

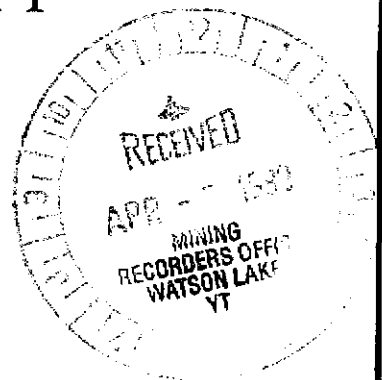
093 978

1998 ASSESSMENT REPORT

on the

MAT PROPERTY

YUKON TERRITORY
NTS 105F/10
61°32'N 132°35'W



ATNA RESOURCES LTD.
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March 1, 1999



This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of \$ 2700.00.

M. B. K.
Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

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EXECUTIVE SUMMARY

The Mat claims of the Mamu property are located in the south-central Yukon Territory and consist of 40 contiguous claims located along the McConnell River on Pass Peak map sheet (NTS 105F/10). The current claim block is under option to Atna Resources Ltd. from Oro Bravo Resources Ltd. The claims were optioned as part of a package after the discovery of the Wolf deposit within similar rocks 60 km to the SE.

The 1998 field program was operated by Atna and consisted of geological mapping, and geochemical sampling. The claims are underlain by intermediate to felsic volcanic rocks with rare argillite which are intruded by diorite and/or syenite bodies. A prominent gossan within the felsic volcanic rocks was geochemically (talus-fines) sampled but only background values of all elements analyzed were found. No new showings were discovered during the mapping and existing mineralization on the east side of the property is fairly insignificant. A well-known showing on the west side of the property was not investigated. Based on the results of current and previous work, no further exploration is proposed at this time.

1. INTRODUCTION

This report describes work completed on the Mat claims portion of the Mamu property during 1998. The property, consisting of the Mamu-Bravo-Kulan-Mat claims, was optioned from Oro Bravo Resources Ltd. for its zinc, lead, and silver potential. The property was thought to contain rocks similar to that which hosts the Wolf and MM volcanogenic massive sulphide deposits. Mapping on the Mat claims was completed by Georgina Price between July 3 and July 19, 1998.

The Mamu-Bravo-Kulan-Mat Claims (herein referred to as the "Mamu Property") is underlain by Mississippian age mafic and felsic volcanic rocks that have been intruded by coeval syenite to diorite plugs, sills (?) and dykes. A few massive pyrite showings of possible volcanogenic massive sulphide (VMS) affinity have been found on the Mamu claims. As well, a few areas of widely spaced quartz veins or vein stockworks bearing galena and sphalerite were discovered on both the Mamu and Mat claims. These veins produce soil geochemical anomalies that are similar, but unrelated to, massive sulphide mineralization.

The purpose of mapping the Mamu Property was to: explore for VMS occurrences; determine the stratigraphic and structural framework within which the geological, geochemical and geophysical data could best be interpreted; and determine if the Mississippian age felsic volcanic stratigraphy bears any similarity to that at the Wolf, MM, Fire, Tree or Ice properties all of which have VMS deposits or bona fide massive sulphide occurrences.

1.1 LOCATION AND ACCESS

The Mat claims are located on the Pass Peak map sheet, NTS 105F/10, centered at approximately 61°32'N 132°35'W (UTM 6824000 N, 630000 E), (Fig.1.1). During the 1998 field season, access to the claim group was gained by helicopter based in Ross River, located approximately 40 km to the north. The crew was housed at the Ketzia River mine site located approximately 15 km to the east.

The claims cover sub-alpine to alpine terrain within the St Cyr range of the Pelly Mountains. Elevations on the claim group range from 1,220 to 1,830 metres. The majority of the claim block is covered with a thin veneer of talus or colluvium. Overall outcrop exposure averages less than 10%.

1.2 CLAIMS

The Mat area consists of 40 contiguous mineral claims covering approximately 836 hectares (Fig. 1.2). The property is owned by Oro Bravo Resources Ltd. Atna Resources Ltd. has an option to earn 60% interest in the property by completing an escalating series of field work programs. The claims are recorded in the Watson Lake Mining District as follows:

Table 1: Claim Data

Name	Grant number	Expiry date*
Mat 1-14	YB70114-YB70127	October 13, 2003
Mat 17-30	YB70128-YB70141	October 13, 2003
Mat 31-36	YB88921-YB88926	March 4, 2003
Mat 39-44	YB88927-YB88932	March 4, 2003

* with acceptance of this report.

