

**1993 SUMMARY
REPORT
ON THE
Pak 1-20 CLAIMS**

Located in the Pelly Mountains
Watson Lake Mining District
NTS 105G/7
61° 21' North Latitude
130° 36' West Longitude

-prepared for-
ATNA RESOURCES LIMITED

-prepared by-
Mark E. Baknes, P.Geo.

DATES OF WORK PERFORMED: September 1-4, 1993
DATE OF REPORT: February 1994



093203

1993 SUMMARY REPORT ON THE PAK 1-20 CLAIMS

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1.0 INTRODUCTION

The Pak claims consist of 20 contiguous Yukon mineral claims located in the Watson Lake Mining District. They were staked in 1993 to cover a Northern Minfile occurrence situated within a Devonian-Mississippian sequence considered favourable for hosting volcanogenic massive sulphides (VMS). The Pack Showing was first explored by Conwest in 1961, who conducted an exploration drill program. The property was briefly examined again in 1980 by Archer Cathro Limited, as part of a regional program conducted on behalf of Chevron Canada Limited.

In 1993, Equity Engineering Ltd. conducted a reconnaissance two man field program from September 1 to September 4 on behalf of Atna Resources Limited. Exploration included prospecting, geological mapping, soil and silt geochemistry. A total of 28 rock, 21 silt and 73 soil samples were collected. Three days were spent on the claims or adjacent areas, and one day was spent silting and prospecting areas to the southeast of the claims. The first objective of the program was to define the extent, controls, and grade of the massive sulphide mineralization. The second objective was to conduct reconnaissance prospecting, silt and soil sampling, to find new extensions to the known mineralization.

2.0 LIST OF CLAIMS

Yukon government records indicate that the following claims (Table 2.0.1)(Figure 2) are owned by Mark E. Baknes. Separate documents indicate that they are owned by Atna Resources Limited of Vancouver B.C..

TABLE 2.0.1
CLAIM DATA

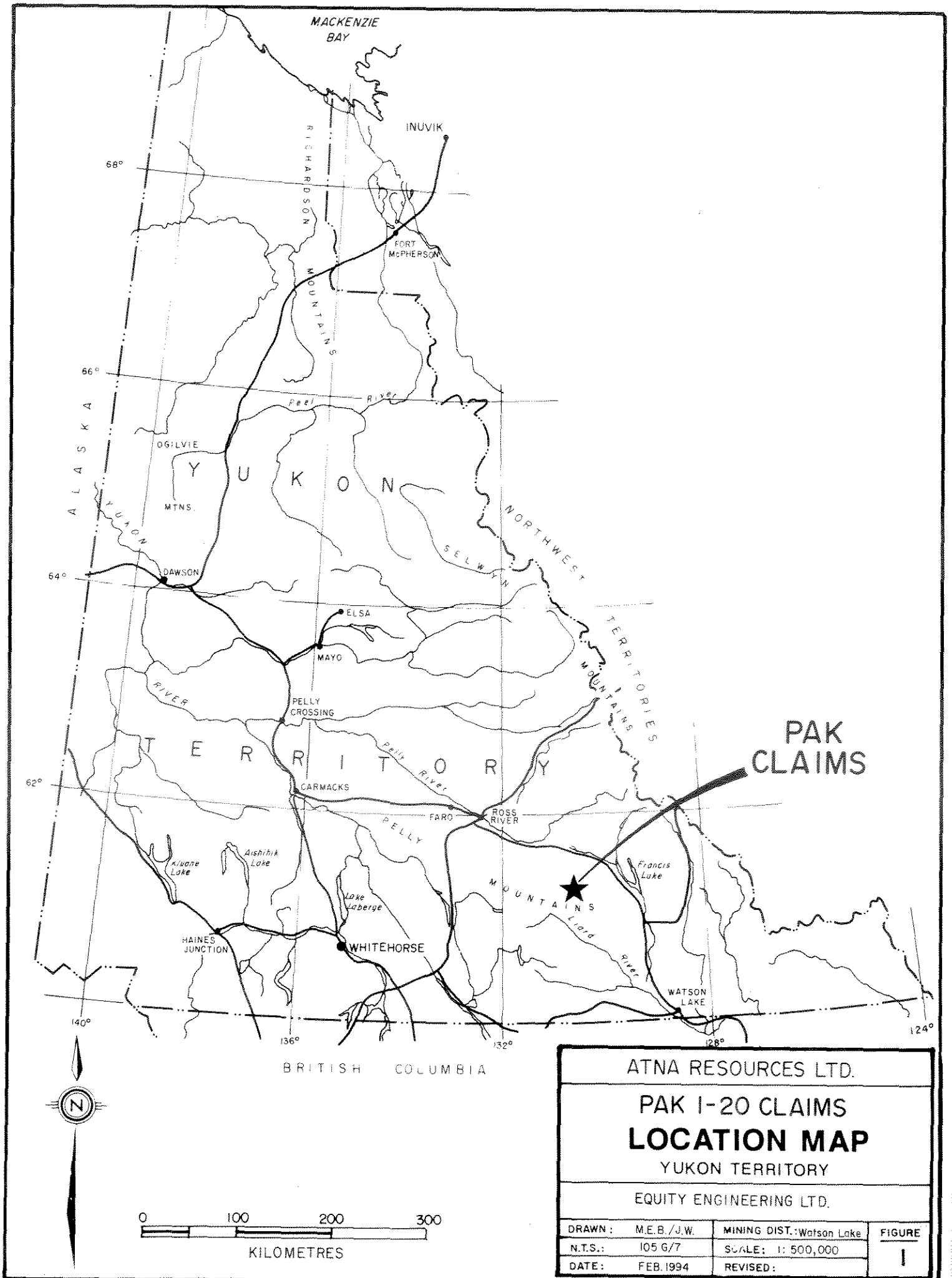
Claim Name	Record Numbers	Record Date	Expiry Date	NTS
Pak 1 - 20	YB45974-993	19/07/93	31/12/97	105G/7

* Subject to approval of assessment work covered by this report

3.0 LOCATION, ACCESS AND PHYSIOGRAPHY

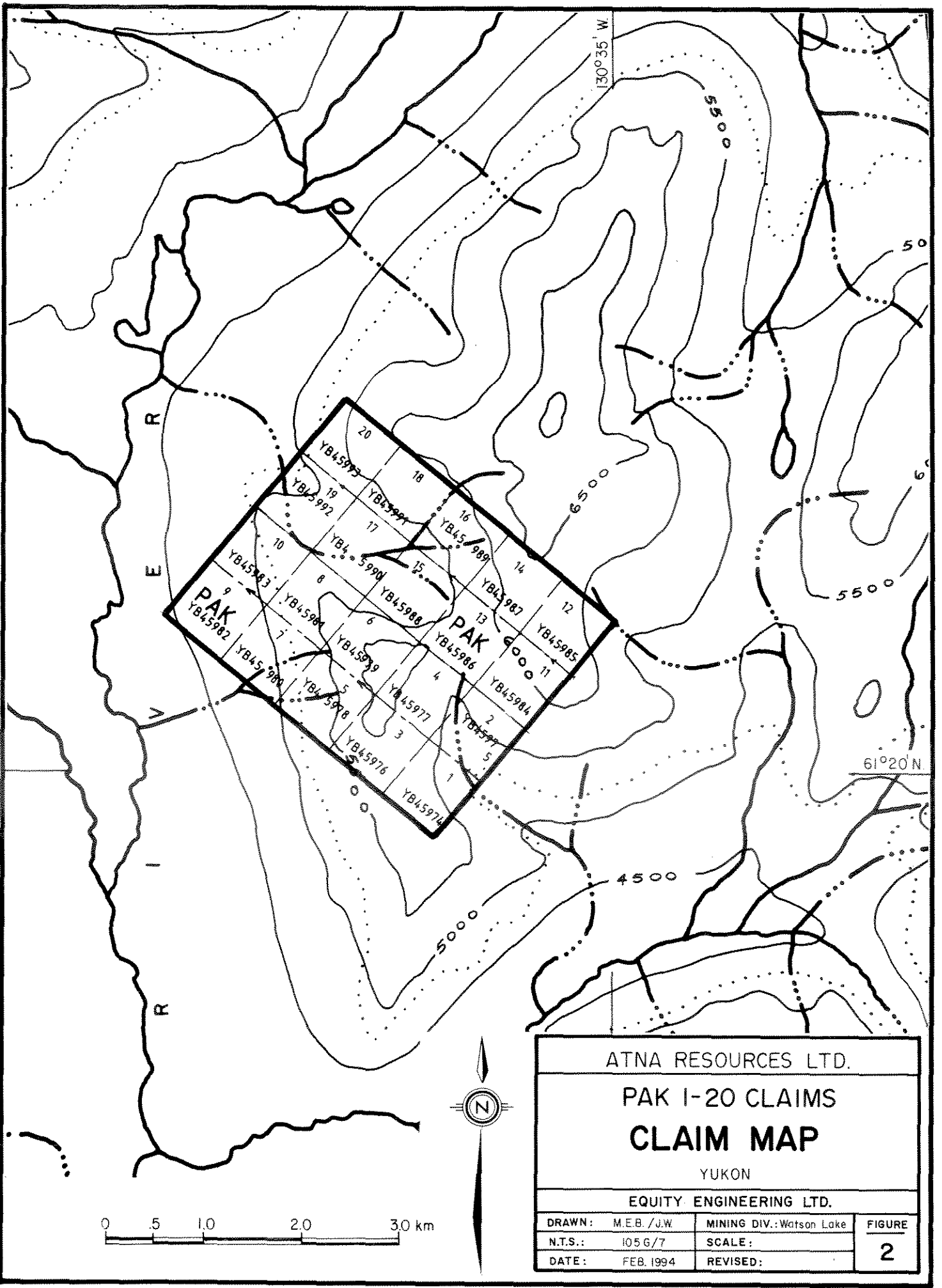
The Pak claims are located within the Pelly Mountains, approximately 120 kilometres southeast of Ross River, in the southeast Yukon (Figure 1). They lie within the Watson Lake Mining District, centred at 61° 21' north latitude and 130° 36' west longitude.

Access to the Pak claims during the 1993 field program was



PAK CLAIMS

ATNA RESOURCES LTD.			
PAK 1-20 CLAIMS			
LOCATION MAP			
YUKON TERRITORY			
EQUITY ENGINEERING LTD.			
DRAWN:	M.E.B./J.W.	MINING DIST.: Watson Lake	FIGURE 1
N.T.S.:	105 6/7	SCALE: 1: 500,000	
DATE:	FEB. 1994	REVISED:	



ATNA RESOURCES LTD.

**PAK 1-20 CLAIMS
CLAIM MAP**

YUKON

EQUITY ENGINEERING LTD.

DRAWN: M.E.B./J.W.	MINING DIV.: Watson Lake	FIGURE 2
N.T.S.: 105 G/7	SCALE:	
DATE: FEB. 1994	REVISED:	

provided by helicopter based out of Ross River. Camp materials were trucked from Ross River, 110 kilometres south along the Robert Campbell highway to Finlayson Lake from which point they were transported by helicopter to the property. The south end of North Lakes, which would be adequate for float plane access, lies two kilometres to the north.

The Pak claims lie on the east side of the North River valley opposite its source at North Lakes. The North River valley is at approximately 1250 metres elevation and is covered with scattered black spruce and low lying buck brush. Topography is moderately rugged with maximum elevations in the area averaging 2000 metres. Above treeline, which averages 1400 metres, vegetation is very sparse and most slopes are talus covered. The moderate alpine terrane with very little vegetation makes for easy access to most areas. Outcrop exposure is restricted to the higher slopes and averages approximately 15 to 20%.

4.0 PROPERTY EXPLORATION HISTORY

The Pak occurrence was first discovered by Conwest Exploration Company Limited in the summer of 1961 and staked as the Pak 1-88 claims. Conwest completed a prospecting program defining the extent of the original Pak occurrence and a second showing approximately 800 metres to the east. Conwest drilled two holes on the Pak occurrence that fall, totalling 161.2 metres, but failed to intersect mineralization (Ashton, 1961). The claims were staked as the Repack claims in 1977 by Cominco, but no work was filed. In 1979 the claims were staked as the Outlaw claims by Chevron Canada Ltd, which performed mapping (Schmidt, 1981).

5.0 1993 EXPLORATION PROGRAM

During the period September 1-4, 1993, Atna Resources Ltd. carried out a field exploration program on the Pak claims, consisting of soil, silt and rock geochemistry, limited geological mapping, and prospecting.

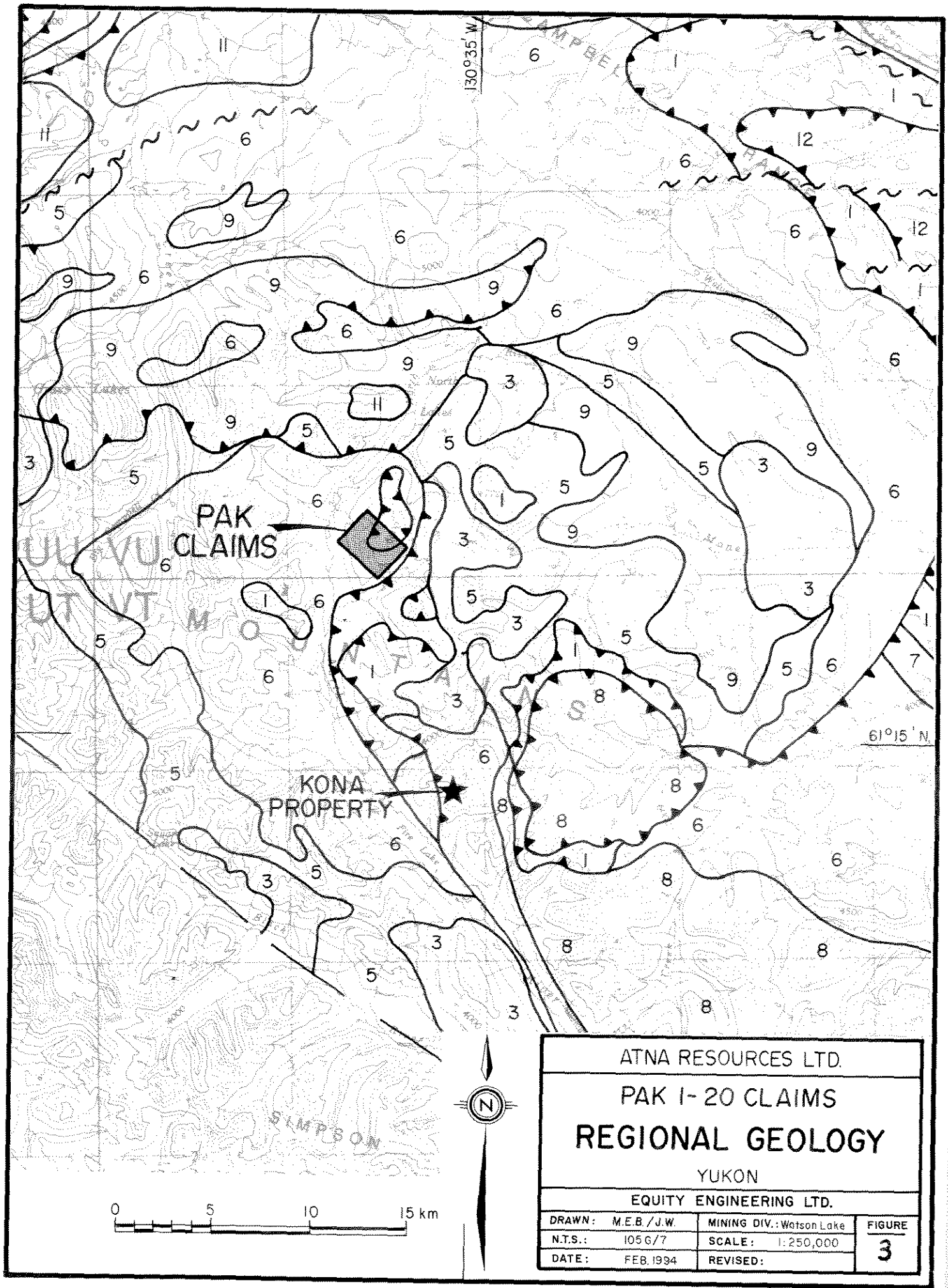
A total of 73 soil samples were taken at 50 metre intervals on three contour soil lines. A total of 21 silt samples were taken both on and off the claims to the south. Soils were collected at 50 metre intervals from "A" and "B" horizon material where possible. Soil and silt samples were placed in numbered kraft envelopes. The sample site was marked in the field with plastic flagging and the sampler recorded notes on the sample type and local conditions. Samples were partially dried in camp and then shipped to Chemex Labs Ltd. of North Vancouver, B.C. for sample preparation and analysis. Analytical procedures and a complete set of results for gold, and 32 elements by ICP geochemistry may be found in the appendices.

