1716 · Toll free: 1-800-990-ACME (2263) - e-mail: acme_lab@istar.ca

## Group 6 Precious Metals Assay by Fire Assay

Precise determinations of Au, Ag, Pt and Pd using classical lead-collection fire assay with AA, ICP or gravimetric determination of concentrations. Standard 1 assay ton samples (29.2 gm).

Metallics assaying on a 500 gm sample is highly recommended if the sample contains coarse native metal.

Gold (Detection Limit: 0.03 gm/tonne)	\$10.75	\$ 8.25
Gold +100 mesh fractionadd	\$ 8.60	\$ 6.60
Gold & Silver	\$15.35	<b>\$11.80</b>
Gold & Silver + 100 mesh fractionadd	\$12.25	\$ 9.45
Gold, Platinum, Palladium	\$20.90	\$16.10
Gold, Platinum, Palladium + 100 mesh fractionadd	\$16.75	\$12.90
Gold, Silver, Platinum, Palladium	\$25.00	\$19.25
Gold, Silver, Platinum, Palladium + 100 mesh fractionadd	\$20.00	\$15.40
Placer concentrate assay with return of bead	\$19.50	\$15.00
2 assay ton samples (58.3 gm)add	\$ 3.55	\$ 2.75

### Method:

### Sample Digestion

1 AT (29.2 gm) or 2 AT (58.3 gm) sample is fused with Fire Assay fluxes at 1050 °C for 1 hr. Pb button is recovered and cupeled to produce a dore bead containing  $Ag = Au \pm PGE$ . Bead is parted in HNO₃ to recover  $Au \pm PGE$  flake. Flake is digested by addition of HCl or is annealed for a gravimetric finish.

### ICP / AAS Analysis

Sample solution is aspirated into an ICP emission spectrograph (Jarrel Ash AtomComp Model 975) for the determination of Au = Ag = Pt = Pd = Rh. ICP-ES is the default method of analysis owing to the substantially larger linear range and simultaneous multi-element analysis, however we can conduct AAS determinations if requested.

### Gravimetric Determinations

Gravimetric determination is recommended for samples containing in excess of 30 gm/tonne Au. After parting of the dore bead (digestion of Ag using HNO₂), the remaining precious metal flake is annealed to consolidate and remove any moisture. The flake is weighed on a highly precise micro balance.

### Metallics Assay

Samples containing coarse metal can give poor reproducibility with standard 1 Assay Ton samples. Metallic assaying uses a 500 gm sample to overcome the "nugget effect". A 500 gm sample is pulverized then sieved to -100 mesh. The oversize ( $\pm 100$  mesh) material - including coarse native Au - is weighed and assayed in total. Amount of Au is reported in milligrams. A 1 AT sample of the undersize (-100 mesh) is assayed and reported in gm/tonne. True Au content is reported as the weighted average of the over and undersize fractions.

### Specifications:

Sample size required:	minimum of 60 gm (1 AT), 120 gm (2 AT), 1000 gm (Metallics Assay)
Accuracy:	Monitored with In-house Standards calibrated to international CRMs
<b>Detection Limits:</b>	Ag = 0.01 oz/t, Au = 0.001 oz/t, Pt = 0.001 oz/t, Pd = 0.001 oz/t
Turn around time:	4-5 working days for batches of 300 samples

### APPENDIX III

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### Geochemical Data

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Mandalay Resources Corp. FILE # 9803545

Page 6

Data 👖

ACME ANALYTICAL				<del> </del>																									AC	ME ANALY	TICAL
SAMPLE#	Mo ppm	Cu ppm	Pb ppn	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V maqq	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	8 ppm	Al %	Na %	K %	W mqq	Au* ppb
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STANDARD C3/AU-S Standard G-2	24 2	62 3	36 3	161 41	5.1 .7	36 7	11 4	725 492		51 2	18 8	2 <2	19 6		21.9 <.2	19 <3	22 <3	77 39		.085 .089	20 11	169 75	.59 .57	161 237	.09 .12	22 <3	.90 .96	.04 .08	.17 .47	16 3	51 3