1.3 HISTORY

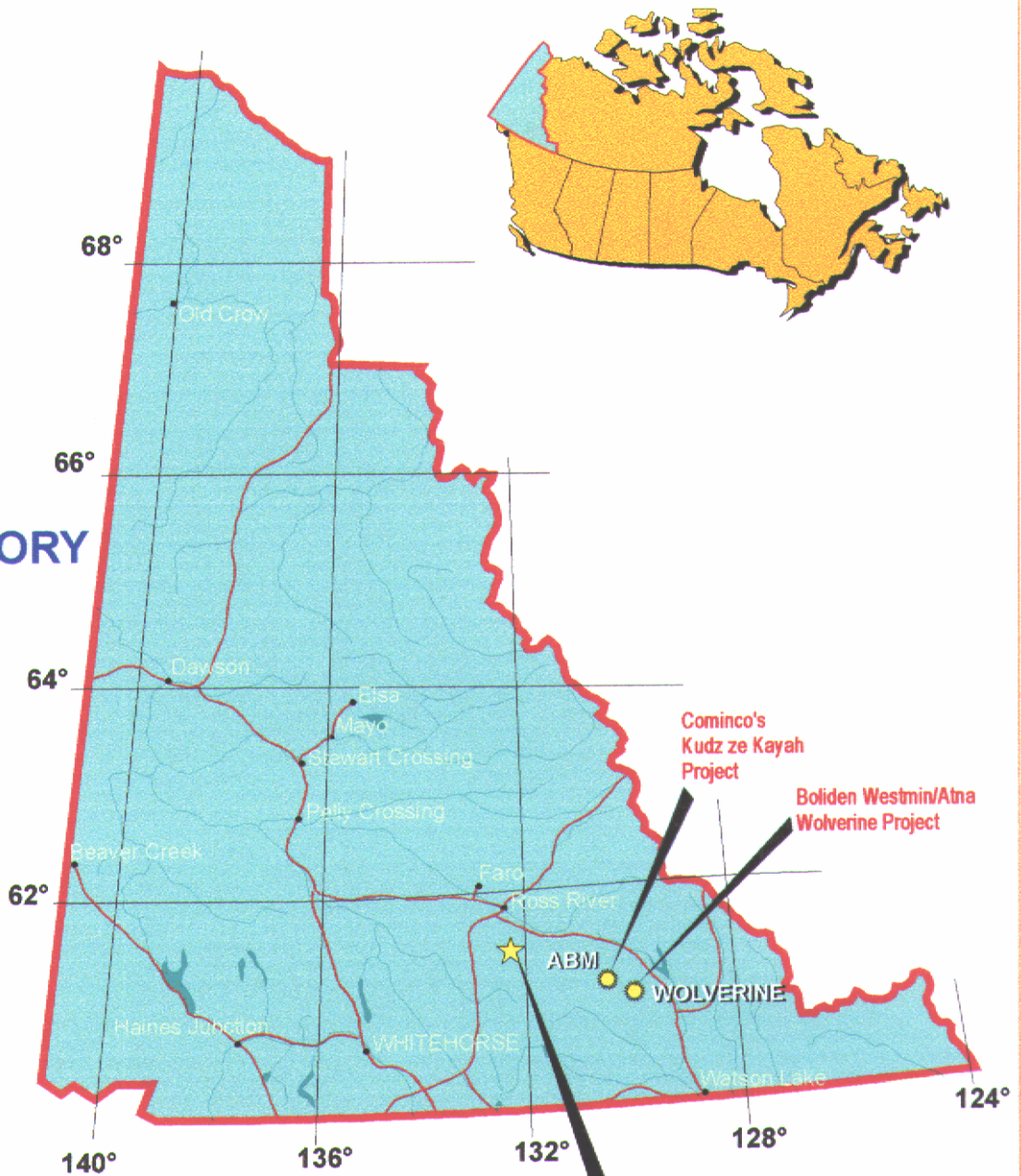
Atna Resources Ltd. optioned the claims as part of a larger property in 1997 after discovering the Wolf massive sulphide deposit within similar rocks 60 km southeast of the Mat claims. Evidence of past hand trenching was found on the claims but written record of this work was not found.

1.4 1998 EXPLORATION PROGRAM

During the 1998 field season, geological mapping, and soil sampling was carried out on the Mat claim block. Two contour soil lines were done on a gossan- slope at the northern end of the Mat Claims, and twenty-four samples were collected. An additional set of contour soil lines were run across the stratigraphic sequence, on the south slope above the McConnel River, immediately southeast of the Mat property and on the adjoining claims of the Mamu property. Data from these lines does not indicate the presence of a mineralized horizon trending onto the Mat claims.

Geological mapping on the Mat claims was completed in conjunction with work done on the Mamu-Kulan-Bravo claims. Property geology is, therefore, presented as a part of the larger mapping program.