Geological mapping was completed on portions of the property and plotted at 1:10,000 scale and at 1:1000 scale for the Pack Showing area. A total of 28 rock samples was collected of which 8 were chip and 20 were grab samples. All samples were shipped to Chemex Labs and analyzed for gold plus 32 elements by ICP geochemistry. Three overlimit assays were performed for copper and 6 for zinc. Rock descriptions, analytical procedures and complete results are included in the appendices of this report.

6.0 REGIONAL GEOLOGY

The region lying northeast of the Tintina Trench and southwest of Frances and Finlayson Lakes is referred to the Yukon Tanana Terrane (YTT). The regional geology of the YTT has most recently been defined by the work of Tempelman-Kluit et al., (1976) and Mortensen (1985, 1992). Mortensen considers the YTT to be the innermost of the accreted terranes in the western Canadian Cordillera. It is comprised largely of a Late Devonian-Mississippian volcanic-plutonic, pericratonic arc assemblage that was strongly deformed and metamorphosed by the late Triassic. The YTT extends into the northern Yukon and on into Alaska where it is host to several volcanogenic massive sulphide (VMS) deposits in the Delta district, including several moderate size deposits that total 18 million tonnes grading 0.3 to 0.7% copper, 3.0 to 6.0% zinc, 1.0 to 3.0% lead, 34.0 to 100.0 g/t silver and 1.0 to 3.4 g/t gold (Nokleberg et al., 1989). The YTT is believed to be a displaced equivalent to the Kootenay and Barkerville Terranes of southern and central British Columbia, which are host to several VMS deposits including the Goldstream deposit north of Revelstoke (3.2 million tonnes grading 4.5% Cu, 3.1% Zn, 20 g/t Silver) (Høy, 1991). One of the most notable occurrences, that lies in the Pelly Mountains, is the Kona occurrence, 14 kilometres to the south. Mineralization is associated with a unit of banded iron formation, with oxide, sulphide and silicate facies. This unit is believed to be semi-continuous over a 1700 metre strike length. Mineralization is variable, consisting of massive pyrite with minor chalcopyrite and sphalerite, massive banded magnetite, pyrite-quartz-magnetite and disseminated pyrite and chalcopyrite in grey siliceous bands. According to Welcome North Mines Ltd., drilling within a 460 metre by 100 metre area, defined a reserve of 1.5 million tons, grading 1% copper, 1% zinc, 4.2 g/tonne silver and 0.5 g/tonne gold.

Figure 3 illustrates the regional geology of the area, including those rocks not belonging to the YTT. The Layered Metamorphic Sequence (LMS) of the SYTT is host to the known VMS occurrences and is considered the most permissive. The Devonian-Mississippian interlayered mafic and felsic rocks (middle unit of the LMS), which is host to the Pack occurrence, may be equivalent to the Nasina series of the Dawson district, which is comprised mainly of carbonaceous quartzites. The pre- to late Devonian



PAK CLAIMS

KONA PROPERTY

ATNA RESOURCES LTD.		
PAK 1-20 CLAIMS		
REGIONAL GEOLOGY		
YUKON		
EQUITY ENGINEERING LTD.		
DRAWN: M.E.B./J.W.	MINING DIV.: Watson Lake	FIGURE 3
N.T.S.: 1056/7	SCALE: 1:250,000	
DATE: FEB. 1994	REVISED:	

LEGEND

(to accompany Figure 3)

NORTH AMERICAN CONTINENTAL MARGIN

14 Pre-Triassic sedimentary and volcanic rocks

CAMBELL RANGE BELT

13 massive carbonate

12 dominantly grey chert and metachert, structurally interleaved with minor mafic and felsic metavolcanics, greenstone and serpentinite (Slide Mt.?)

YUKON-TANANA TERRANE

11 Early Jurassic - mafic stocks

10 augen orthogneiss

9 monzonitic orthogneiss

8 Mid Paleozoic - Simpson Range plutonic suite

7 Pennsylvanian-Permian - massive carbonate and quartzite (upper unit)

6 Devonian-Mississippian - interlayered mafic and minor felsic metavolcanic rocks, carbonaceous metasediments and quartzey grits (middle unit, Nasina equivalent)

5 Pre-late Devonian - micaceous quartzite, minor marble (lower unit, Nisling equivalent)

UNITS COMMON TO ALL THREE TERRANES

4 Cretaceous and Tertiary - volcanic rocks

3 Mid-Cretaceous - felsic intrusive rocks

2 Late Triassic - immature clastic sediments

1 serpentitized ultramafic rocks, greenstone, cherts, minor diabase and gabbro (Slide Mt.?)

SYMBOLS

stratigraphic or intrusive contact

thrust fault (teeth on hanging wall)

* Geology after Mortensen & Jilson, 1985

(lower unit) is likely equivalent to the Nisling assemblage of northwestern B.C. and the western Yukon.

7.0 PROPERTY GEOLOGY

The Pak 1-20 claims are underlain by a sequence of Devonian-Mississippian interlayered schistose to gneissic metasediments and intermediate metavolcanics (**Unit V**, middle unit) (Figure 4). To the east of the claims, a thrust panel of pre-late Devonian micaceous quartzite (**Unit Q**, lower unit) overlies Unit V. Intrusive lithologies include monzonitic orthogneiss (**Unit G**) that lies in contact with Unit Q to the east and serpentized ultramafic rocks (**Unit U**) that form fault slivers to the north of the claim group. Felsite occurs as 15-50 centimetre deformed sills within metasediments and metavolcanics. The metamorphic grade is amphibolite, as indicated by the presence of garnet and chlorite altered amphibole.

Structure on the property is dominated by a strong penetrative schistosity-gneissosity, striking northeast and dipping gently to the south. Folding is developed as isoclinal recumbent folds with subhorizontal fold axis and shallow south dipping axial surfaces. Short amplitude minor folds are common and dislocation along axial surfaces is locally evident.

Mapping on the claims was at a reconnaissance level, however, incorporation of 1993 mapping with that of Archer Cathro (Schmidt, 1981) allowed the Middle Unit (**Unit V**) to be subdivided into five divisions. A biotite quartzo-feldspathic unit (**Unit Vbg**) varies from gneissic to schistose in texture to a clean biotite feldspathic quartzite. Occasional quartz eyes may indicate a felsic igneous protolith. Unit Vbg is host to the massive sulphide mineralization at the Pack showing and comprises outcrops south of the claim block. Chlorite schist (**Unit Vcs**) is an extensive lithology that appears to be folded about Unit Vbg in the Pack Showing area. The chlorite schist is mainly comprised of chlorite, chloritized amphibole, with lesser biotite and minor quartz. An isolated outcrop of deformed pillows within chlorite schist suggests they represent mafic, pillowed flows. Laminated siliceous rocks (**Unit Vex**) that vary from chert, or possibly siliceous exhalite, to fine grained quartzite locally envelop the massive sulphides. The siliceous unit is essentially comprised of fine grained granular quartz with local calcareous sections. Fragments of Unit Vex constitute inclusions in the massive sulphides. Graphitic biotite quartzite (**Unit Vgq**) comprises several narrow units in the cirque east (East Cirque) of the Pack Showing. Unit Vgq is light grey to black, is locally carbonaceous to graphitic, siliceous and often pyrrhotite-bearing, resulting in gossanous weathering. Perhaps the most extensive unit on the property are feldspathic quartzites and muscovite schists (**Unit Vsq**). This classification encompasses a variety of siliceous muscovite-bearing

schistose to more massive muscovite-quartzite units. Locally, they contain opalescent quartz eyes, suggesting a felsic igneous protolith, but others resemble primary quartzites. The main constituent minerals are quartz, feldspar and muscovite, with minor carbonate and biotite.

8.0 MINERALIZATION

Mineralization on the Pak claims is concentrated in the West Cirque, which contains the Pak Showing, and in the East Cirque, where stratabound disseminated mineralization and oxidized massive sulphide float have been located.

The massive sulphides at the Pak showing are localized on the hinge of a recumbent isoclinal fold (Figure 5). The thickness of the mineralized horizon is variable, but averages 0.4 - 1.8 metres. Mapping in 1993 found the mineralization to be exposed discontinuously along strike for a distance of approximately 300 metres. Mineralization consists of massive pyrrhotite supporting quartz and wall rock inclusions with chalcopyrite as disseminations and irregular patches, often on the margins of inclusions. Pyrite is relatively minor and occurs as massive ragged patches in association with chloritic zones near the margins of the massive sulphides. Sphalerite is locally massive, where it occurs as bands on the hanging wall side of the massive pyrrhotite. Generally the sulphides are massive and dominated by cataclastic or durchbewegung textures, but there are zones of banded pyrrhotite, sphalerite and silica. Fragmental textures are indicative of high degrees of sulphide deformation and are very similar to the textures described at the Goldstream deposit in southeastern B.C.. The massive sulphides at the Pak are hosted in sericitic quartzites-cherts, muscovite schists and biotite quartz muscovite schists (Units Vbg, Vsq, Vex). In detail, the immediate hanging wall is a foliated calcareous quartzite-chert (Units Vsq & Vex), which in turn is overlain by biotite quartzite and gneiss. The immediate footwall is comprised of quartzite-sericitic quartzite (Units Vsq & Vex) that contains up to 2% disseminated pyrrhotite.

Eight chip samples and 1 grab sample were taken from the Pak Showing, along 240 m of strike length. Results from this sampling are shown in Table 8.0.1. The average grade of these chip samples is 0.64% copper, 3.0% zinc and 7.9 ppm silver, over widths ranging from 40 to 180 centimetres true width. There are an insufficient number of samples for definition of metal zoning, however, the two parallel layers of massive sulphide at the west extreme of the Pak contrast, whereby the north layer exhibits lower Zn/Zn+Cu and higher Cu/Cu+Pb ratios than the south layer. Other elements which show a positive correlation with base metals are gold, silver, bismuth, cadmium and molybdenum.

TABLE 8.0.1
PACK SHOWING ROCK GEOCHEMISTRY

Sample	Width (cm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppb)	Mo (ppm)
358380	60	3810	3790	2.17%	17.6	10	71
358381	60	1.30%	820	9420	12.4	<5	60
358382	40	6300	1325	1.26%	12.2	<5	40
358383	100	1.40%	910	8140	8.8	<5	100
358385	180	3480	2780	6.60%	5.4	30	23
358386	grab	114	3010	990	17.4	75	39
358387	40	1.11%	3080	11.10%	5.0	15	40
358388	120	3220	174	2960	3.0	15	120

Prospecting beyond the known mineralization in the West Cirque was directed at testing the concept that extensions to the Pack Showing might lie along the trend of the recumbent fold axes (070°, subhorizontal plunge). Anomalous grab sample results from samples east of the Pack Showing are shown in Table 8.0.2. In a broad area of talus, roughly 350 metres to the east of the Pack Showing, laminated sphalerite was discovered in a fine-grained quartzite/silica exhalite (Unit Vsq & Vex) (#358390-358392). This mineralization lies on the structural hanging wall of the Pack Showing, and may represent distal exhalative-type mineralization. Banded/bedded sphalerite mineralization is not mentioned in previous reports and as such, this mineralization represents a newly discovered mineralized zone. Samples 509470, 509474, and 509475 are all from angular talus at the base of gossanous cliffs, approximately 800 metres east of the Pack Showing. This area of mineralization probably corresponds with the "second showing" as referred to in the 1961 Conwest report (Ashton, 1961), which was described as follows: "...massive sphalerite adjacent to the connecting fault, followed by massive pyrrhotite with chalcopyrite and sphalerite followed by a more disseminated zone. This showing was about three feet wide, and dipped more steeply about 25° to 30° to the south into the hillside. The zone was traceable over approximately 500 feet (152m)." Sample 509475, taken from this area, consists of 'ferricrete' supporting quartz fragments, texturally similar to unoxidized massive sulphides at the Pack Showing. Samples 509470 and 509474 are graphitic and siliceous sediments or exhalites somewhat similar to sample 509473, which was taken from an outcrop of graphitic siliceous schist/phyllonite, from farther down the same drainage. Sphalerite occurs as thin laminae with lesser blebs of chalcopyrite and fine disseminated blebs of pyrrhotite. Sample 509473 is located 1200 metres southeast of the Pack Showing and consists of a small outcrop exposure of graphitic and siliceous sediment/exhalite, with fine disseminated pyrrhotite and sphalerite. It is texturally similar to samples 509470 and 509474, however, it would appear to lie on the structural footwall of the Pack mineralization, whereas samples 509470 and 509474 lie structurally above the Pack Showing. Sample 358377 is a 2 metre by 3 metre subangular boulder discovered 3

kilometres southeast of the Pack Showing. The mineralization and lithology of this boulder are somewhat similar to pyrrhotite-bearing, carbonaceous, siliceous schists, such as 509473.