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

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ACHE ANALYTICAL																						<u>.</u>							A	CHE ANALY	[]CAL
SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %		U ppm	Au ppii	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	8 ppm	Al %	Na %	К %	W ppm	Au* ppb
LA0+00N 4+00W LA0+00N 3+50W LA0+00N 3+00W LA0+00N 2+50W LA0+00N 2+00W	2 2 ~1 2 2	24 50 88 91 28	7 10 3 7 10	47 77 65 79 103	<.3 .9 .4 <.3 <.3	126 68 358 127 60	14 21 41 16 12	234 491 581 358 306	2.88 4.98 2.82	4 15 5 19 22	<8 <8 <8 <8 <8	<2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <	<2 4 2 3 2	22 24 36 22 28	.5 1.2 .6 .4	ও ও ও ও ও ও ও	<3 <3 <3 <3 <3	54 58 77 55 62	.23 .74 .27	.051 .047 .094 .034 .044	5 17 5 21 18	102 365	4.46 1.16	140 168 236 129 126	.15 .07 .23 .09 .09	6 8 : 6	1.51 1.90 3.87 1.61 1.54	.03 .02 .03 .01 .01	.07 .16 .56 .14 .14	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	<1 <1 <1 4 5
LA0+00N 1+50W LA0+00N 1+00W LA0+00N 0+50W LA0+00N 0+50E LA0+00N 1+00E	2 4 1 5 3	26 22 12 33 25	12 10 10 16 10	96 83 66 147 101	.6 <.3 .4 5.0 1.4	46 41 18 79 59	10 10 9 25 16	144 213 608 737 310	2.90 1.46 3.84	14 13 5 12 11	<8 <8 <8 <8 <8	<2 <2 <2 <2 <2 <2	5 4 2 6	15 18 16 52 31	.9 .6 .5 1.6 1.1	3 3 3 3 3	<3 <3 <3 <3 3	49 51 30 45 37	.15 .20 .56	.051 .041 .056 .147 .048	20 19 18 28 24	76 69 28 65 52	.58 .26 .55	111 83 99 335 195	.06 .06 .04 .04 .06	6 3 3	1.65 1.39 .85 4.12 2.17	.01 .01 .01 .02 .02	.06 .08 .07 .37 .22	<>> <> <> <> <> <> <> <> <> <> <> <> <>	3 1 <1 2 3
LA0+00N 1+50E LA0+00N 2+00E LA0+00N 2+50E LA0+00N 3+00E LA0+00N 3+50E	4 3 5 5 4	27 22 74 72 18	12 10 12 11 12	106 94 151 153 151	.5 1.2 .9 .3 .7	66 53 125 115 27	17 15 27 25 7	358 313 573 517 240	2.70 6.44 6.10	12 9 19 17 12	<8 <8 8 <8 <8	<2 <2 <2 <2 <2 <2 <2	5 5 8 6 3	31 31 43 42 20	.9 .7 1.3 1.2 1.0	ও ও ও ও ও ও	<3 4 <3 <3 <3	42 36 169 156 45	.32 .20 .20	.046 .050 .127 .137 .229	27 25 20 21 22		2.90 2.61	210 171 849 784 128	.07 .06 .18 .17 .03	8 <3 <3	2.32 1.95 3.89 3.73 1.39	.03 .02 .01 .01 .01	.22 .18 .39 .33 .06	<b>∾</b> ∾ ∾ ∾ ∾	3 3 5 4 3
LA0+00N 4+00E RE LA0+00N 4+50E LA0+00N 4+50E LA0+00N 5+00E BLA 10+00N	3 3 4 3 2	14 9 9 18 33	14 9 9 11 8	148 59 61 190 145	.4 .3 .6 2.5 .7	24 13 14 39 92	8 3 11 19	304 102 102 169 295	1.97 2.00 2.74	11 8 8 13 11	<8 <8 <8 <8 <8	< < < < < < < < < < < < < < < < < <> </td <td>6 4 5 7 4</td> <td>14 10 10 10 17</td> <td>1.5 .6 .5 1.2 .9</td> <td>ব ব ব ব ব ব</td> <td>ব্য ব্য ব্য ব্য ব্য</td> <td>62 39 39 32 62</td> <td>.08 .08 .10</td> <td>.285 .073 .075 .105 .085</td> <td>20 21 21 23 