YUKON TERRITORY



MAMU PROPERTY MAT CLAIMS

LOCATION MAP
MAT CLAIMS
PELLY MOUNTAINS REGION
YUKON TERRITORY

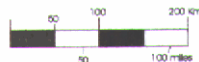


Figure 1.1



2 GEOLOGY

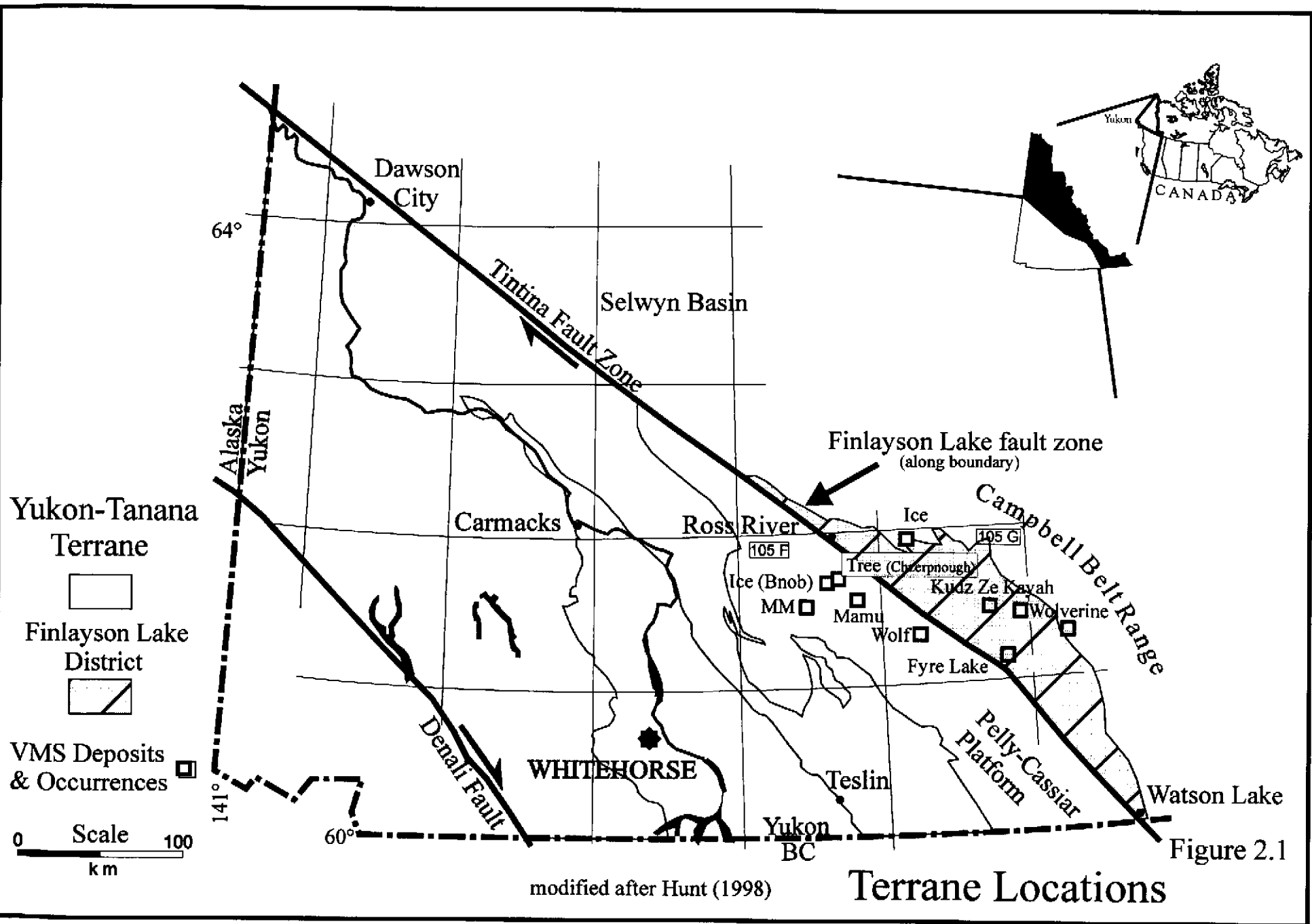
2.1 REGIONAL GEOLOGY

The volcano-sedimentary rocks which host the Wolf and MM deposits as well as the Mat claims form a narrow arcuate belt that extends 80 kilometres along a northwesterly trend within the Pelly Mountains of the southern Yukon (Fig. 2.1). These rocks have been termed the Pelly Mountains Volcanic Belt (PMVB) by Hunt (1999) and are characterized by high potassium content and, locally, bedded barite and volcanogenic massive sulphide deposits and showings. The PMVB is early to middle Paleozoic in age and occurs within the Pelly-Cassiar Platform, considered to be part of ancestral North America (Tempelman-Kluit, 1977). The tectonic framework for the Pelly Mountains area is described by Gabrielse and Yorath (1991), Tempelman-Kluit and Blusson, (1977) and Gordey (1977) and is summarized below.

The miogeoclinal sequence and related rocks which underlie much of the Pelly Mountains area are part of a large area about 70 km wide and 600 km long that is referred to as the Pelly-Cassiar Platform (PCP). The PCP formed slightly outboard of, but parallel to the craton edge and consisted of a thick accumulation of volcanic rocks and related sediments upon which shallow water sedimentation, predominantly carbonate, took place until late Devonian time. To the northeast of the PCP during late Proterozoic through to Silurian time, a sequence of shallow water carbonates, tuffaceous shales and andesitic rocks were deposited on the western edge of ancestral North America in the Selwyn Basin and, to the south, in the Kechika Trough.