TABLE 8.0.2
ROCK GEOCHEMISTRY SAMPLES EAST OF PACK SHOWING

Sample	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppb)	Mo (ppm)
358377	169	410	8410	0.2	<5	2
358390	60	2960	5250	25.6	<5	3
358391	48	192	6390	1.4	<5	2
358392	100	5830	1.3%	4.4	<5	10
509470	412	706	4690	5.2	25	10
509473	52	448	2300	1.6	<5	16
509474	2530	1260	9190	4.0	<5	20
509475	1260	>10000	4980	70.2	20	26

9.0 SOIL GEOCHEMISTRY

A total of 73 soil samples were collected on three contour soil lines at elevations of 1500, 1600 and 1620 metres (Figure 4, 6). The 1500 and 1600 metre contour lines were situated at the west corner of the claim block and the 1620 metre contour was off the east edge of the claims. A level of the mean plus two times the standard deviation for copper (156 ppm), lead (115 ppm) and zinc (958 ppm) were considered highly anomalous. Other elements that show a positive correlation with elevated base metals are manganese, phosphorous, barium and molybdenum. Based on these thresholds, it is apparent that there are several anomalous areas. Contour lines 1600 and 1500 are on average 175 meters apart, and there are essentially three coincident copper-lead-zinc anomalies extending between the lines. Anomalies are at the beginning of both lines, from 150-300 metres and from 550-700 metres south. The downslope dispersion of each of the anomalies appears to narrow down slope. On contour line 1620, the coincident copper-lead-zinc anomalous section extends from 1350-1900 metres south. The strongest lead and zinc values, ranging as high as 234 ppm lead and 2540 ppm zinc, lie on the south slope of the drainage.

The anomalous areas on the two westernmost contour lines are talus covered and no mineralization has yet been found. The anomaly on line 1620 metres is also centred in an area of abundant talus cover, but a small outcrop in the stream bed consists of carbonaceous quartz, biotite, muscovite schist or phyllonite with abundant pyrrhotite and minor sphalerite (sample 509473). Given that some soil samples have a higher zinc and copper content than the rock samples, it is likely that better mineralization exists up slope. Both the west and east contour lines lie along the inferred trend of the massive sulphide mineralization that outcrops

at the Pack Showing.

10.0 SILT GEOCHEMISTRY

A total of 21 silt samples were taken mainly in streams draining the south side of the claims (Figure 4). Anomalous thresholds for stream sediments are based on those determined for the government regional silt sample surveys (GSC, Open file 1648). The 90th percentile thresholds for copper, lead and zinc are 54 ppm, 33 ppm and 322 ppm, respectively. Results indicate that two drainages are strongly anomalous in copper, lead and zinc. The best results are from a south flowing drainage with headwaters originating from a cirque directly south of the West Cirque. The other samples are in drainages, which in part originate from the East Cirque. The East Cirque contains the carbonaceous sphalerite-bearing outcrop, and is highlighted by the 1620 metre soil contour line. The highest concentrations of copper, lead and zinc are from two silts taken near the point where contour soil line 1620 crosses the East Cirque drainage.

11.0 CONCLUSIONS AND RECOMMENDATIONS

Mineralization on the Pak claims consists of massive stratabound pyrrhotite with chalcopyrite and sphalerite. Texturally, the massive sulphides are strongly deformed, however, sulphide textures and the geological setting suggest they are volcanogenic in origin. The Pack Showing mineralization is located at the hinge of recumbent isoclinal folds, causing the mineralization to conform to a rod-like form with a subhorizontal plunge, and a trend near 070° . Minor folds in the area of the massive sulphides generally have short amplitudes. It is possible that these minor folds might mimic large scale folds, which control the trend and form of the massive sulphides. If this style of folding persists on the large scale, it would allow the massive sulphides to have an overall steep dip. Prospecting along the projected trend of mineralization has returned very encouraging results, as have contour soil lines both east and west of the Pack Showing. Anomalous results in rocks and soils, that may be derived from mineralization on the same horizon, extend over a distance of 3 kilometres. Laminated sphalerite within possible siliceous, locally carbonaceous, exhalites on both the hanging wall and footwall of the massive sulphide layer, represent new discoveries and indicate additional exploration potential at a different stratigraphic level.

Several aspects of the Pack mineralization are similar to other deposits such as the Goldstream deposit of southeastern B.C.. First order similarities are age of host rocks, correlative terranes and the similar highly deformed stratigraphic sequence comprised of footwall micaceous quartzites, ore host mafic

metavolcanics and carbonaceous metasediments and quartz eye grits, and hanging wall carbonates, phyllites and quartzites. In detail, the sulphide textures and mineralogy are also very similar. Like the Goldstream deposit, the Pack mineralization has been highly deformed but may still be continuous and intact. Failure of Conwest to intersect the mineralization may be a related to complex deformation that does not conform to the simple sheet-like model tested by their drilling. The existence of chlorite schists, and sphalerite-bearing carbonaceous metasediments or exhalites on both the structural hanging wall and footwall of the Pack massive sulphides is somewhat suggestive of a large scale recumbent fold.

Based on the results of the program, it is strongly recommended that further work be completed. The first phase would be to expand the present claim group. The second phase of the program would include prospecting, mapping, soil sampling and ground geophysics. Mapping should be property wide with detailing of the mineralization exposed in the Pack Showing and the East Cirque. Reconnaissance contour soil sampling has been effective and should be extended beyond the present area. Grid soil sampling should cover the anomalous areas outlined by contour sampling. Ground geophysics surveys should extend outward from known mineralization, specifically along the inferred linear trend of the mineralization. Since the mineralization is pyrrhotite dominant and often massive, magnetometer and EM methods would likely be the most appropriate.

Respectfully submitted,



Mark E. Baknes, P. Geoscientist
EQUITY ENGINEERING LTD.



Vancouver, British Columbia
February, 1994

APPENDIX A

BIBLIOGRAPHY

BIBLIOGRAPHY

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APPENDIX B

LIST OF PERSONNEL

LIST OF PERSONNEL

Mark E. Baknes (Sr. Geologist)
207, 675 West Hastings Street
Vancouver, B.C. V6B 1N2

Tom Bell (Sr. Prospector)
207, 675 West Hastings Street
Vancouver, B.C. V6B 1N2

APPENDIX C

STATEMENT OF EXPENDITURES

**STATEMENT OF EXPENDITURES
PAK 1 - 20 MINERAL CLAIMS**

CANADA) In the matter of an evaluation program on the
) Pak 1-20 Mineral Claims

I, Mark E. Baknes for Equity Engineering Limited, 207, 675 West Hastings Street, Vancouver, B.C. do solemnly declare that a program consisting of geological mapping, prospecting, and geochemical survey work was carried out on the Pak 1-20 Mineral Claims during the period September 1 to 4, 1993.

The following expenses were incurred during the course of this work and in the compilation and reporting of the results:

PROFESSIONAL FEES AND WAGES:

Mark Baknes, P. Geo.		
5 days @ \$375/day	1,875.00	
Tom Bell, Prospector		
4 days @ \$250/day	<u>1,000.00</u>	\$ 2,875.00

EXPENSES: (expenses prorated)

Helicopter	\$ 2,186.50	
Prorated Mobilization costs	656.33	
Travel, Accommodation & Meals	55.85	
Camp Food	166.65	
Camp Rental	200.00	
Rentals:		
Radios	20.00	
Equipment	10.00	
Truck	120.00	\$ 3,415.33
Expediting	\$ 42.86	
Field Supplies	160.35	
Freight	45.96	
Telephone	29.53	
Assays	1,632.92	
Reproductions	217.35	
Report:	3,250.00	
Management Fees	<u>729.92</u>	\$ <u>6,108.89</u>

TOTAL: \$ 12,399.22

Notes:

1. Wages are based on actual man days spent on the property.
2. Helicopter charges are based on actual hours flown.
3. Assay charges are based on actual numbers of samples from the

property.

4. General expenses (all other costs) are prorated according to man days allocated to each property.

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at Vancouver in
the Province of British Columbia this
30th day of March, 1994

)
)
) DR E Bakus

H.S.N.

A Commissioner for Oaths for, or
Notary Public for the Yukon Territory

APPENDIX D

ROCK SAMPLE DESCRIPTIONS

MINERALS AND ALTERATION TYPES

AB	albite	AD	adularia	AK	ankerite
AS	arsenopyrite	AZ	azurite	BA	barite
BI	biotite	BO	bornite	BR	brannerite
CA	calcite	CB	Fe-carbonate	CC	chalcocite
CL	chlorite	CO	cobaltite	CP	chalcopyrite
CY	clay	DI	diopside	DO	dolomite
EP	epidote	ER	erythrite	GA	garnet
GE	goethite	GL	galena	GR	graphite
HE	hematite	HS	specularite	JA	jarosite
KF	potassium feldspar	MC	malachite	MG	magnetite
MN	Mn-oxides	MR	mariposite	MS	muscovite/sericite
NE	neotocite	PO	pyrrhotite	PY	pyrite
QZ	quartz	SI	silica	SP	sphalerite
TT	tetrahedrite				

ALTERATION INTENSITIES

m	medium	s	strong	tr	trace
vs	very strong	vw	very weak	w	weak

Property : PAK

NTS : 105G/7

Date : February 1994

Sample No. UTM : N Type : Float Alteration : sCL, sQZ, mDI? Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 0.1%CP, 0.5%PO, 4%PY (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358375 Elevation: 1508 m Sample Width : m Secondaries: sGE <5 0.6 574. 6. 2. 18.
 Orientation: / True Width : m Host : Quartz chlorite quartzite?

Comments : Angular float boulder 15x15x15cm in creek. Gossanous. Quartz chlorite after diopside?, skarn? with patchy pyrite +/- pyrrhotite with possible trace of chalcopyrite. May be skarnification near quartzite intrusive contact.

Sample No. UTM : N Type : Float Alteration : mCL, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 0.3%CP, GL?, 1%PO, 3%PY (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358376 Elevation: 1455 m Sample Width : m Secondaries: sGE <5 0.2 215. 2. 2. 52.
 Orientation: / True Width : m Host : 15x15cm rusty boulder of chloritic quartzite?

Comments : Similar to 358375. Quartz-rich granular, possibly quartzite with patchy chlorite. Pyrite +/- pyrrhotite dissemination with chlorite, trace of chalcopyrite with pyrite and an unidentified black mineral, possibly galena. Subangular cobble

Sample No. UTM : N Type : Float Alteration : sBI, mCL, mMS, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 0.5%CP?, 4%PO, 2%PY, 1%SP? (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358377 Elevation: 1365 m Sample Width : m Secondaries: sGE, wMC <5 <0.2 169. 2. 410. 8406.
 Orientation: / True Width : m Host : Gossanous biotite quartz schist-biotite quartzite

Comments : Subangular 2x1x1m boulder. Biotite quartz schist-biotite quartzite with minor chlorite. Pyrrhotite and pyrite disseminated in vague bands with biotite and chlorite. May be minor sphalerite, also minor chalcopyrite.

Sample No. UTM : N Type : Float Alteration : sBI, wMS, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 0.1%CP, 5%PO (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358378 Elevation: 1750 m Sample Width : m Secondaries: sGE <5 0.6 276. 1. 16. 146.
 Orientation: / True Width : m Host : Biotite quartzite

Comments : Biotite quartzite gossanous talus (>10% of talus, subcrop) with 3-5% disseminated blebs pyrrhotite with possible trace of chalcopyrite.

Sample No. UTM : N Type : Chip Alteration : wBI, sWZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >50 m Metallics : 3%CP, 20%PO, 1%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358379 Elevation: 1695 m Sample Width : 300 cm Secondaries: sGE <5 8.2 4530. 38. 2024. 1.88
 Bedding : 034 / 14 NW True Width : 160 cm Host : Chert?, hanging wall. Biotite quartzite

Comments : Massive sulphides variable texture of ragged blebs of pyrrhotite and lesser chalcopyrite in grey to white chert to vein quartz with minor sphalerite. Also massive v. fine-grained pyrrhotite with quartz/chert 1-3mm clasts and fine disseminated sphalerite.

Sample No. UTM : N Type : Chip Alteration : wBI, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >50 m Metallics : 1%CP, 20%PO, 5%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358380 Elevation: 1695 m Sample Width : 60 cm Secondaries: sGE 10. 17.6 3809. 71. 3788. 2.17
 Bedding : 034 / 14 NW True Width : 60 cm Host : Chert?

Comments : 60cm chip 4m SW along strike zone from 358379. More sphalerite-rich, vaguely banded sphalerite-pyrrhotite with minor disseminated chalcopyrite, also vein quartz on hanging wall side.

Property : PAK

NTS : 105G/7

Date : February 1994

Sample No. UTM : N Type : Chip Alteration : wMS, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 3%CP, 10%PO, 3%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358381 Elevation: 1685 m Sample Width : 60 cm Secondaries: sGE <5 12.4 1.3 29. 820. 9424.
 Bedding : 032 / 5 NW True Width : 60 cm Host : Sericitic quartzite and chert?

Comments : 60cm thickness of mineralization, but only top 15cm strongly mineralized with weakly banded 15% chalcopyrite, 5% sphalerite, 7% pyrrhotite, with the rest of section disseminated in siliceous rock-chert? Dissipates to E into thinner lense.

Sample No. UTM : N Type : Chip Alteration : sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : 20 m Metallics : 2%CP, 40%PO, 0.5%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358382 Elevation: 1780 m Sample Width : 40 cm Secondaries: sGE <5 12.2 6301. 29. 1326. 1.26
 Bedding : 050 / 12 S True Width : 40 cm Host : Quartzite and grey quartzite

Comments : Narrow massive sulphide horizon, likely continuation of 358381. Impressive quartz sulphide textures-durchbewegung quartz fragments and ovoid quartz nodules in fine-grained pyrrhotite with chalcopyrite. Smilar to Brunswick and Pitt Island textures.

Sample No. UTM : N Type : Chip Alteration : None Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >50 m Metallics : 4%CP, 15%PO, 10%PY, 5%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358383 Elevation: 1705 m Sample Width : 130 cm Secondaries: sGE <5 8.8 1.40 47. 910. 8144.
 Bedding : 037 / 05 NW True Width : 100 cm Host : Dark grey biotite quartzite

Comments : 1m thick massive sulphide, good sulphide deformation w. quartz & green diopside? & rock fragments in matrix of ragged pyrrhotite/chalcopyrite & pyrite with local concentrations of euhedral sphalerite. Footwall PO-rich quartzite, hanging wall BI quartzite

Sample No. UTM : N Type : Float Alteration : mBI, wCL, mHW Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 1.5%CP, 6%PO, 0.1%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358384 Elevation: 1520 m Sample Width : m Secondaries: sGE <5 0.4 1421. 1. 32. 232.
 Orientation: / True Width : m Host : Biotite amphibole quartzite

Comments : Angular 50x50x50cm boulder. Quartzite with coarse biotite and interstitial amphibole (actinolite?). Pyrrhotite disseminated ragged blebs with intergranular fine-grained chalcopyrite, possible trace of sphalerite.