17</td> <td>37 17 17 30 146</td> <td></td> <td>168 60 61 88 133</td> <td>.06 .04 .04 .04 .11</td> <td>6 &lt;3</td> <td>1.84 .75 .76 2.01 2.51</td> <td>.01 .01 &lt;.01 .01 .01</td> <td>.09 .03 .04 .07 .12</td> <td>&lt;&gt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt; &lt;&gt; &lt;&gt; &lt;&gt;</td> <td>1 1 2 4 3</td>	6 4 5 7 4	14 10 10 10 17	1.5 .6 .5 1.2 .9	ব ব ব ব ব ব	ব্য ব্য ব্য ব্য ব্য	62 39 39 32 62	.08 .08 .10	.285 .073 .075 .105 .085	20 21 21 23 17	37 17 17 30 146		168 60 61 88 133	.06 .04 .04 .04 .11	6 <3	1.84 .75 .76 2.01 2.51	.01 .01 <.01 .01 .01	.09 .03 .04 .07 .12	<> < < < < < < < < < < < < < < <> <> <>	1 1 2 4 3
BLA 9+50N BLA 8+50N BLA 8+00N BLA 7+50N BLA 7+00N	2 1 1 2	38 156 87 55 10	6 3 <3 4 8	115 110 191 96 50	<.3 .5 <.3 <.3	89 115 100 127 26	18 43 40 25 5	479 525 413	6.18 7.21	18 61 11 12 7	<8 <8 <8 <8 <8	<2 <2 <2 <2 <2 <2 <2	4 2 2 2 2 2 2 2	15 35 23 50 9	1.0 .7 .8 .9 .2	4 <3 <3 <3 3	<3 4 <3 4 3	66 138 176 108 46	.48 .29 .82	.070 .079 .075 .067 .024	20 7 9 9 9	213 231	2.33 3.38 2.10	107 107 259 174 66	.12 .28 .26 .21 .08	<3 / <3 / 7 /	2.41 4.07 5.48 3.37 .89	.01 .02 .01 .02 .01	.11 .47 .56 .27 .05	<> <> <> <> <> <> <> <> <> <> <> <> <> <	3 3 1 <1 <1
BLA 6+50N BLA 6+00N BLA 5+50N BLA 5+00N BLA 4+50N	2 1 3 2	36 19 24 23 28	9 10 9 11 7	112 95 115 131 88	.8 <.3 <.3 .5	390 39 43 46 48		354 147 171 250 236	3.04 3.67 3.38	31 12 12 23 33	<8 <8 <8 <8 9	<2 <2 <2 <2 <2 <2 <2	5 <2 2 7 3	27 12 14 11 13	.7 .6 .6 .4	6 3 3 3 3	3 4 <3 3 3	58 76 90 60 65	.16 .18 .14	.041 .049 .061 .113 .075	21 10 11 22 10	144 109 124 88 105	1.19 .77 .93 .65 .79	106 97 118 103 87	.09 .17 .19 .05 .11	<3 <3 6	2.07 1.54 1.82 2.01 1.86	.01 .01 .01 .01 .01	.10 .11 .13 .09 .07	<2 <2 <2 <2 <2 <2	3 1 <1 4 <1
BLA 4+00N BLA 3+50N BLA 3+00N BLA 2+50N BLA 2+00N	3 1 3 2 1	30 73 32 17 67	9 <3 12 11 <3	93 87 98 106 115	<.3 <.3 .4 .5 <.3	61 185 69 37 119	41	349 213	6.03 3.29 2.76	15 4 17 8 10	<8 <8 <8 <8 <8	<2 <2 <2 <2 <2 <2 <2	7 2 7 5 <2	16 42 16 16 30	.5 .9 .6 .7 .7	3 <3 3 4 <3	<3 4 <3 4 <3	60 81 55 55 81	.68 .21 .19	.079 .028 .068 .077 .197	26 7 26 20 5	386 114 65	1.00 4.58 .94 .58 2.39	102 237 111 87 367	.09 .21 .09 .08 .20	8 / <3 [/] <3 [/]	1.65 4.53 1.56 1.42 3.30	.01 .01 .01 .01 .01	.11 .34 .15 .08 .24	~? ~? ~? ?	2 2 <1 3 2
STANDARD C3/AU-S Standard G-2	25 1	63 3	37 <3	160 43	5.8 <.3	35 7		723 504		54 2	22 <8	2 <2	23 3	28 71	22.5 <.2	19 <3	24 <3	78 39		.086 .092	19 10	171 76	.59 .58	144 215	.09 .12		1.87 .94	.04 .07	.17 .45	16 2	44 1
<u>Sample t</u>	ype:	SOIL.	San	ples	begin	ning	'RE'	are R	eruns	and	'RRE'	are	Rejec	t Rer	uns.																