During Late Devonian to Mississippian time, shale, greywacke, and chert pebble conglomerate was deposited over much of the PCP and Selwyn Basin. These rocks were derived from a westerly source, or from locally uplifted parts of the PCP. Felsic igneous activity, including intrusion and volcanism, occurred locally within the PCP, possibly within rifts or graben-like structures created by variable uplift and block faulting within the platformal rocks. Sedimentation resumed within PCP sub-basins during the Upper Triassic.

Deformation of the Paleozoic rocks took place post-Late Triassic and consisted of compression and/or transpression along a northeasterly axis which resulted in northwesterly trending and northeasterly verging folds and southwesterly dipping thrust faults. The Anvil-Campbell Allocthon, part of the Omineca Crystalline belt, was emplaced during this event as a large thrust-sheet and is now preserved as local klippen on mountain ridges. An anastomosing system of steeply dipping, strike-slip faults related to movement along the northwesterly trending Tintina Fault cuts the folds and thrust faults and extends for up to 20 kilometres southwest of the Tintina Trench. Late normal faults cross-cut earlier structures and divide the region into a number of panels which commonly represent different structural levels. Cretaceous intrusions develop thermal and structural aureoles in the western part of the Pelly Mountains. Metamorphism and degree of deformation varies from block to block but generally increases in a westerly direction and varies from lower to upper greenschist facies.

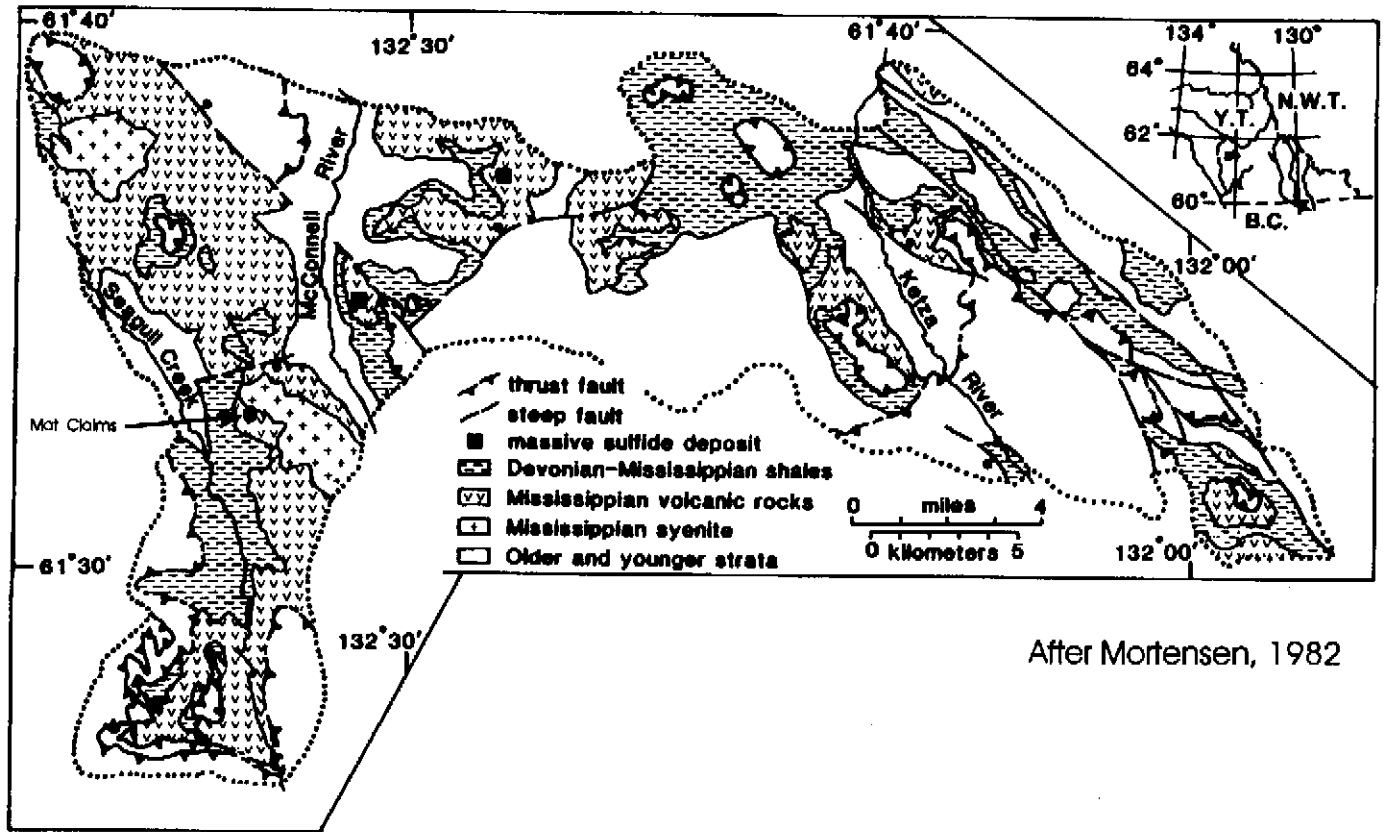


The Pelly Mountains Volcanic Belt is composed of localized volcanic centers separated by basins in-filled with sediments and volcanoclastic rocks. Associated with these volcanic rocks are at least two VMS deposits (the Wolf and the MM) and a number of historical showings, including the Chzerpnough (Fire/Tree claims), and the Bnob (Ice claims).