Sample No. UTM : N Type : Chip Alteration : wBI, wCL, wMS, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >100 m Metallics : 3%CP, 70%PO, 10%PY, 3%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358385 Elevation: 1705 m Sample Width : 260 cm Secondaries: sGe 30. 5.4 3477. 23. 2776. 6.6
 Fold Hinge : 046 / 6 True Width : 180 cm Host : Pyrrhotite +/- chalcopyrite bearing quartzite

Comments : Massive pyrrhotite fine-grained supporting 1-5mm quartz fragments, chalcopyrite fine-grained disseminated, rimming quartz grains, sphalerite local massive crystalline bands or blebs, irregular but locally >20% also fine-grained disseminated in pyrrhotite

Sample No. UTM : N Type : Grab Alteration : sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >100 m Metallics : 70%PY (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358386 Elevation: 1707 m Sample Width : m Secondaries: GE 75. 17.4 114. 39. 3006. 990.
 Bedding : 048 / 16 N True Width : m Host : Sericitic quartzite

Comments : Likely lower limb of sample 358385. Massive granular pyrite medium-grained in a matrix of sugary quartz, approximately 50cm thick.

Property : PAK

NTS : 105G/7

Date : February 1994

Sample No. UTM : N Type : Chip Alteration : sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >100 m Metallics : 1%CP, 60%PO, 10%PY, 3%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358387 Elevation: 1710 m Sample Width : 90 cm Secondaries: None 15. 5.0 1.11 19. 3078. 11.10
 Bedding : 045 / 24 NW True Width : 40 cm Host : Sericitic quartzite with approx. 1% chalcopyrite
 Comments : Massive pyrrhotite with quartz fragments, fine-grained pyrrhotite with minor fine-grained disseminated chalcopyrite/sphalerite
 in local concentration near (10cm massive) hanging wall, pyrite medium-grained to coarse-grained. May be upper limb of synform.

Sample No. UTM : N Type : Chip Alteration : wBI, mMS, sQZ Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : >100 m Metallics : 1.5%CP, 2%PO, 1%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358388 Elevation: 1710 m Sample Width : 1.8 m Secondaries: sGE 15. 3.0 3224. 8. 174. 2958.
 Bedding : 045 / 24 NW True Width : 1.2 m Host : Biotite quartzite
 Comments : On immediate hanging wall of massive sulphide sericitic quartzite-chert? with fracture and disseminate chalcopyrite
 and sphalerite, with disseminated blebs of pyrrhotite.

Sample No. UTM : N Type : Float Alteration : wBI, wMS Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 2%PO, 1%SP? (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358389 Elevation: 1790 m Sample Width : m Secondaries: None <5 1.4 376. 6. 592. 8172.
 Orientation: / True Width : m Host : Quartzite with minor muscovite and biotite
 Comments : Clean white quartzite angular block with 1-3mm lamina with disseminate pyrrhotite, minor biotite and possible fine-grained
 sphalerite. <10% talus of this material.

Sample No. UTM : N Type : Float Alteration : wBI, wMS Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 0.5%SP? (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358390 Elevation: 1810 m Sample Width : m Secondaries: mGE <5 25.6 60. 3. 2960. 5250.
 Orientation: / True Width : m Host : Fine-grained clean quartzite
 Comments : Clean quartzite with fine 1mm laminae with fine disseminated mineralization, may be sphalerite or could also be biotite.

Sample No. UTM : N Type : Float Alteration : wMS Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 1%PY, 4-5%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358391 Elevation: 1785 m Sample Width : m Secondaries: mGE <5 1.4 48. 2. 192. 6394.
 Orientation: / True Width : m Host : Fine-grained white quartzite or silica exhalite
 Comments : Fine-grained white quartzite or siliceous exhalite, finely laminated with 1-3mm massive "beds" of medium to fine-grained
 crystalline sphalerite with minor pyrite. <2% talus mineralization, very angular 20x20x15cm talus block.

Sample No. UTM : N Type : Float Alteration : wMS Au Ag Cu Mo Pb Zn
 E Strike Length Exp. : m Metallics : 1%GL, 6%SP (ppb) (ppm) (ppm) (ppm) (ppm) (ppm)
 358392 Elevation: 1830 m Sample Width : m Secondaries: None <5 4.4 100. 10. 5830. 1.33
 Orientation: / True Width : m Host : Fine-grained quartzite or silica exhalite
 Comments : Similar to 358391, rusty clean quartzite or silica exhalite with 1-8mm disseminated and massive bands of sphalerite
 and 1-2mm bands of galena. 5-10% of talus mineralized over approximately 50x75m area.

Property : PAK

NTS : 105G/7

Date : February 1994

Sample No.	UTM :	N	Type :	Grab	Alteration :	wBI, wMU, wQZ, mGR	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	25 m	Metallics :	0.2%CP, 2%PO, 1%PY, SP?	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
358393	Elevation:	1630 m	Sample Width :	m	Secondaries:	sGE	<5	0.8	52.	12.	180.	210.
	Bedding :	159 / 24 W	True Width :	m	Host :	Graphitic-sericite-biotite quartzite						

Comments : Variable outcrop of oxidized quartzite with minor muscovite to black graphitic and pyrrhotite +/- pyrite bearing quartzite-siliceous exhalite? Similar to Tom Bell sample, random grab of outcrop.

Sample No.	UTM :	N	Type :	Float	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	m	Metallics :	1%CP, trSP?	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509468	Elevation:	1920 m	Sample Width :	m	Secondaries:	mGE, mJA	<5	1.8	687.	1.	36.	126.
	Bedding :	085 / 10 NW	True Width :	m	Host :	Gneiss						

Comments : Subcrop below rock face. Bands or stringers with traces chalcopyrite, strong folding, zone 50cm thick.

Sample No.	UTM :	N	Type :	Float	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	m	Metallics :	trCP, trGL?, 3%PY	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509469	Elevation:	1930 m	Sample Width :	m	Secondaries:	mGE, mJA	<5	4.0	228.	0.	44.	222.
	Orientation:	/	True Width :	m	Host :	Gneiss						

Comments :

Sample No.	UTM :	N	Type :	Float	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	m	Metallics :	>1%GL, 2-3%PY	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509470	Elevation:	1930 m	Sample Width :	m	Secondaries:	wHE, mJA	25.	5.2	412.	10.	706.	4686.
	Orientation:	/	True Width :	m	Host :	Gneiss						

Comments : Subcrop. Biotite quartzite with 2-3%PY, >1% galena. Abundant in talus, may be subcrop. Grab from four boulders.

Sample No.	UTM :	N	Type :	Grab	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	5 m	Metallics :	trGL, 1%PY, trSP	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509471	Elevation:	1745 m	Sample Width :	10 cm	Secondaries:	wGE	<5	0.6	52.	10.	332.	406.
	Bedding :	055 / 15 NE	True Width :	1 m	Host :	Biotite-Gneiss						

Comments : 1 metre wide quartz altered band in Bi-gneiss

Sample No.	UTM :	N	Type :	Grab	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	10 m	Metallics :	2-3%PO	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509472	Elevation:	1655 m	Sample Width :	2 m	Secondaries:	mGE, mJA	<5	0.6	50.	7.	46.	68.
	Bedding :	030 / 20 NE	True Width :	2 m	Host :	Quartz-Biotite Gneiss						

Comments :

Property : PAK

NTS : 105G/7

Date : February 1994

Sample No.	UTM :	N	Type :	Grab	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	10 m	Metallics :	trGL, 2-5%PY	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509473	Elevation:	1655 m	Sample Width :	1 m	Secondaries:	mGE, mJA	<5	1.6	52.	16.	448.	2302.
	Bedding :	030 / 20 NW	True Width :	2 m	Host :	Gneiss						

Comments : Near 509472 same zone, strong Biotite-Quartz alteration.

Sample No.	UTM :	N	Type :	Float	Alteration :	sBI, sQZ	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	m	Metallics :	>1%CP, 2-3%PO, 1-2%PY	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509474	Elevation:	1810 m	Sample Width :	m	Secondaries:	mGE	<5	4.0	2525.	20.	1258.	9190.
	Orientation:	/	True Width :	m	Host :	Carbonaceous quartz-biotite schist-phylionite						

Comments : Laminated carbonaceous possible exhalite, similar to material in creek bed to east, 2-3% pyrrhotite and >1% chalcopyrite in large talus boulder.

Sample No.	UTM :	N	Type :	Float	Alteration :	None	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	m	Metallics :	>1%GL, >1%SP	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509475	Elevation:	1830 m	Sample Width :	m	Secondaries:	sGe, sHE, sJA	20.	70.2	1258.	26.	>10000	4978.
	Orientation:	/	True Width :	m	Host :	Ferricrete						

Comments : "Ferricrete" goethite and limonite quartz fragments. Looks like oxidized massive sulphide from main showing.

Sample No.	UTM :	N	Type :	Grab	Alteration :	sBI, sQZ, sCL	Au	Ag	Cu	Mo	Pb	Zn
		E	Strike Length Exp. :	1x2 m	Metallics :	20-100%PY	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
509476	Elevation:	1810 m	Sample Width :	rad 1 m	Secondaries:	sGE, sJA	5.	<0.2	18.	0.	240.	72.
	Bedding :	055 / 20 NW	True Width :	m	Host :	Gneiss						

Comments : 30m across slope from 509475, strong chlorite-quartz alteration, pyrite massive to minor in fractures and veinlets.

APPENDIX E

CERTIFICATES OF ANALYSIS



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

A9321469

Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE

A9321469

EQUITY ENGINEERING LTD.

Project: ATN93-03 PAK
 P.O. #:

Samples submitted to our lab in Vancouver, BC.
 This report was printed on 24-SEP-93.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	28	Geochem ring to approx 150 mesh
274	28	0-15 lb crush and split
229	28	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	28	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
2118	28	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	28	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	28	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	28	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	28	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	28	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	28	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	28	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	28	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	28	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	28	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	28	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	28	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	28	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	28	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	28	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	28	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	28	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	28	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	28	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	28	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	28	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	28	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	28	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	28	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	28	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	28	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	28	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	28	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	28	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	28	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	28	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

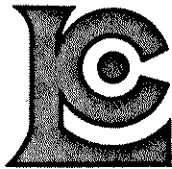
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 Total Pages : 1
 Certificate Date: 24-SEP-93
 Invoice No. : 19321469
 P.O. Number :
 Account : EIA

Project : ATN93-03 PAK
 Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE OF ANALYSIS A9321469

SAMPLE	PREP CODE		Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
	FA+AA																				
358375	205	274	< 5	0.6	1.33	4	160	< 0.5	2	1.62	< 0.5	39	116	574	3.99	< 10	< 1	0.05	20	0.24	190
358376	205	274	< 5	0.2	0.61	< 2	150	< 0.5	6	0.86	< 0.5	35	46	215	5.01	< 10	< 1	0.06	< 10	0.29	355
358377	205	274	< 5	< 0.2	2.95	< 2	180	1.5	6	1.82	35.5	29	329	169	6.55	10	< 1	0.34	< 10	0.59	410
358378	205	274	< 5	0.6	1.08	4	140	< 0.5	< 2	0.57	< 0.5	37	101	276	6.70	10	< 1	0.37	10	0.64	375
358379	205	274	< 5	8.2	0.57	8	60	< 0.5	32	0.30	49.0	29	86	4530	>15.00	< 10	< 1	0.11	< 10	0.14	1025
358380	205	274	10	17.6	0.42	8	40	< 0.5	70	0.14	60.5	26	124	3810	>15.00	10	< 1	0.09	< 10	0.13	940
358381	205	274	< 5	12.4	0.96	< 2	80	< 0.5	26	0.50	32.5	20	136	>10000	14.45	< 10	3	0.20	< 10	0.29	1315
358382	205	274	< 5	12.2	0.64	2	40	< 0.5	18	0.24	35.5	28	101	6300	>15.00	< 10	< 1	0.14	< 10	0.30	1060
358383	205	274	< 5	8.8	0.80	4	30	< 0.5	24	0.38	40.0	74	90	>10000	>15.00	10	< 1	0.07	< 10	0.26	980
358384	205	274	< 5	0.4	2.40	< 2	260	< 0.5	4	1.55	1.0	74	210	1420	6.32	< 10	< 1	1.00	< 10	1.39	415
358385	205	274	30	5.4	0.28	6	30	< 0.5	56	2.33	>100.0	64	79	3480	>15.00	20	< 1	0.07	< 10	0.15	2660
358386	205	274	75	17.4	< 0.01	346	10	< 0.5	14	0.07	3.0	118	111	114	>15.00	< 10	7	0.01	< 10	< 0.01	55
358387	205	274	15	5.0	0.32	8	10	< 0.5	76	0.21	>100.0	93	56	>10000	>15.00	10	6	0.03	< 10	0.04	2100
358388	205	274	15	3.0	1.85	14	340	1.0	4	0.54	8.0	6	162	3220	3.72	10	2	0.39	10	0.57	365
358389	205	274	< 5	1.4	0.31	< 2	60	< 0.5	4	0.15	32.0	10	159	376	3.63	< 10	3	0.04	20	0.09	130
358390	205	274	< 5	25.6	0.24	< 2	60	< 0.5	92	0.13	24.0	2	123	60	1.44	< 10	2	0.04	10	0.01	45
358391	205	274	< 5	1.4	0.42	< 2	170	< 0.5	8	0.13	35.5	2	139	48	1.82	< 10	1	0.11	10	0.11	80
358392	205	274	< 5	4.4	0.21	< 2	20	< 0.5	6	0.10	65.0	4	137	100	2.41	< 10	10	0.04	< 10	0.05	85
358393	205	274	< 5	0.8	0.31	4	200	< 0.5	< 2	0.73	1.5	10	175	52	1.87	< 10	< 1	0.18	20	0.02	25
509468	205	274	< 5	1.8	1.94	2	170	0.5	< 2	0.47	0.5	3	99	687	5.11	10	1	0.29	30	0.39	2240
509469	205	274	< 5	4.0	1.52	< 2	80	0.5	< 2	2.55	0.5	9	218	228	3.62	< 10	< 1	0.45	10	0.51	2220
509470	205	274	25	5.2	2.16	14	170	1.0	< 2	0.82	7.5	6	147	412	2.76	10	< 1	0.60	20	0.64	690
509471	205	274	< 5	0.6	1.20	2	250	< 0.5	< 2	0.15	1.0	2	195	52	2.63	10	< 1	0.46	20	0.50	230
509472	205	274	< 5	0.6	1.40	< 2	200	< 0.5	4	1.00	0.5	28	222	50	2.89	< 10	< 1	0.29	< 10	0.43	300
509473	205	274	< 5	1.6	0.51	14	190	< 0.5	< 2	0.26	13.0	30	166	52	2.97	< 10	< 1	0.20	< 10	0.06	95
509474	205	274	< 5	4.0	1.52	4	140	0.5	22	0.94	28.0	7	209	2530	3.73	30	2	0.34	20	0.56	800
509475	205	274	20	70.2	0.08	< 2	70	< 0.5	266	0.08	3.5	7	57	1260	>15.00	30	< 1	0.11	< 10	0.05	205
509476	205	274	5	< 0.2	0.13	< 2	80	< 0.5	14	0.58	0.5	2	74	18	>15.00	20	< 1	0.02	< 10	0.08	715