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data < FA



ACME ANALYTICAL

Mandalay Resources Corp. FILE # 9803545



<b>AA</b>
ACHE ANALYTICAL

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag mag	i N maga	Co ppm	Mn mqq	Fe %	As ppm	U maqa	Au ppm	Th ppm	\$r ppm	Cd ppm	Sb ppm	Bi ppm	V mag	Ca %	P %	La	Cr ppm	Mg %	Ba ppm	Ti %	B mag	Al %	Na %	K %	W maqa	Au*
· · · · · · · · · · · · · · · · · · ·		1-1			1.1	1.1	1-1								- <b>F</b>	1-1	1-1				FE			1.1		1.1					
BLA 1+50N	1	71	<3	180	.6	119	33	1523 4	.44	28	<8	<2	<2	53	1.0	<3	<3	86	.96.1	13	6	296	2.03	372	.18	32	.99	.01	.26	<2	1
BLA 1+00N	2	31	8	73	<.3	117	20	548 3	.31	9	<8	<2	<2	13	.4	5	<3	68	.19.0	)48	9	279	1.87	162	.11	<32	.00	.01	.09	<2	1
BLA 0+50N	1	52	7	119	1.0	76	16	338 3	.59	11	<8	<2	<2	64	1.2	<3	<3	86	.95 .0	)44	13	121	1.13	304	. 10	52	.47	.02	.16	<2	2
BLA 0+00N	2	21	9	66	.3	27	7	232 1	.93	8	<8	<2	<2	34	.4	<3	<3	39	.36 .0	)46	14	39	.33	135	.05	<31	.20	.02	.09	<2	1
RE BLA 0+00N	2	22	10	69	<.3	28	7	242 2	.01	8	<8	<2	<2	36	.5	<3	<3	40	.37 .0	147	14	41	.35	142	.05	<31	.25	.02	.08	<2	1

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data<u>(Å</u>____FA____

## APPENDIX IV

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## Rock sample Descriptions

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# ART PROPERTY PROJECT

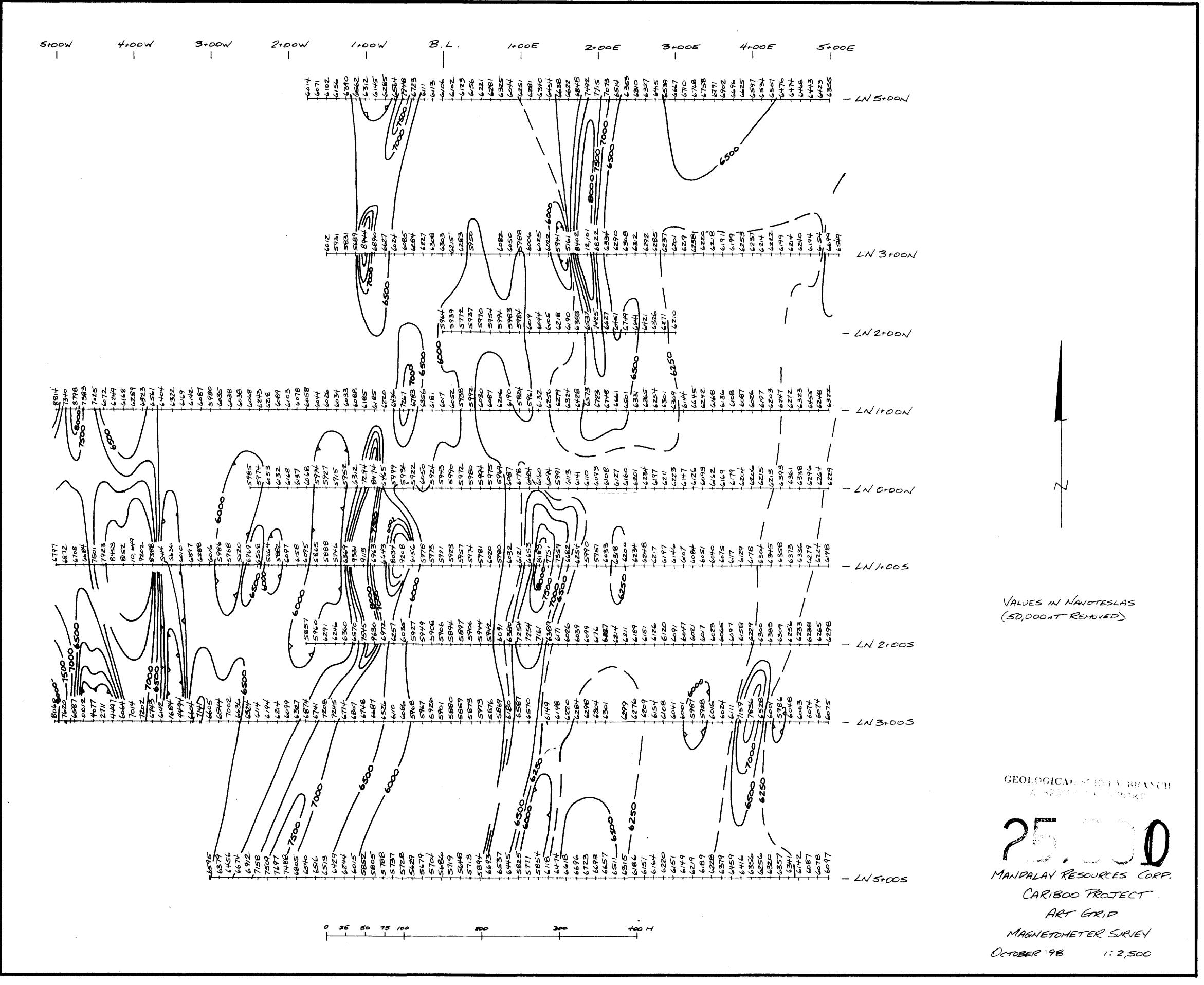
# **ROCK HAND SPECIMENS - FIELD DESCRIPTIONS**