The volcanic rocks are predominantly felsic, but in some areas significant accumulations of andesite to basalt occur. The most common feature of the belt are flows, epi-zonal sills, and small plugs of trachyte. The trachyte flows and/or sills are laterally very extensive, probably due to low magmatic viscosity caused in part by high alkali element content. Typically the trachyte contains significant amounts of pyrite which gives rise to extensive gossans. The trachytes are commonly cream coloured, with very fine to medium grained phenocrysts of feldspar and rare quartz and are locally massive, amygdaloidal or brecciated. Syenite intrusions have been noted at a number of locations within the PMVB (Mortensen, 1981; Morin, 1977) and are thought to be rounded plugs which represent volcanic feeders. Although they may still represent volcanic feeders, drill data from the Wolf and Ice properties indicates that the syenite intrusions are sills.

The structural and stratigraphic relationships of the Pelly Mountains Volcanic Belt with other parts of the Pelly-Cassiar Platform are not always clear. In the southern part in the belt near the Wolf and Fox claims (Fig. 2.2), the PMVB rocks are separated from platform carbonates and associated sediments by thrust, and possibly, steeply dipping normal faults. In the northeastern most part of the belt, immediately northeast of the Ketz River Mine site, the volcanic sequence is very thin ($\pm 100\text{m}$) and is overlain by chert and chert pebble conglomerate and underlain by shale. Both contacts appear conformable but are not well exposed.

The shale and conglomerate are considered age equivalent with the volcanic rocks that have been mapped in conformable relationships by Gordey (1977). On the Fire (Chzerpnough) and Tree claim area, the PMVB appears to conformably overlie, and in places be intercalated with, a relatively thick sequence of shale and minor greywacke. Similarly on the Mamu property, adjacent to the McConnel River, volcanic rocks conformably overlie an extensive shale-greywacke sequence. On the Ice (BNOB) property, between the Tree-Fire and Mamu properties, the volcanic rocks are surrounded by an argillite-limestone sequence that appears to be continuous with the shale-sequence of the Fire property. Gordey (1977) describes a Siluro-Devonian assemblage of shallow water dolomite and platy siltstone which represent a stable marine carbonate bank environment, and are supposed basement for the PMVB. The Siluro-Devonian siltstones, however, are quartz bearing and tan weathering and do not seem to be a good match with the shale attached to the Pelly Mountain Volcanic rocks. Similarly, the younger Triassic sedimentary package has not been observed in contact with PMVB. Consequently, there is little or no contact information that gives a clear indication of the tectono-stratigraphic environment in which the PMVB was deposited other than the nature of the rocks within the belt itself.



After Mortensen, 1982

FIG. Distribution of Upper Devonian and Mississippian strata in the study area in the central Pelly Mountains, Yukon Territory.

ATNA RESOURCES LTD.		
MAMU PROPERTY MAT CLAIMS Regional Geology		
NTS 1:05F & 1:05G		Date Dec /98
Scale As Shown	DWG by RGW	Figure 2.2

The platformal setting on the continental margin, the high potassium geochemistry of the volcanic rocks, and the presence of bedded barite and volcanogenic massive sulphide deposits indicate that the Pelly Mountain Volcanic Belt was likely deposited in a continental rift-type environment (Mortensen and Godwin, 1982). The coarse volcanic debris flows that overlie the Wolf deposit indicate a high energy environment consistent with a graben type structure.

2.2 PROPERTY GEOLOGY

At the Mat Claims the outcrop is minimal, and attempts were not made to correlate units. Insufficient structural measurements were available on the Mat Claims to determine if the "Mat Area" is of the same structural domain as the "Mamu Area."

The exposed volcanic rocks on the Mamu Property have generally been altered and deformed to such an extent that protolith textures are destroyed, and primary compositions obliterated. Proximity of such a large volume of intrusive rock may account for the degree of alteration and deformation. Figure 2.3 is the generalized area geology for the Mamu property.

Stratigraphic topping directions are not known, and the volcanic rocks exposed on the Mat Claims are somewhat different from those seen at the Bravo-Mamu-Kulan claims. Rock types seen on the Mat claims are described in the following section.

2.2.1 LITHOLOGIES

Geological mapping was carried out on the Mat and Mamu properties as a single project. For clarity, only geological descriptions pertaining to the Mat claims have been included herein.

INTRUSIVE ROCKS

RHYOLITE DYKES: white, very fine grained, massive, hard and siliceous, cross-cuts diorite (Mat Claims only).

LAMPROPHYRE DYKES: black to dark brown, massive hard very fine grained, locally altered to massive biotite-chlorite and strongly foliated (not foliated, and moderately magnetic at the Mat Claims).