CERTIFICATION: *Hart Buchler*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

Page Number : 1-B
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 Certificate Date: 24-SEP-93
 Invoice No. : I9321469
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 Account : EIA

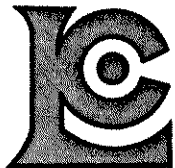
Project : ATN93-03 PAK
 Comments : ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE OF ANALYSIS A9321469

SAMPLE	PREP CODE		Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
			ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
358375	205	274	6	0.09	140	4690	2	2	1	41	0.02	< 10	< 10	44	< 10	18
358376	205	274	2	0.09	26	1170	2	< 2	9	54	0.21	< 10	< 10	71	< 10	52
358377	205	274	2	0.25	83	1790	410	< 2	17	47	0.20	< 10	< 10	157	20	8410
358378	205	274	1	0.05	121	790	16	2	4	47	0.12	< 10	< 10	56	< 10	146
358379	205	274	38	0.03	46	350	2020	< 2	2	28	0.02	< 10	< 10	47	< 10	>10000
358380	205	274	71	0.02	41	250	3790	< 2	1	12	0.01	< 10	< 10	40	10	>10000
358381	205	274	29	0.02	54	440	820	< 2	4	30	0.03	< 10	< 10	112	10	9420
358382	205	274	29	< 0.01	97	310	1325	< 2	3	14	0.01	< 10	< 10	61	10	>10000
358383	205	274	47	< 0.01	80	120	910	< 2	2	9	< 0.01	< 10	< 10	33	< 10	8140
358384	205	274	1	0.11	97	600	32	< 2	11	95	0.18	< 10	< 10	104	10	232
358385	205	274	23	< 0.01	44	460	2780	< 2	2	134	< 0.01	< 10	< 10	39	110	>10000
358386	205	274	39	< 0.01	24	< 10	3010	2	1	3	< 0.01	< 10	< 10	1	< 10	990
358387	205	274	19	0.01	58	280	3080	< 2	2	33	< 0.01	< 10	< 10	28	80	>10000
358388	205	274	8	0.04	11	280	174	< 2	3	68	0.04	< 10	< 10	61	10	2960
358389	205	274	6	0.06	15	230	592	< 2	4	16	0.07	< 10	< 10	10	20	8170
358390	205	274	3	0.06	1	290	2960	< 2	4	20	0.12	< 10	< 10	7	10	5250
358391	205	274	2	0.06	4	330	192	< 2	2	14	0.04	< 10	< 10	10	10	6390
358392	205	274	10	0.06	5	260	5830	< 2	2	11	0.10	< 10	< 10	6	30	>10000
358393	205	274	12	0.01	47	3700	180	< 2	1	13	< 0.01	< 10	< 10	30	< 10	210
509468	205	274	1	0.02	7	170	36	< 2	2	21	0.04	< 10	< 10	8	10	126
509469	205	274	< 1	0.02	32	400	44	< 2	6	88	0.08	< 10	< 10	136	10	222
509470	205	274	10	0.04	44	600	706	< 2	4	44	0.09	< 10	< 10	164	20	4690
509471	205	274	10	0.02	11	340	332	< 2	2	15	0.04	< 10	< 10	119	< 10	406
509472	205	274	7	0.04	41	1590	46	< 2	11	40	0.10	< 10	< 10	108	< 10	68
509473	205	274	16	0.02	105	1170	448	< 2	1	11	< 0.01	< 10	< 10	42	10	2300
509474	205	274	20	0.12	36	1520	1260	< 2	6	69	0.10	< 10	10	376	30	9190
509475	205	274	26	0.01	8	640	>10000	10	3	120	0.01	< 10	< 10	74	30	4980
509476	205	274	< 1	< 0.01	8	2390	240	6	2	132	0.01	< 10	< 10	38	30	72

CERTIFICATION:

Hart Bickler



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

A9322172

Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE

A9322172

EQUITY ENGINEERING LTD.

Project: ATN93-03 PAK
P.O. #:

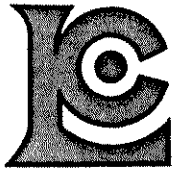
Samples submitted to our lab in Vancouver, BC.
This report was printed on 4-OCT-93.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	8	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
301	3	Cu %: Reverse Aqua-Regia digest	AAS	0.01	100.0
316	6	Zn %: Reverse Aqua-Regia digest	AAS	0.01	100.0



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207 - 675 W. HASTINGS ST.
VANCOUVER, BC
V6B 1N2

Page Number : 1
Total Pages : 1
Certificate Date: 04-OCT-93
Invoice No. : 19322172
P.O. Number :
Account : EIA

Project : ATN93-03 PAK
Comments : ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE OF ANALYSIS

A9322172

SAMPLE	PREP CODE	Cu %	Zn %								
358379	244 --	-----	1.88								
358380	244 --	-----	2.17								
358381	244 --	1.30	-----								
358382	244 --	-----	1.26								
358383	244 --	1.40	-----								
358385	244 --	-----	6.60								
358387	244 --	1.11	11.10								
358392	244 --	-----	1.33								

CERTIFICATION: *Al Knstie*



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TO: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

A9321468

Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE

A9321468

EQUITY ENGINEERING LTD.

Project: ATN93-03 PAK
 P.O. #:

Samples submitted to our lab in Vancouver, BC.
 This report was printed on 26-SEP-93.

SAMPLE PREPARATION

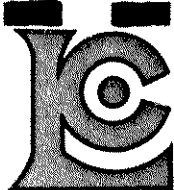
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	94	Dry, sieve to -80 mesh
202	94	save reject
229	94	ICP - AQ Digestion charge

* NOTE 1.

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	94	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
2118	94	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	200
2119	94	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	94	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	94	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	94	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	94	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	94	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	94	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	94	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	94	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	94	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	94	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	94	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	94	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	94	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	94	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	94	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	94	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	94	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	94	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	94	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	94	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	94	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	94	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	94	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	94	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	94	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	94	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	94	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	94	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	94	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	94	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



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207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
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Page Number : 1-A
 Total Pages : 3
 Certificate Date: 26-SEP-93
 Invoice No. : 19321468
 P.O. Number :
 Account : EIA

Project : ATN93-03 PAK
 Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE OF ANALYSIS A9321468

SAMPLE	PREP CODE		Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
			FA+AA																		
S-20TB	201	202	< 5	< 0.2	3.39	28	490	< 0.5	< 2	0.85	3.0	40	172	707	6.87	20	< 1	0.87	40	2.32	2010
MBSLT93-15	201	202	< 5	0.2	0.76	4	190	1.5	< 2	0.61	< 0.5	4	15	19	1.39	10	< 1	0.10	10	0.23	505
MBSLT93-16	201	202	< 5	< 0.2	1.11	4	210	1.0	< 2	0.53	< 0.5	8	25	34	1.84	10	< 1	0.13	10	0.38	515
MBSLT93-17	201	202	< 5	< 0.2	0.56	2	130	< 0.5	< 2	0.25	< 0.5	5	85	16	1.14	< 10	< 1	0.11	10	0.22	365
MBSLT93-18	201	202	< 5	0.4	0.87	< 2	200	1.5	< 2	0.61	1.5	6	26	25	1.53	10	< 1	0.12	20	0.33	540
MBSLT93-19	201	202	< 5	< 0.2	0.95	2	190	1.0	< 2	0.49	0.5	6	25	22	1.46	10	< 1	0.12	20	0.34	405
MBSLT93-20	201	202	< 5	0.2	0.89	< 2	190	1.0	2	0.48	1.0	6	24	21	1.37	10	< 1	0.13	20	0.34	370
MBSLT93-21	201	202	< 5	0.2	0.99	2	190	1.0	< 2	0.58	1.0	5	28	24	1.45	10	< 1	0.16	20	0.40	325
MBSLT93-22	201	202	< 5	< 0.2	1.31	< 2	270	< 0.5	< 2	0.53	2.0	19	128	65	3.11	< 10	< 1	0.26	10	1.02	780
MBSLT93-23	201	202	< 5	< 0.2	0.97	4	170	0.5	< 2	0.51	1.0	10	46	35	2.05	< 10	< 1	0.13	10	0.53	395
MBSLT93-24	201	202	< 5	< 0.2	1.66	2	560	< 0.5	2	0.68	1.5	21	80	103	4.06	10	< 1	0.35	20	1.09	1025
MBSLT93-25	201	202	< 5	< 0.2	1.14	2	410	< 0.5	< 2	0.47	1.0	15	101	73	3.00	< 10	< 1	0.23	10	0.76	755
MBSLT93-26	201	202	< 5	0.2	1.45	6	390	< 0.5	2	0.68	2.0	15	51	49	3.16	10	< 1	0.18	20	0.66	810
MBSLT93-27	201	202	< 5	< 0.2	1.58	< 2	380	< 0.5	< 2	0.59	3.0	16	53	62	3.59	10	< 1	0.28	30	0.73	980
MBSLT93-28	201	202	< 5	< 0.2	1.42	4	370	< 0.5	< 2	0.50	2.0	15	47	57	3.42	10	< 1	0.27	20	0.66	880
MBSLT93-29	201	202	< 5	0.2	1.64	6	400	< 0.5	< 2	0.57	2.5	20	54	60	3.82	10	< 1	0.28	30	0.76	990
MBSLT93-30	201	202	< 5	< 0.2	1.71	12	340	< 0.5	< 2	0.50	1.5	17	49	50	3.47	10	< 1	0.30	30	0.74	880
MBSLT93-31	201	202	< 5	< 0.2	1.47	4	290	< 0.5	2	0.37	2.0	21	42	52	3.45	10	< 1	0.24	20	0.55	750
MBSLT93-32	201	202	< 5	< 0.2	1.11	10	330	< 0.5	< 2	0.24	0.5	9	26	49	2.42	10	< 1	0.15	20	0.41	685
MBSLT93-33	201	202	< 5	< 0.2	1.68	< 2	310	< 0.5	< 2	0.36	0.5	13	47	48	2.75	10	< 1	0.26	10	0.82	585
MBSLT93-34	201	202	< 5	0.2	2.65	6	460	< 0.5	< 2	0.78	10.0	56	123	397	5.88	10	< 1	0.63	40	1.75	2970
CL15 0+00S	201	202	< 5	< 0.2	2.49	22	300	< 0.5	2	0.54	1.5	16	84	59	4.36	10	< 1	0.65	20	1.37	855
CL15 0+50S	201	202	< 5	< 0.2	2.61	10	400	< 0.5	< 2	0.63	< 0.5	21	107	68	4.29	10	< 1	0.79	10	1.67	885
CL15 1+00S	201	202	< 5	< 0.2	1.83	2	230	< 0.5	< 2	0.32	1.0	12	71	45	2.77	< 10	< 1	0.40	< 10	1.03	495
CL15 1+50S	201	202	< 5	< 0.2	0.91	< 2	80	< 0.5	< 2	0.15	2.5	4	39	23	1.88	10	< 1	0.10	< 10	0.40	255
CL15 2+00S	201	202	< 5	0.2	1.97	< 2	400	< 0.5	< 2	0.38	7.5	30	68	49	3.34	10	< 1	0.43	10	0.87	4150
CL15 2+50S	201	202	< 5	< 0.2	1.97	14	220	< 0.5	< 2	0.20	1.0	9	70	38	3.54	10	< 1	0.38	10	1.05	445
CL15 3+00S	201	202	< 5	< 0.2	1.71	4	300	< 0.5	< 2	0.32	0.5	12	72	43	3.51	< 10	< 1	0.51	< 10	1.07	560
CL15 3+50S	201	202	< 5	< 0.2	1.88	< 2	270	< 0.5	4	0.38	< 0.5	12	79	47	3.30	< 10	< 1	0.48	< 10	1.13	330
CL15 4+00S	201	202	< 5	< 0.2	1.68	< 2	180	< 0.5	< 2	0.31	< 0.5	11	51	35	2.74	< 10	< 1	0.21	10	0.81	450
CL15 4+50S	201	202	< 5	< 0.2	1.41	2	150	< 0.5	< 2	0.16	< 0.5	10	44	37	2.87	10	< 1	0.19	< 10	0.61	965
CL15 5+00S	201	202	< 5	< 0.2	1.60	< 2	200	< 0.5	< 2	0.18	0.5	8	48	42	3.36	10	< 1	0.17	10	0.60	785
CL15 5+50S	201	202	< 5	< 0.2	1.34	4	310	< 0.5	< 2	0.23	1.5	9	33	59	3.44	10	< 1	0.24	10	0.49	725
CL15 6+00S	201	202	< 5	0.8	0.89	22	400	< 0.5	4	0.17	< 0.5	6	17	263	5.36	10	< 1	0.17	10	0.26	705
CL15 6+50S	201	202	< 5	< 0.2	1.17	4	190	< 0.5	< 2	0.09	< 0.5	6	31	40	3.03	10	< 1	0.08	10	0.34	430
CL15 7+00S	201	202	< 5	0.2	0.74	4	280	< 0.5	< 2	0.04	< 0.5	8	18	31	1.70	< 10	< 1	0.07	< 10	0.15	1675
CL15 7+50S	201	202	< 5	< 0.2	0.42	< 2	120	< 0.5	< 2	0.03	< 0.5	3	9	27	1.72	< 10	< 1	0.04	< 10	0.04	185
CL15 8+00S	201	202	< 5	< 0.2	0.95	< 2	290	< 0.5	< 2	0.22	< 0.5	8	23	36	2.48	< 10	< 1	0.15	10	0.34	690
CL16 0+00S	201	202	< 5	< 0.2	2.83	8	330	< 0.5	< 2	0.90	< 0.5	22	108	86	5.22	10	< 1	0.74	20	1.69	930
CL16 0+50S	201	202	< 5	< 0.2	2.69	< 2	850	< 0.5	< 2	1.33	< 0.5	22	136	260	4.28	10	< 1	0.76	< 10	1.93	790

CERTIFICATION: *Hart Buchler*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

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Project : ATN93-03 PAK
 Comments : ATTN: MARK BAKNES CC: PETER DELANCEY