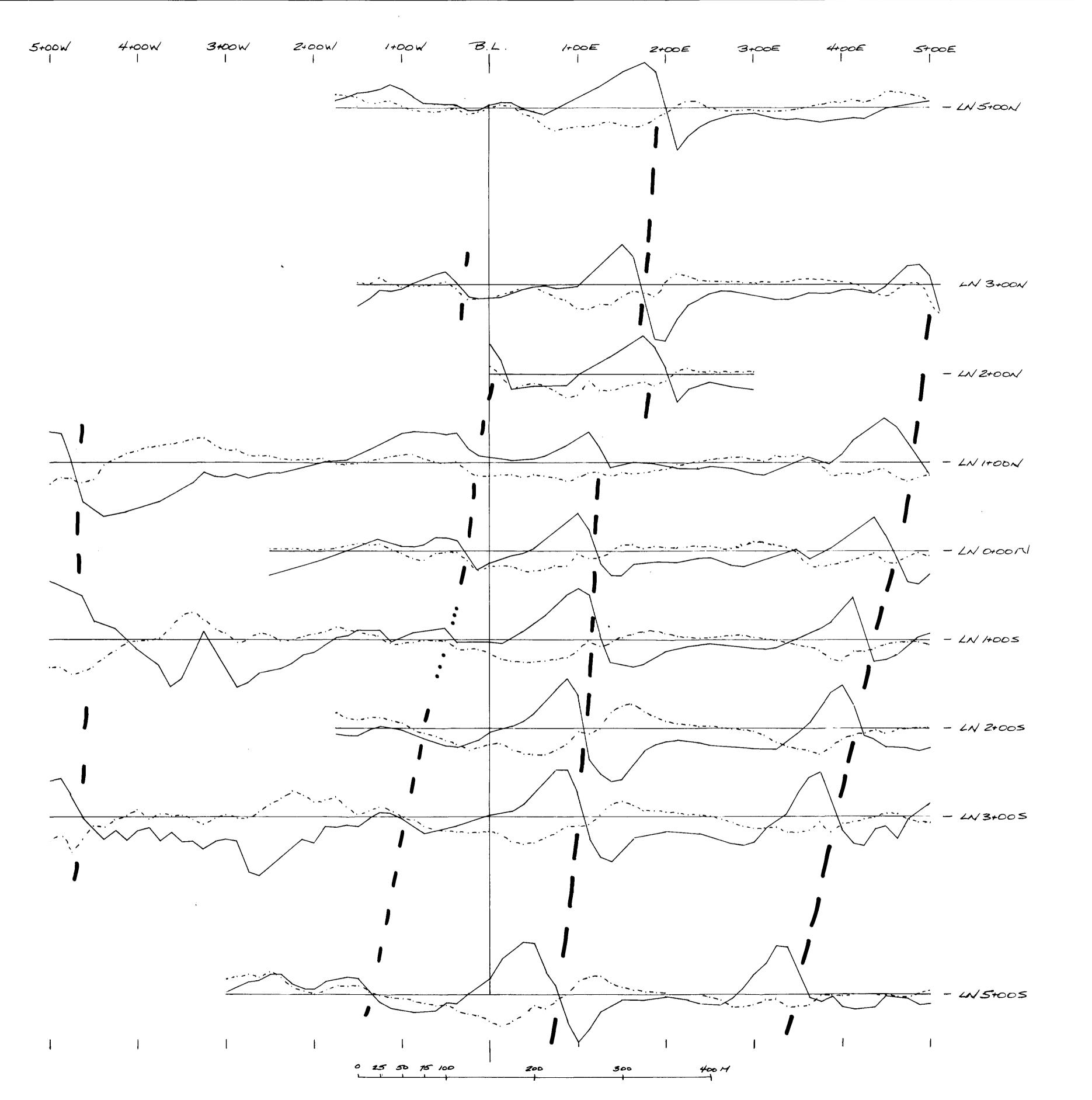
SAMPLE NO.	DESCRIPTIONS
M586559	Rhyo-dacite outcrop (subcrop?), 45 cm horizontal grab sample @ 4+50
	Aphanitic, light gray, trace magnetic, incompetent, moderately hard, wea
	up to 0.5% pyrite, trace arsenopyrite & bornite. Highly fractured & weath
M586560	Diorite matrix between rounded mafic xenocrysts outcrop, 1 m horizontal
	Coarse grained and fine grained, white with black speckles and a mediu
	competent, hard, weathers light gray, possible propylitic alteration, some
	trace limonite, possible ultrafine pyrite. Vuggy portions near the weather
M586561	Rhyo-dacite outcrop, 1 m vertical chip sample @ 5+10N, 0+08W.
	Aphanitic, light gray colour, non-magnetic, competent, hard, weathers lig mostly unaltered with disseminated pyrite. Cleavage? at 027 ⁰ /47 ⁰ W, 027
M586562	Argillic altered rhyo-dacite outcrop, 1 m vertical chip sample @ 5+14N, 0
101000002	Aphanitic, light gray-white, non-magnetic, semi-competent, hard, rusty c
	specular hematite. Possible trend of 008°/76°E.
M586563	Brecciated and rehealed rhyolite float, 30 cm grab sample @ 4+10N, 0+
	Fine grained, white colour, non-magnetic, competent, hard, weathers or
	some serpentine alteration of xenocrysts, trace manganese oxide. Fizze
M586564	Dacite outcrop, 1 m horizontal chip sample @ 4+65N, 0+02E.
	Fine grained, medium gray, non-magnetic, highly competent, hard, weat