DIORITE: massive dark to medium gray-green, coarse grained, interlocking white subhedral feldspar and mafic minerals (altered to chlorite), massive to locally foliated, locally cross-cut by planar and folded 2-20 centimeter quartz veins, local gossan development with traces of very fine grained disseminated pyrite, blocky to flaggy fracture, appears to cross-cut syenite.

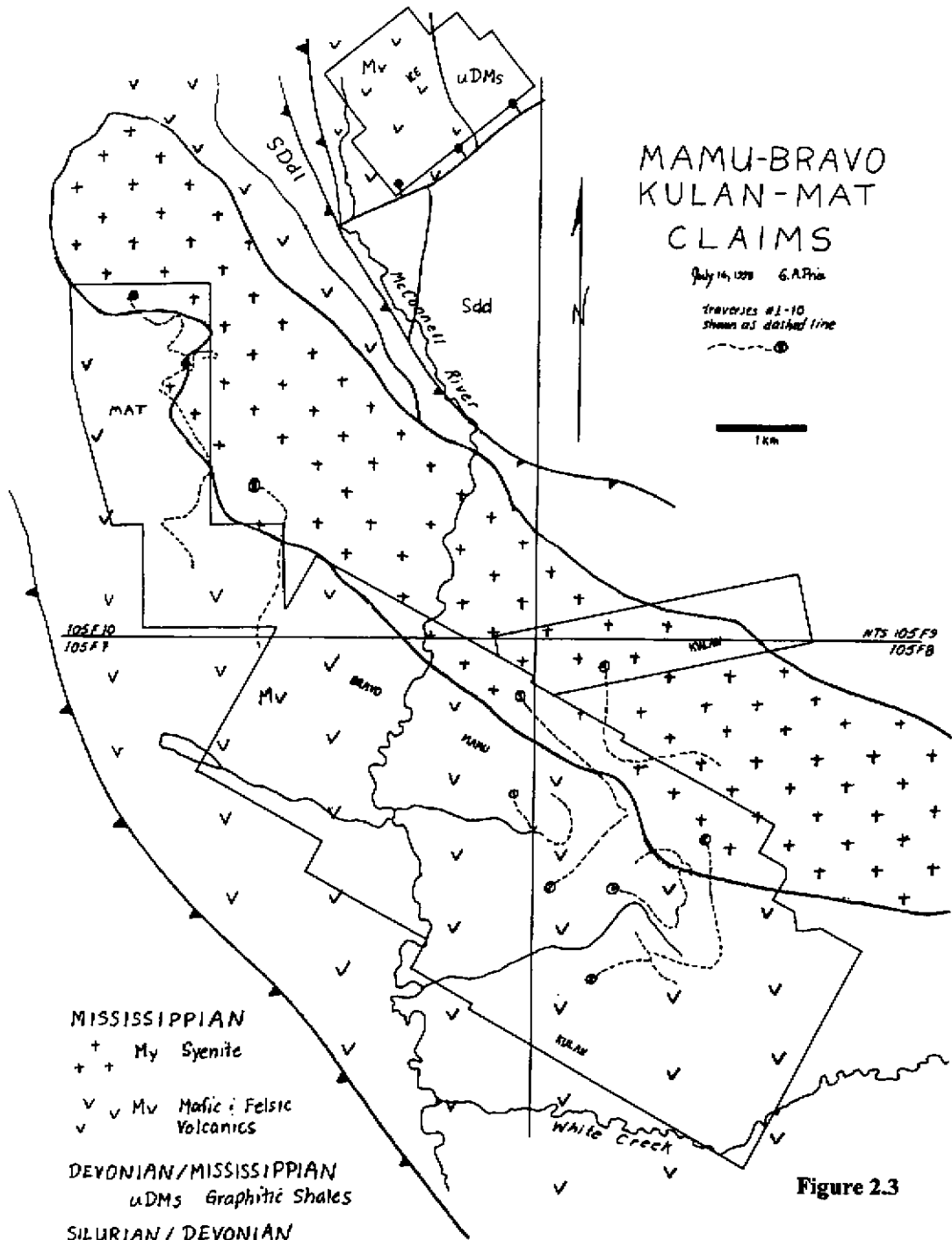


Figure 2.3

(Regional Geology from: Tempelman-Kluit, 1977)

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**MAMU PROPERTY
Mat Claims
Regional Property Geology**

NTS 105F/10		Date Dec /98
Scale As Shown	DWG by RGW	Figure 2.3

SYENITE : medium pink/gray/blue, massive to locally foliated, zoned and medium grained to very coarse grained (0.5-10.5 mm crystals), locally cross-cut by planar and folded 2-20 centimeter quartz veins, local 'classic' labradorite with interstitial magnetite, blocky fracture, variable alteration, locally appears as gneiss with compositional layering, forms a NW-SE trending large 12x5 km pluton that bounds the Mamu property to the north and northeast.

META-VOLCANIC ROCKS

TRACHYTE: pale gray, amygdaloidal and vesicular (up to 8cm amygdules), locally pillowed with chert/siliceous tuff as pillow interstices (trace jasper in pillow interstices), local flow breccia, variable proportions of interflow tuffs and lapilli tuffs, local gossan development, moderately to strongly foliated, variable weak to strong alteration (quartz-sericite), local very strong silicification, massive to flaggy fracture, contacts appear conformable, has the most readily identifiable protolith, (massive and fine grained having rare poorly preserved pillows at the Mat Claims).