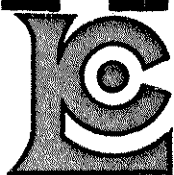
CERTIFICATE OF ANALYSIS

A9321468

SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
S-20TB	201 202	3	0.02	108	1580	86	2	18	42	0.32	< 10	< 10	169	< 10	1060
MBSLT93-15	201 202	< 1	0.01	11	910	24	< 2	1	27	0.01	< 10	80	20	< 10	94
MBSLT93-16	201 202	< 1	0.01	25	1110	18	< 2	3	22	0.02	< 10	40	32	< 10	118
MBSLT93-17	201 202	< 1	0.02	12	460	8	< 2	2	12	0.02	< 10	10	24	< 10	74
MBSLT93-18	201 202	< 1	0.01	17	950	16	< 2	2	28	0.02	< 10	100	27	< 10	168
MBSLT93-19	201 202	< 1	0.01	17	960	14	< 2	2	21	0.03	< 10	50	27	< 10	152
MBSLT93-20	201 202	< 1	0.01	17	890	12	< 2	2	20	0.03	< 10	60	27	< 10	142
MBSLT93-21	201 202	< 1	0.01	20	960	12	< 2	3	25	0.04	< 10	70	28	< 10	190
MBSLT93-22	201 202	2	0.03	91	570	60	< 2	8	22	0.08	< 10	20	66	< 10	604
MBSLT93-23	201 202	1	0.01	44	1040	30	2	4	21	0.03	< 10	40	38	< 10	358
MBSLT93-24	201 202	2	0.02	75	1260	26	< 2	11	38	0.12	< 10	< 10	91	< 10	358
MBSLT93-25	201 202	1	0.02	53	790	24	< 2	7	26	0.09	< 10	< 10	65	< 10	252
MBSLT93-26	201 202	3	0.01	52	1100	28	< 2	7	60	0.09	< 10	< 10	64	< 10	250
MBSLT93-27	201 202	2	0.02	62	1120	34	< 2	8	61	0.11	< 10	< 10	71	< 10	324
MBSLT93-28	201 202	2	0.02	54	1150	28	2	7	55	0.10	< 10	< 10	66	< 10	322
MBSLT93-29	201 202	3	0.02	65	1250	34	< 2	8	62	0.12	< 10	< 10	72	< 10	368
MBSLT93-30	201 202	3	0.02	53	1120	32	< 2	7	60	0.13	< 10	< 10	65	< 10	306
MBSLT93-31	201 202	3	0.02	53	1000	44	< 2	6	58	0.11	< 10	< 10	55	< 10	322
MBSLT93-32	201 202	2	0.01	27	760	28	< 2	3	27	0.08	< 10	< 10	44	< 10	200
MBSLT93-33	201 202	1	0.01	32	1010	22	< 2	5	32	0.15	< 10	< 10	69	< 10	136
MBSLT93-34	201 202	3	0.01	171	1620	64	< 2	15	47	0.23	< 10	< 10	135	< 10	1290
CL15 0+00S	201 202	2	0.01	34	960	92	< 2	10	33	0.30	< 10	< 10	120	< 10	430
CL15 0+50S	201 202	1	0.02	47	1100	8	< 2	11	38	0.30	< 10	< 10	129	< 10	142
CL15 1+00S	201 202	1	0.04	31	620	8	< 2	6	22	0.21	< 10	< 10	84	< 10	102
CL15 1+50S	201 202	2	0.03	12	790	18	< 2	2	14	0.11	< 10	< 10	68	< 10	90
CL15 2+00S	201 202	4	0.02	30	1560	72	< 2	5	34	0.13	< 10	< 10	113	< 10	278
CL15 2+50S	201 202	2	0.03	30	570	12	2	6	24	0.21	< 10	< 10	112	< 10	246
CL15 3+00S	201 202	1	0.01	27	870	20	< 2	6	26	0.23	< 10	< 10	102	< 10	202
CL15 3+50S	201 202	1	0.01	33	940	6	< 2	7	30	0.22	< 10	< 10	97	< 10	142
CL15 4+00S	201 202	1	0.01	29	720	10	2	4	23	0.15	< 10	< 10	68	< 10	114
CL15 4+50S	201 202	1	0.01	24	820	12	< 2	3	13	0.12	< 10	< 10	76	< 10	98
CL15 5+00S	201 202	2	0.01	21	610	18	< 2	3	18	0.13	< 10	< 10	102	< 10	118
CL15 5+50S	201 202	2	0.01	21	650	40	< 2	3	28	0.11	< 10	< 10	79	< 10	232
CL15 6+00S	201 202	13	0.02	14	960	192	< 2	1	46	0.02	< 10	< 10	67	< 10	454
CL15 6+50S	201 202	2	< 0.01	26	540	30	< 2	2	16	0.04	< 10	< 10	57	< 10	186
CL15 7+00S	201 202	2	0.04	15	640	34	< 2	1	10	0.02	< 10	< 10	38	< 10	100
CL15 7+50S	201 202	1	< 0.01	13	300	16	< 2	1	9	0.03	< 10	< 10	46	< 10	84
CL15 8+00S	201 202	2	0.01	26	840	18	< 2	2	30	0.05	< 10	< 10	46	< 10	136
CL16 0+00S	201 202	3	0.02	48	890	36	< 2	12	45	0.35	< 10	< 10	133	< 10	226
CL16 0+50S	201 202	1	0.03	62	890	8	< 2	10	37	0.29	< 10	< 10	120	< 10	186

CERTIFICATION:

Hart Bickler



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CERTIFICATE OF ANALYSIS A9321468

SAMPLE	PREP CODE		Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
	FA+AA																				
CL16 1+00S	201	202	< 5	0.4	2.20	8	420	0.5	< 2	0.79	< 0.5	19	135	65	3.58	10	< 1	0.72	10	1.60	595
CL16 1+50S	201	202	< 5	0.6	3.56	20	950	0.5	< 2	0.84	< 0.5	28	143	83	5.79	10	1	1.30	20	2.42	1150
CL16 2+00S	201	202	< 5	0.8	3.01	12	780	0.5	< 2	0.69	< 0.5	26	122	187	5.04	10	< 1	1.02	10	1.99	915
CL16 2+50S	201	202	< 5	0.2	2.12	8	470	0.5	< 2	0.60	< 0.5	19	100	54	3.36	10	< 1	0.50	10	1.36	705
CL16 3+00S	201	202	< 5	0.6	4.28	18	1010	0.5	< 2	1.01	0.5	34	179	94	6.65	10	< 1	1.72	10	3.06	1455
CL16 3+50S	201	202	< 5	0.4	2.43	6	530	1.0	< 2	0.44	0.5	22	101	63	4.20	10	< 1	0.52	20	1.35	1065
CL16 4+00S	201	202	< 5	0.2	1.39	10	230	< 0.5	2	0.34	< 0.5	18	50	25	2.24	< 10	< 1	0.53	< 10	0.92	340
CL16 4+50S	201	202	< 5	0.2	1.71	12	250	0.5	< 2	0.24	0.5	12	53	26	2.83	< 10	< 1	0.26	10	0.76	1125
CL16 5+00S	201	202	< 5	0.2	1.82	6	350	0.5	< 2	0.46	< 0.5	15	70	49	3.29	10	< 1	0.36	20	0.99	865
CL16 5+50S	201	202	< 5	0.4	1.63	16	270	1.0	2	0.26	0.5	13	52	35	3.87	10	< 1	0.28	20	0.69	815
CL16 6+00S	201	202	< 5	0.2	1.02	4	270	0.5	< 2	0.10	0.5	9	23	64	2.88	< 10	< 1	0.09	10	0.23	1490
CL16 6+50S	201	202	< 5	0.4	1.29	14	560	1.0	< 2	0.13	< 0.5	12	32	63	4.15	< 10	< 1	0.14	20	0.35	1880
CL16 7+00S	201	202	< 5	0.4	1.25	10	740	1.0	2	0.21	1.0	11	28	60	3.96	< 10	< 1	0.14	10	0.34	1920
CL16 7+50S	201	202	< 5	0.2	0.54	4	310	< 0.5	< 2	0.11	1.0	6	18	40	2.56	< 10	< 1	0.15	10	0.12	1240
CL16 8+00S	201	202	< 5	0.2	0.83	6	370	0.5	< 2	0.08	< 0.5	8	18	41	2.47	< 10	< 1	0.12	10	0.24	985
CL1620 0000S	201	202	< 5	< 0.2	1.19	< 2	140	< 0.5	< 2	0.32	< 0.5	10	51	49	1.61	< 10	< 1	0.08	< 10	0.65	210
CL1620 0050S	201	202	< 5	0.2	1.53	10	240	0.5	< 2	0.38	< 0.5	13	63	68	2.11	< 10	< 1	0.09	10	0.76	340
CL1620 0100S	201	202	< 5	0.2	1.61	2	340	1.0	< 2	0.49	< 0.5	12	55	62	2.25	< 10	< 1	0.20	10	0.80	540
CL1620 0150S	201	202	< 5	0.2	2.38	16	320	1.5	2	0.66	< 0.5	17	143	64	3.61	10	< 1	0.23	30	1.32	735
CL1620 0200S	201	202	< 5	0.2	2.10	8	290	1.0	2	0.41	< 0.5	14	104	50	3.19	10	< 1	0.24	20	1.13	585
CL1620 0250S	201	202	< 5	0.6	2.01	16	300	1.5	< 2	0.52	< 0.5	17	98	52	3.06	10	< 1	0.20	20	0.95	650
CL1620 0300S	201	202	< 5	0.4	2.35	4	330	1.5	2	0.47	< 0.5	18	134	50	3.31	10	< 1	0.15	30	1.28	885
CL1620 0350S	201	202	< 5	0.6	2.32	6	250	1.0	< 2	0.75	< 0.5	14	139	76	2.33	< 10	< 1	0.13	20	1.19	330
CL1620 0400S	201	202	< 5	0.2	2.31	12	240	1.0	< 2	0.43	< 0.5	13	105	56	2.81	10	< 1	0.14	20	1.21	345
CL1620 0450S	201	202	< 5	0.2	1.77	16	350	1.0	< 2	0.39	< 0.5	14	92	32	3.01	10	< 1	0.26	30	0.96	755
CL1620 0500S	201	202	< 5	0.4	1.81	12	280	1.0	2	0.50	< 0.5	13	82	32	2.47	< 10	< 1	0.12	20	0.65	675
CL1620 0550S	201	202	< 5	0.8	2.82	6	270	1.0	4	0.48	< 0.5	25	147	66	3.11	10	< 1	0.10	30	1.26	1220
CL1620 0600S	201	202	< 5	0.6	2.33	4	270	1.5	< 2	0.41	< 0.5	16	156	63	3.14	10	< 1	0.16	20	1.24	610
CL1620 0650S	201	202	< 5	0.4	2.65	8	330	2.0	2	0.34	< 0.5	16	97	65	3.42	< 10	< 1	0.23	10	1.23	470
CL1620 0700S	201	202	< 5	0.6	2.60	12	240	1.5	< 2	0.69	< 0.5	31	102	88	3.61	< 10	< 1	0.09	10	1.11	980
CL1620 0750S	201	202	< 5	0.4	1.85	4	190	0.5	2	0.28	< 0.5	12	92	51	2.54	< 10	< 1	0.11	10	0.96	445
CL1620 0800S	201	202	< 5	0.2	1.40	4	140	0.5	2	0.22	< 0.5	10	81	44	1.99	< 10	< 1	0.09	< 10	0.76	260
CL1620 0850S	201	202	< 5	0.2	2.24	< 2	230	0.5	< 2	0.37	< 0.5	26	341	56	2.70	< 10	< 1	0.13	10	2.19	560
CL1620 0900S	201	202	< 5	0.2	2.28	2	180	0.5	< 2	0.33	< 0.5	22	415	49	2.28	< 10	< 1	0.13	10	2.55	325
CL1620 0950S	201	202	< 5	0.2	1.57	8	120	0.5	2	0.37	< 0.5	12	114	40	1.96	< 10	< 1	0.04	10	0.88	485
CL1620 1000S	201	202	< 5	0.4	2.20	6	180	0.5	< 2	0.36	< 0.5	18	112	69	2.82	< 10	< 1	0.10	10	1.21	575
CL1620 1050S	201	202	< 5	0.4	4.03	10	190	0.5	< 2	1.16	< 0.5	25	267	126	2.96	< 10	< 1	0.13	10	2.53	630
CL1620 1100S	201	202	< 5	0.4	2.67	8	140	1.0	< 2	0.76	< 0.5	18	233	49	2.51	< 10	< 1	0.10	10	1.70	490
CL1620 1150S	201	202	< 5	0.4	1.85	6	170	0.5	2	0.36	< 0.5	13	78	42	2.97	< 10	< 1	0.11	10	0.89	530
CL1620 1200S	201	202	< 5	0.4	1.68	8	170	0.5	2	0.34	0.5	17	63	37	2.78	< 10	< 1	0.09	10	0.61	1300

CERTIFICATION: *Hart Beckler*



Chemex Labs Ltd.