	"skin", tiny clasts (xeno's?) of sulphides irregularly, some weathered iron
M586565	Rhyo-dacite outcrop, 1 m horizontal chip sample @ 5+14N, 0+07W.
	Aphanitic, light gray-white, non-magnetic, semi- competent, hard, rusty
	altered, massive pyrite (up to 2 cm thick), some chalcopyrite and bornite
M586566	Altered mafic volcanic float, 20 cm grab sample @ 0+00N, 2+90E.
	Fine grained, dark gray colouring, non-magnetic, competent, hard, weat
	along fractures, hematite and limonite. Rounded (transported some dista

# ART PROPERTY PROJECT

# **ROCK HAND SPECIMENS - FIELD DESCRIPTIONS**

M586567	Serpentinized basalt float, 20 cm grab sample @ 2+65N, 0+36E. Fine grained with coarse mafic crystals, light gray-green colour, magneti orange-brown, possible propylitic alteration, iron oxides along fractures, disseminated pyrite throughout, trace chalcopyrite, trace bornite, possibl
M586568	Rhyolite float, 30 cm grab sample @ 4+67N, 0+31E. Very fine grained, light gray-blue, non-magnetic, competent, hard, weath disseminated throughout, some (3 mm) mafic flecks, some 3 mm veinlet
M586569	Andesitic flow float, 60 cm grab sample @ 9+86N, 4+98E. Aphanitic, dark gray colour, non-magnetic, semi-competent, hard, weath green mineral (serpentine?, listwanite?). Portions cut through by quartz-







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