RHYOLITE FLOWS: white, massive, vague ghosts after phenocrysts, local concentrations of 1-2 mm amygdules filled with pyrite, not foliated, massive, (only seen on the Mat Claims, and not the Mamu-Bravo-Kulan Claims).

FELSIC FINE TUFF (SERICITE-QUARTZ SCHIST): pale green-gray, strongly foliated, rare local preservation of bedding, strongly altered to sericite, locally altered to white clay, flaggy fracture, (locally well bedded, and interbedded with minor chert at the Mat Claims).

FELSIC QUARTZ CRYSTAL TUFF (QUARTZ-SERICITE SCHIST): medium to pale gray, 15-40% 1-4 mm quartz crystals, remainder is sericite, strong penetrative foliation, flaggy fracture, (only seen on the Mat Claims, and not the Mamu-Bravo-Kulan Claims).

MAFIC-INTERMEDIATE FINE TUFF: chlorite altered, very fine grained, fissile, bedding not seen, flaggy fracture.

META-SEDIMENTARY ROCKS

ARGILLITE: black, fine grained, thin bedded (only seen at the Mat Claim).

2.2.2 STRUCTURE

A detailed discussion of structure on the Mat Claims is excluded due to insufficient data. Generalized observations were as follows.

Rocks at the Mamu property are highly deformed. Protolith textures and compositions are poorly preserved. Primary bedding has only been observed at five locations. The majority of rocks are strongly foliated and have flaggy fracture.

On a regional scale, the Mamu Property area is bounded by two northwest trending, southwest dipping thrust faults (Fig. 2.3). One could postulate that there may be parallel and related minor thrust faults at the Mat Property, however, no faults were recognized in the limited outcrop.

In comparison to the strata at the Fire, Ice, Tree, and Wolf-Fox properties, the rocks underlying the Mat property are strongly deformed. This should have little to do with the presence or absence of VMS style mineralization. However, should VMS mineralization be present, one would expect massive sulphide bodies to be found within the hinge area of folds.

2.2.3 ALTERATION

All units within the Mamu Property have been metamorphosed to the lower greenschist facies mineral assemblage during regional scale metamorphism. This alteration assemblage in turn may have been changed during contact metamorphism associated with intrusion of the diorite/syenite. Hydrothermal alteration due to the deposition of VMS mineralization, if it is in fact present, may be completely masked by the aforementioned two processes. The final resulting alteration minerals include, in order of abundance; sericite, quartz, k-feldspar, chlorite, and ankerite. It has been assumed, in the absence of whole rock chemical analyses, that the chloritic rocks are of mafic protolith, and the sericitic (+/- quartz) rocks are of felsic protolith.

Adjacent to the diorite and syenite intrusions, there is a preponderance of quartz veins, both in the intrusive rocks and adjacent country rock. The volcanoclastic rocks immediately next to the diorite and syenite tend to be preferentially silicified and bleached.

Gossan development appears to crosscut stratigraphy. On the Mat claims, there is a 320x120 metre gossan that is bound by syenite-diorite on one side, and very fine felsic tuff with minor interbedded chert on the other. The gossanous material includes felsic tuff, felsic-intermediate tuff, minor argillite, and pillowed (?) trachyte. Although prospecting of the gossanous area did not reveal any significant mineralization, two contour soil (talus-fines) lines were completed to determine if there was any covered mineralization.

Relative to the volcanic stratigraphy in areas hosting volcanogenic mineralization within the PMVB, the Mat property has significantly less sericite-ankerite alteration and there is a lack of baritic float.

2.2.4 MINERALIZATION

During the mapping of the Mat claims, no base metal sulphides were discovered beyond any mineralization that was previously known. Trace amounts of galena and sphalerite in quartz veins cutting diorite were found at two locations on the Mat Claim, one of which was in a blasted trench. The large gossan at the north end of the Mat Claims was prospected and sampled. It is a strongly oxidized with resultant supergene (clay) alteration occurring locally. Disseminated pyrite in concentrations ranging from trace to

prospected and sampled. It is a strongly oxidized with resultant supergene (clay) alteration occurring locally. Disseminated pyrite in concentrations ranging from trace to about 10% account for this large area of iron staining. The gossan boundaries are sharp, one being intrusive diorite, and the other being very fine tuff. The pyrite appears to be developed only in the massive trachyte, a feature which is common for the Pelly Mountain Volcanic Belt.