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CERTIFICATE OF ANALYSIS

A9321468

SAMPLE	PREP		Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
	CODE		ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
CL16 1+00S	201	202	< 1	0.01	61	570	16	4	7	23	0.26	< 10	< 10	93	< 10	142
CL16 1+50S	201	202	< 1	0.02	51	710	10	6	14	36	0.42	< 10	< 10	168	< 10	228
CL16 2+00S	201	202	< 1	0.02	49	750	42	4	10	31	0.34	< 10	< 10	134	< 10	198
CL16 2+50S	201	202	< 1	0.01	44	730	8	2	6	29	0.24	< 10	< 10	95	< 10	86
CL16 3+00S	201	202	< 1	0.02	65	990	10	4	18	29	0.45	< 10	< 10	201	< 10	194
CL16 3+50S	201	202	< 1	0.01	50	890	22	4	10	25	0.16	< 10	< 10	100	< 10	170
CL16 4+00S	201	202	< 1	0.01	31	660	4	< 2	2	18	0.19	< 10	< 10	61	< 10	52
CL16 4+50S	201	202	< 1	0.02	25	750	14	2	4	17	0.13	< 10	< 10	76	< 10	114
CL16 5+00S	201	202	< 1	0.01	37	650	18	< 2	7	24	0.18	10	< 10	80	< 10	132
CL16 5+50S	201	202	2	0.01	32	530	36	2	6	19	0.16	10	< 10	74	< 10	238
CL16 6+00S	201	202	2	0.02	23	760	38	< 2	1	15	0.03	< 10	< 10	51	< 10	364
CL16 6+50S	201	202	3	0.01	40	740	40	2	4	33	0.04	10	< 10	60	< 10	326
CL16 7+00S	201	202	2	0.01	42	720	58	2	4	46	0.02	< 10	< 10	63	< 10	478
CL16 7+50S	201	202	3	< 0.01	21	750	30	< 2	1	26	0.03	< 10	< 10	66	< 10	180
CL16 8+00S	201	202	1	0.01	24	540	36	< 2	2	19	0.04	< 10	< 10	47	< 10	194
CL1620 0000S	201	202	< 1	0.02	35	330	4	< 2	3	12	0.15	< 10	< 10	44	< 10	40
CL1620 0050S	201	202	< 1	0.02	41	690	4	2	4	22	0.13	< 10	< 10	62	< 10	54
CL1620 0100S	201	202	< 1	0.02	37	710	8	< 2	7	24	0.12	< 10	< 10	63	< 10	64
CL1620 0150S	201	202	< 1	0.01	69	850	12	2	9	40	0.13	10	< 10	99	< 10	152
CL1620 0200S	201	202	< 1	0.01	52	750	12	2	8	21	0.14	< 10	< 10	83	< 10	128
CL1620 0250S	201	202	< 1	0.02	47	830	10	4	6	23	0.10	< 10	< 10	85	< 10	104
CL1620 0300S	201	202	1	0.02	70	910	14	2	7	24	0.08	10	< 10	84	< 10	124
CL1620 0350S	201	202	< 1	0.03	71	800	< 2	2	8	39	0.09	10	< 10	72	< 10	70
CL1620 0400S	201	202	< 1	0.02	57	500	8	< 2	7	20	0.13	10	< 10	93	< 10	96
CL1620 0450S	201	202	1	0.01	46	630	20	2	6	17	0.12	10	< 10	74	< 10	144
CL1620 0500S	201	202	1	0.03	35	1320	14	2	4	28	0.06	10	< 10	67	< 10	86
CL1620 0550S	201	202	1	0.03	83	1690	12	4	4	27	0.05	10	< 10	94	< 10	94
CL1620 0600S	201	202	< 1	0.02	99	980	8	2	8	23	0.10	10	< 10	96	< 10	108
CL1620 0650S	201	202	< 1	0.02	62	640	8	4	8	21	0.20	< 10	< 10	102	< 10	132
CL1620 0700S	201	202	< 1	0.02	67	760	8	6	9	60	0.14	< 10	< 10	91	< 10	122
CL1620 0750S	201	202	< 1	0.01	52	770	6	2	4	15	0.11	< 10	< 10	71	< 10	68
CL1620 0800S	201	202	< 1	0.02	46	560	2	2	3	10	0.13	< 10	< 10	56	< 10	46
CL1620 0850S	201	202	< 1	0.01	309	410	< 2	2	7	16	0.10	< 10	< 10	63	< 10	66
CL1620 0900S	201	202	< 1	0.01	242	350	< 2	2	4	13	0.08	< 10	< 10	51	< 10	50
CL1620 0950S	201	202	< 1	0.02	57	920	2	2	2	17	0.06	< 10	< 10	56	< 10	44
CL1620 1000S	201	202	< 1	0.02	60	650	4	2	7	21	0.14	< 10	< 10	85	< 10	62
CL1620 1050S	201	202	< 1	0.02	97	460	< 2	6	11	67	0.14	< 10	< 10	93	< 10	56
CL1620 1100S	201	202	< 1	0.01	119	550	4	4	7	59	0.12	< 10	< 10	71	< 10	56
CL1620 1150S	201	202	< 1	0.02	36	730	30	2	5	25	0.14	10	< 10	77	< 10	94
CL1620 1200S	201	202	1	0.01	27	1180	24	4	2	18	0.07	< 10	< 10	74	< 10	114

CERTIFICATION: *Mark Baknes*



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	FA+AA																				
CL1620 1250S	201	202	< 5	< 0.2	1.40	8	120	0.5	< 2	0.23	< 0.5	8	32	26	1.75	< 10	< 1	0.11	10	0.45	430
CL1620 1300S	201	202	< 5	0.4	1.44	8	470	0.5	< 2	0.55	0.5	19	63	41	3.14	10	< 1	0.28	20	0.64	1615
CL1620 1350S	201	202	< 5	0.4	1.93	12	370	0.5	< 2	0.44	< 0.5	21	83	113	3.94	10	< 1	0.22	20	1.04	925
CL1620 1400S	201	202	< 5	0.2	1.68	6	170	< 0.5	< 2	0.27	< 0.5	14	65	87	3.61	10	< 1	0.24	10	0.81	620
CL1620 1450S	201	202	< 5	0.6	1.53	8	340	0.5	< 2	0.15	0.5	15	60	72	3.52	10	< 1	0.25	10	0.52	1460
CL1620 1500S	201	202	< 5	0.4	1.69	8	600	0.5	< 2	0.26	0.5	15	65	138	3.78	10	< 1	0.26	20	0.79	725
CL1620 1550S	201	202	< 5	0.6	1.49	16	280	0.5	2	0.17	0.5	11	60	98	4.09	< 10	< 1	0.22	10	0.47	795
CL1620 1600S	201	202	< 5	0.6	2.20	12	530	1.0	2	0.52	0.5	23	70	151	4.54	10	< 1	0.46	30	1.09	835
CL1620 1650S	201	202	< 5	0.6	1.67	22	420	1.5	2	0.78	2.0	57	118	137	5.21	10	< 1	0.28	70	0.85	2300
CL1620 1700S	201	202	< 5	1.2	1.97	14	450	1.5	< 2	0.48	2.0	26	55	63	5.42	10	< 1	0.14	70	0.50	1130
CL1620 1750S	201	202	< 5	0.8	2.09	4	360	1.5	2	0.71	4.5	27	75	49	5.05	10	< 1	0.19	40	0.69	1000
CL1620 1800S	201	202	< 5	1.4	1.71	16	530	1.5	< 2	0.79	14.5	42	75	65	5.18	10	< 1	0.25	50	0.46	1410
CL1620 1850S	201	202	< 5	1.6	1.78	14	810	1.5	2	0.28	4.5	22	68	65	5.87	10	< 1	0.33	60	0.49	840
CL1620 1900S	201	202	< 5	1.6	1.23	14	620	1.5	2	0.61	14.0	46	33	96	5.99	10	< 1	0.26	60	0.37	2470

CERTIFICATION: *Hart Bickler*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221

To: EQUITY ENGINEERING LTD.

207 - 675 W. HASTINGS ST.
 VANCOUVER, BC
 V6B 1N2

Page Number : 3-B
 Total Pages : 3
 Certificate Date: 26-SEP-93
 Invoice No. : 19321468
 P.O. Number :
 Account : EIA

Project : ATN93-03 PAK
 Comments: ATTN: MARK BAKNES CC: PETER DELANCEY

CERTIFICATE OF ANALYSIS A9321468

SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
CL1620 1250S	201 202	< 1	0.04	19	590	8	< 2	2	13	0.09	< 10	< 10	47	< 10	70
CL1620 1300S	201 202	1	0.01	29	1420	38	2	3	33	0.09	< 10	< 10	101	< 10	160
CL1620 1350S	201 202	3	0.01	41	630	46	4	8	24	0.19	< 10	< 10	105	< 10	222
CL1620 1400S	201 202	1	0.01	29	460	30	< 2	6	15	0.23	< 10	< 10	104	< 10	162
CL1620 1450S	201 202	2	0.01	30	640	36	< 2	4	12	0.14	< 10	< 10	100	< 10	166
CL1620 1500S	201 202	2	0.01	36	560	46	2	6	23	0.14	10	< 10	90	< 10	280
CL1620 1550S	201 202	3	0.01	29	800	66	2	3	17	0.07	< 10	< 10	92	< 10	252
CL1620 1600S	201 202	2	0.01	62	1240	46	2	9	33	0.18	< 10	< 10	106	< 10	350
CL1620 1650S	201 202	3	< 0.01	116	2360	28	2	15	35	0.01	< 10	< 10	113	< 10	298
CL1620 1700S	201 202	7	0.03	60	1400	90	2	5	46	0.02	< 10	< 10	65	< 10	468
CL1620 1750S	201 202	3	0.02	85	1360	68	4	15	41	0.06	< 10	< 10	95	< 10	1160
CL1620 1800S	201 202	4	0.04	99	1880	234	2	12	79	0.06	< 10	< 10	83	< 10	1480
CL1620 1850S	201 202	8	0.02	75	2190	174	< 2	8	69	0.01	< 10	< 10	77	< 10	1010
CL1620 1900S	201 202	6	0.01	159	2840	110	2	10	60	0.01	< 10	< 10	75	< 10	2540

CERTIFICATION: *Hart Beckler*

APPENDIX F

GEOLOGIST'S CERTIFICATE

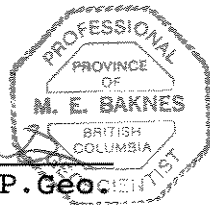
GEOLOGIST'S CERTIFICATE

I, Mark E. Baknes, of 4355 St. Catherines Street, Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist with offices at Suite 207, 675 West Hastings Street, Vancouver, British Columbia.
2. THAT I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology and a Master of Science degree in Geology from McMaster University.
3. THAT I am a Professional Geoscientist registered in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4. THAT this report is based in part on property work I personally completed and/or directly supervised between September 1 and 4, 1993, government publications and assessment reports filed with the Yukon.

DATED at Vancouver, British Columbia, this 25 day of February, 1994.


Mark E. Baknes, P. Geoscientist



needs approval

copy 2

MINFILE: 105G 032
PAGE NO: 1 of 1
UPDATED: 04/08/94

**YUKON MINFILE
STANDARD REPORT
EXPLORATION AND GEOLOGICAL SERVICES DIVISION, DIAND
WHITEHORSE**

NAME(S): Pack
MINFILE #: 105G 032
MAJOR COMMODITIES: Zn,Cu,Pb
MINOR COMMODITIES: Ag
TECTONIC ELEMENT: Yukon Tanana Terrane
NTS MAP SHEET: 105 G 7
LATITUDE: 61°20'50"N
LONGITUDE: 130°36'20"W
DEPOSIT TYPE: Volcanogenic
STATUS: Drilled prospect

CLAIMS (PREVIOUS AND CURRENT)

PACK, REPACK, OUTLAW, PAK

WORK HISTORY

Staked as Pack cl (75914) in Jun/61 by Conwest, which drilled two holes (161 m) later in the year. Restaked in Sep/77 as Repack cl (YA25511) by Cominco and in Sep/79 as Outlaw cl (YA45727) by Chevron Can L, which performed mapping and sampling in 1980. Staked as the Pak 1-20 cl (YB45974) in July/93 by M. Baknes. In Sept/93, Equity Engineering performed an exploration program on behalf of Atna Resources Ltd. which consisted of prospecting, geological mapping, and soil and silt geochemistry.

GEOLOGY

The main host rocks at the Pack showing are Nasina equivalent (Devonian-Mississippian) interlayered schistose to gneissic metasediments and intermediate metavolcanics. Mineralization consists of slightly banded, massive pyrrhotite, locally massive sphalerite and minor chalcopyrite disseminations within sericitic quartzite-chert, muscovite schist and biotite-quartz muscovite schist. The sulphides are concentrated at the crest of a recumbent isoclinal fold which plunges subhorizontally and trends 070 °.

The showing varies from 0.3 to 2.5 m thick over a length of more than 154 m. Two chip samples collected by Sevensma returned 1.7% Zn, 0.7% Pb, 0.7% Cu, 34.3 g/t Ag and trace Au across 3.0 m and 4.0% Zn, 0.3% Pb, 1.8% Cu, 20.6 g/t Ag and trace Au across 1.2 m. Four grab samples collected by Conwest averaged 4.3% Cu and 54.9 g/t Ag. J. Morin suggested that this occurrence is of the volcanogenic, Besshi-type.

REFERENCES

EQUITY ENGINEERING LTD., Mar/94. Assessment Report #093203 by M.E. Baknes.

GEOLOGICAL SURVEY OF CANADA Paper 62-27, p. 40.

NORTHLAKE MINES LTD, Mar/66. Prospectus Report by P.H. Sevensma.

YUKON GEOLOGY AND EXPLORATION 1979-80, p. 91-97, 180.

needs approval

copy 1

MINFILE: 105G 032
PAGE NO: 1 of 1
UPDATED: 04/08/94

**YUKON MINFILE
STANDARD REPORT
EXPLORATION AND GEOLOGICAL SERVICES DIVISION, DIAND
WHITEHORSE**

NAME(S): Pack	NTS MAP SHEET: 105 G 7
MINFILE #: 105G 032	LATITUDE: 61°20'50"N
MAJOR COMMODITIES: Zn,Cu,Pb	LONGITUDE: 130°36'20"W
MINOR COMMODITIES: Ag	DEPOSIT TYPE: Volcanogenic
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NORTHLAKE MINES LTD, Mar/66. Prospectus Report by P.H. Sevensma.

YUKON GEOLOGY AND EXPLORATION 1979-80, p. 91-97, 180.

MAP NO: 105G/07 ASSESSMENT REPORT PROSPECTUS CONFIDENTIAL X OPEN FILE DOCUMENT NO: 093203 MINING DISTRICT: WATSON LAKE TYPE OF WORK: PROSPECTING & GEOCHEMISTRY

REPORT FILED UNDER: EQUITY ENGINEERING LIMITED

DATE PERFORMED: 1-4 SEPT/93 DATE FILED: APRIL 8, 1994

LOCATION: LAT.: 61°21' AREA: NORTH RIVER
LONG.: 130°36' VALUE \$: 9,000

CLAIM NAME & NO.: PAK 1-20 (YB45974-993)

WORK DONE BY: MARK E. BAKNES

WORK DONE FOR: ATNA RESOURCES LIMITED

DATE TO GOOD STANDING:

REMARKS: BASE METAL VMS PROSPECT. AVERAGE CHIP SAMPLE GRADE OF 0.64% CU, 3.0% ZN, 7.9 PPM AG. 28 ROCK, 21 SILT, AND 73 SOIL SAMPLES TAKEN.



M.

R.M.

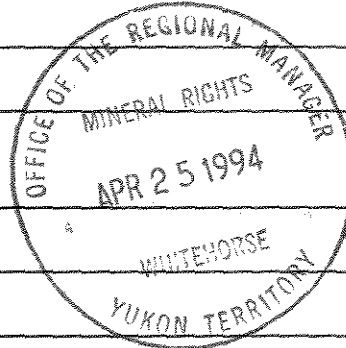
Date for

14

TRANSMITTAL FORM

From Mining Recorder at: WATSON LAKE

To Regional Manager, Mineral Rights at Whitehorse, Y.T.



For action are:

NEW APPLICATION FOR PLACER LEASE TO PROSPECT

Name

RENEWAL APPLICATION PLACER LEASE TO PROSPECT

Name

Lease no.

AFFIDAVIT OF EXPENDITURE ON PLACER LEASE

Name

Lease no.

SECURITY DEPOSIT

FINANCIAL ABILITY

ASSIGNMENT OF PLACER LEASE NO.

From

To

GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT.

Owner

DIAMOND DRILL LOGS

Claims

Claim sheet no.

QUARTZ ASSESSMENT REPORT

Claims

Claim sheet no.

Type of report

Submitted by

Cls. work performed on

\$ req. for ren. application

PAK 1, 3, 5-9, 4, 11 to 16

9000.00

[Handwritten Signature]

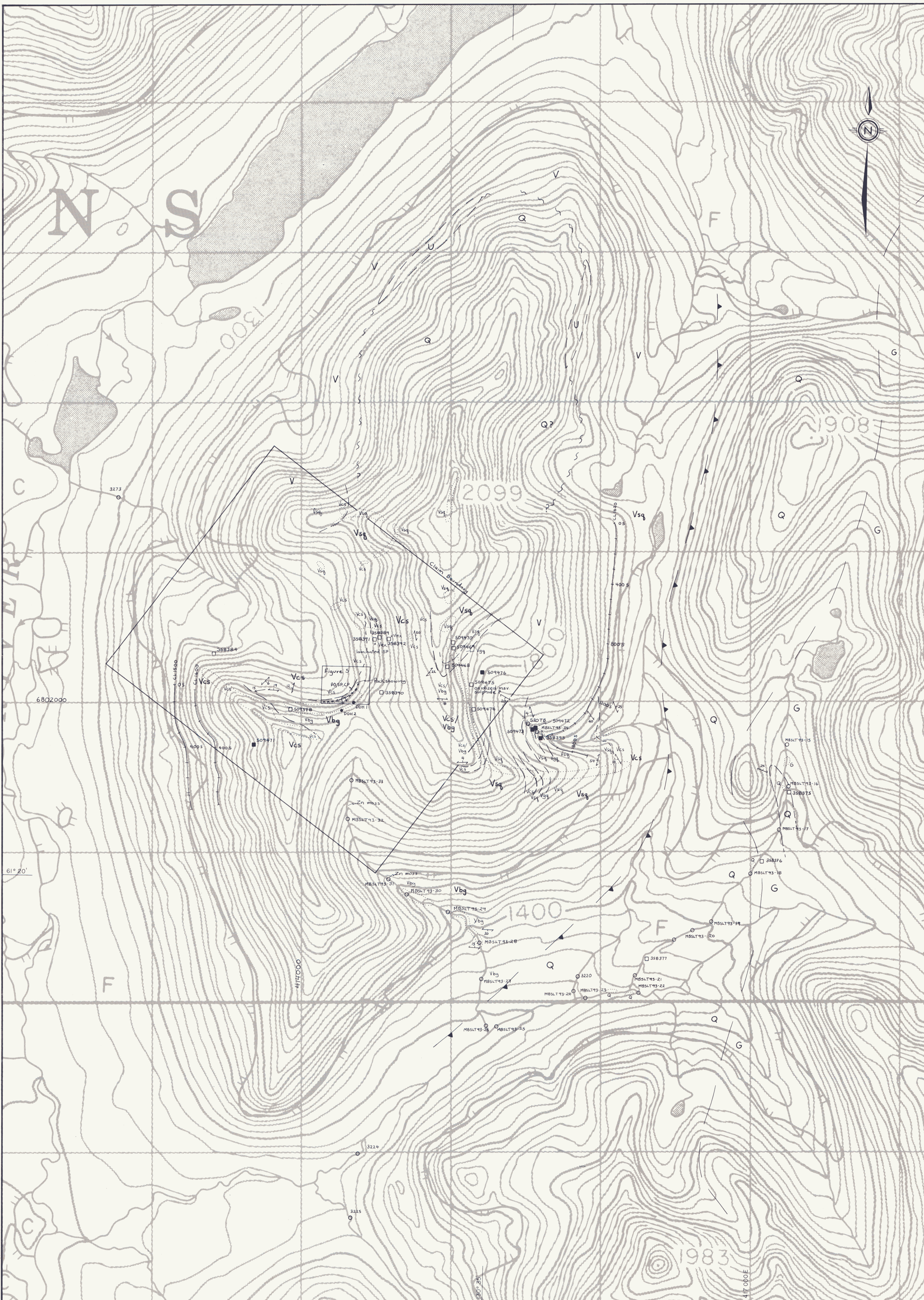
Signature

Date returned

REPLY ACTION

093203

Signature



1993 SILT SAMPLE RESULTS

Sample	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
S-20TB	0.2	707	3	86	1058
MBSLT93-15	0.2	19	<1	24	94
MBSLT93-16	<0.2	34	<1	18	118
MBSLT93-17	<0.2	16	<1	8	74
MBSLT93-18	0.4	25	<1	16	168
MBSLT93-19	<0.2	22	<1	14	152
MBSLT93-20	0.2	21	<1	12	142
MBSLT93-21	0.2	24	<1	12	190
MBSLT93-22	<0.2	65	2	60	604
MBSLT93-23	<0.2	35	1	30	358
MBSLT93-24	<0.2	103	2	26	358
MBSLT93-25	<0.2	73	1	24	252
MBSLT93-26	0.2	49	3	28	250
MBSLT93-27	<0.2	62	2	34	324
MBSLT93-28	<0.2	57	2	28	322
MBSLT93-29	0.2	60	3	34	368
MBSLT93-30	<0.2	50	3	32	306
MBSLT93-31	<0.2	52	3	44	322
MBSLT93-32	<0.2	49	2	28	200
MBSLT93-33	<0.2	48	1	22	136
MBSLT93-34	0.2	397	3	64	1288

1988 GOVERNMENT REGIONAL SILT SAMPLE ANALYSIS (Open File 1648)

Sample	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
3220	<0.2	123	2	47	453
3222	<0.2	17	<2	15	106
3223	<0.2	17	<2	15	117
3224	<0.2	38	<2	23	173
3225	<0.2	32	<2	15	182
3273	<0.2	118	2	64	666

STATISTICAL ANALYSIS FOR GOVERNMENT REGIONAL SILT SAMPLES

Percentile	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
80th	0.3	42	3	23	241
90th	0.4	54	6	33	322
95th	0.7	69	8	45	504
99th	1.1	123	15	90	1065

1993 ROCK SAMPLE ANALYSES

Sample	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
358375	0.6	574	6	2	18
358376	0.2	215	2	2	52
358377	<0.2	169	2	410	8406
358378	0.6	276	1	16	146
358384	0.4	1421	1	32	232
358390	1.4	375	6	59	8172
358390	25.6	60	3	2960	5250
358391	1.4	48	2	192	6394
358392	4.4	100	10	5830	1.33
358393	0.8	52	12	180	210
509468	1.8	687	1	96	126
509469	4	228	<1	44	222
509470	5.2	412	10	706	4686
509471	0.6	52	10	332	406
509472	0.6	50	7	46	68
509473	1.6	52	16	448	2302
509474	4	2525	20	1258	9190
509475	70.2	1258	26	>10000	4978
509476	<0.2	18	<1	240	72

LEGEND

LITHOLOGIES

YUKON TANANA TERRANE

- G Monzonitic Orthogneiss (age unknown)
- V Middle Unit: (Devonian-Mississippian) Interlayered mafic and minor felsic metavolcanic rocks, carbonaceous metasediments and quartzite gneiss (Nasina equivalent)
 - vbt biotite quartzite feldspathic gneiss - schist
 - vcs chlorite ± biotite schist - amphibolite (metamorphosed mafic volcanic?)
 - vex laminated siliceous exhalite, chert, fine grained quartzite
 - vgg graphitic biotite quartzite, possible exhalite
 - vsq sericitic feldspathic quartzite - muscovite schist, locally with quartz eyes
 - v undifferentiated
- Q Lower Unit: (pre-late Devonian) Micaceous quartzite, minor marble (Nisling equivalent)
 - Q undifferentiated

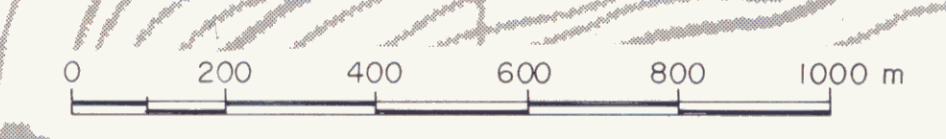
MINERALIZATION

- CP - chalcocopyrite
- PK - pyrrhotite
- PO - pyrrhotite
- SP - sphalerite

SYMBOLS

- Geological contact (approximate)
- ~ Fault (assumed)
- ~ Foliation; vertical; overturned
- ← Fold axis
- ↺ recumbent fold (synform, antiform)
- Diamond drill hole
- Massive and semi-massive sulphides
- Rock sample (float, outcrop)
- Silt sample

Geology on the PAK claims by Baknes (1993) and adapted from Schmidt (1981). Regional geology adapted from Kortensen and Jilson (1985) and Tempelman-Kluit (1977).



093203

ATNA RESOURCES LTD.
 PAK I-20 CLAIMS
GEOLOGY & GEOCHEMISTRY
 DWG 474
 EQUITY ENGINEERING LTD.
 DRAWN: MEB/JW MINING DIV: Watson Lake FIGURE
 NTS: 105/6/7 SCALE: 1:10,000
 DATE: FEB 1994 REVISED: 4

LEGEND

LITHOLOGIES

YUKON TANANA TERRANE

- V Middle Unit: (Devonian-Mississippian)
 Interlayered mafic and minor felsic metavolcanic rocks, carbonaceous metasediments and quartzite grits (Nasina equivalent)
- Vbg biotite quartzo feldspathic gneiss-schist-quartzite
 - Vcs chlorite ± biotite schist - amphibolite (metamorphosed mafic volcanic?)
 - Vex laminated siliceous exhalite, chert, fine grained quartzite
 - Vsq sericitic feldspathic quartzite - muscovite schist, locally with quartz eyes

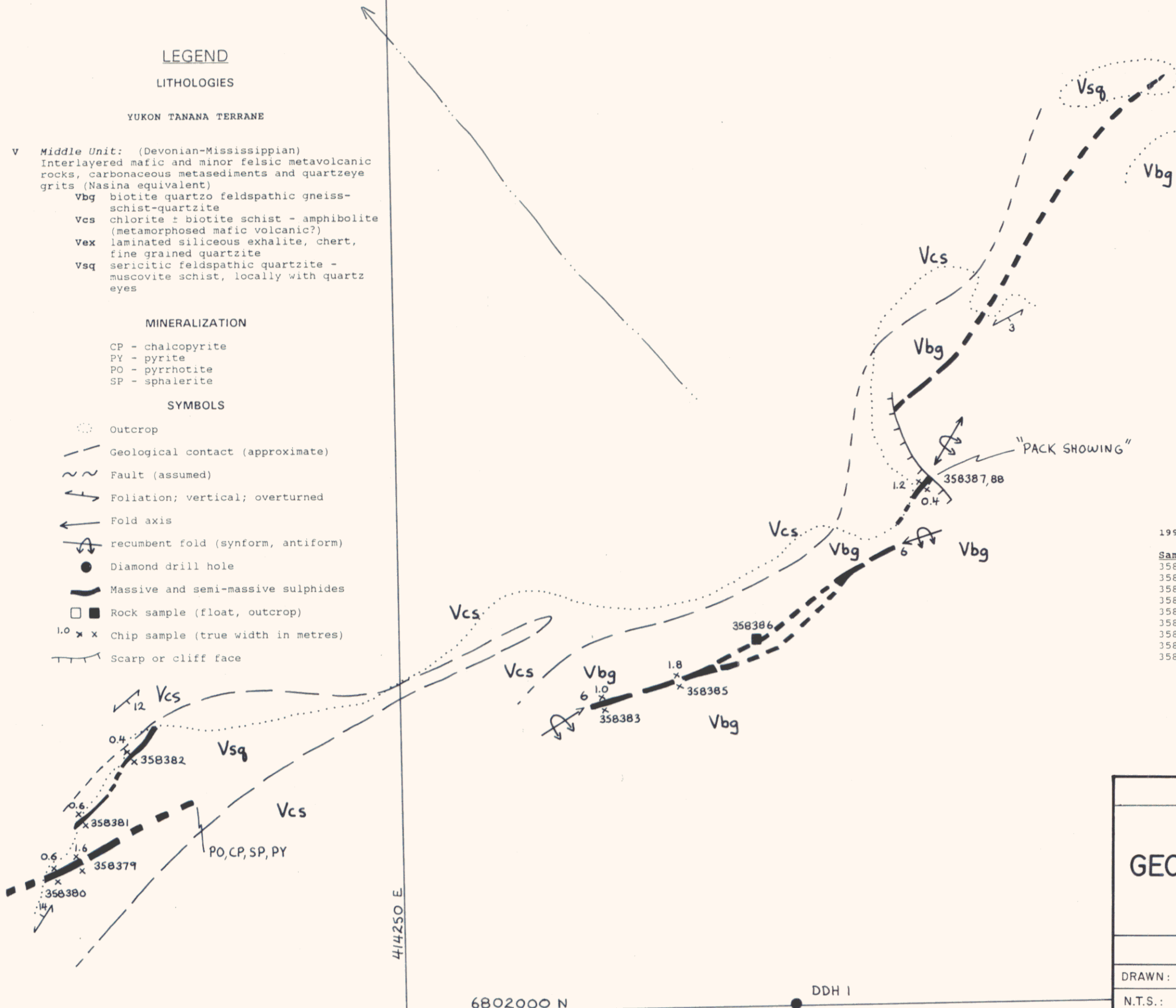
MINERALIZATION

- CP - chalcopyrite
- PY - pyrite
- PO - pyrrhotite
- SP - sphalerite

SYMBOLS

- Outcrop
- - - Geological contact (approximate)
- ~ ~ ~ Fault (assumed)
- ↕ Foliation; vertical; overturned
- ↶ Fold axis
- ↻ recumbent fold (synform, antiform)
- Diamond drill hole
- ▬ Massive and semi-massive sulphides
- Rock sample (float, outcrop)
- 1.0 x x Chip sample (true width in metres)
- ┌ Scarp or cliff face

093203



1993 ROCK SAMPLE ANALYSES

Sample	Ag (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)
358379	8.2	4530	38	2024	1.88%
358380	17.6	3809	71	3788	2.17%
358381	12.4	1.30	29	820	9424
358382	12.2	6301	29	1326	1.26%
358383	8.8	1.40	47	910	8144
358385	5.4	3477	23	2776	6.60%
358386	17.4	114	39	3006	990
358387	5	1.11	19	3078	11.10%
358388	3	3224	8	174	2958



ATNA RESOURCES LTD.

PAK 1-20 CLAIMS
 GEOLOGY & GEOCHEMISTRY
 PACK SHOWING

EQUITY ENGINEERING LTD.

DRAWN:	M.E.B./J.W.	MINING DIV.:	Watson Lake	FIGURE
N.T.S.:	105 G/7	SCALE:	1:1000	5
DATE:	FEB. 1994	REVISED:		