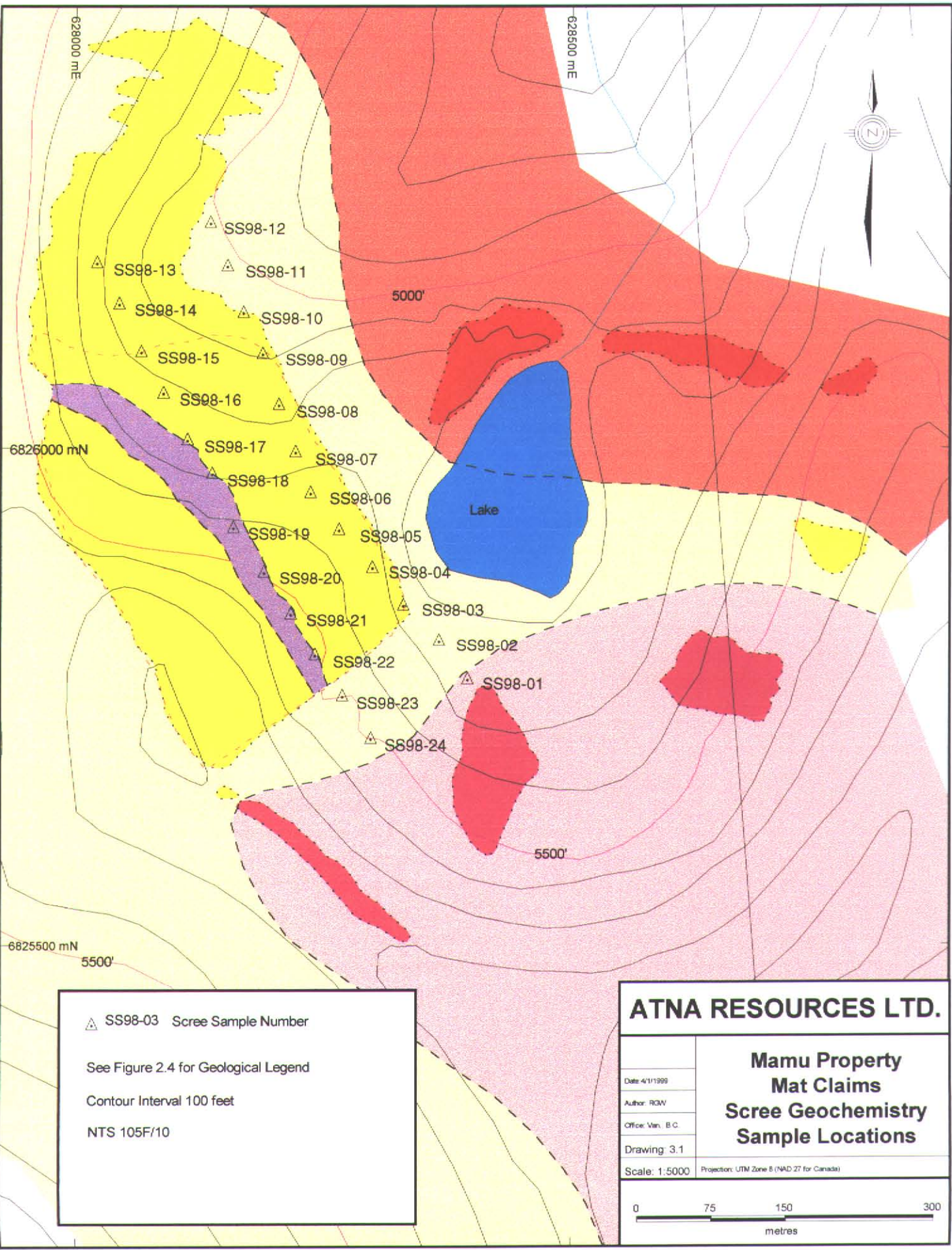
3 GEOCHEMISTRY

The 1998 geochemical program consisted of contour soil (talus fines) sampling. A total of 24 samples were collected from within or below the gossan area, figure 3.1.

3.1 SOIL GEOCHEMISTRY

The samples were collected from shovel or mattock dug holes which averaged 30 cm in depth. Talus fines or scree slopes were placed in kraft bags for air drying prior to shipment. All samples were analyzed by Acme Laboratories of Vancouver, B.C. using partial digestion followed by 30 element ICP detection. Appendix I contains certificates of analysis from Acme Laboratories.

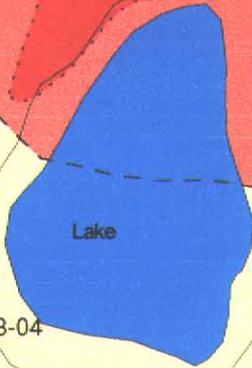
Results for talus fines samples are not considered anomalous. Figures 3.2 and 3.3 show Zn and Pb values respectively. The highest Zn result is 140 ppm while Pb ranges to 46 ppm. Other elements within the ICP analysis package are similarly at background levels. Considering that mechanical concentration is common in the screening stages of soil samples, it must be concluded that no bedrock sources of Pb and Zn are present within the gossanous area sampled by the contour geochemistry.



628000 mE
628500 mE
6826000 mN
6825500 mN

5000'

5500'



▲ SS98-03 Scree Sample Number

See Figure 2.4 for Geological Legend

Contour Interval 100 feet

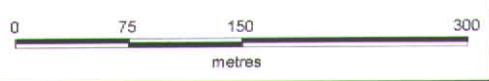
NTS 105F/10

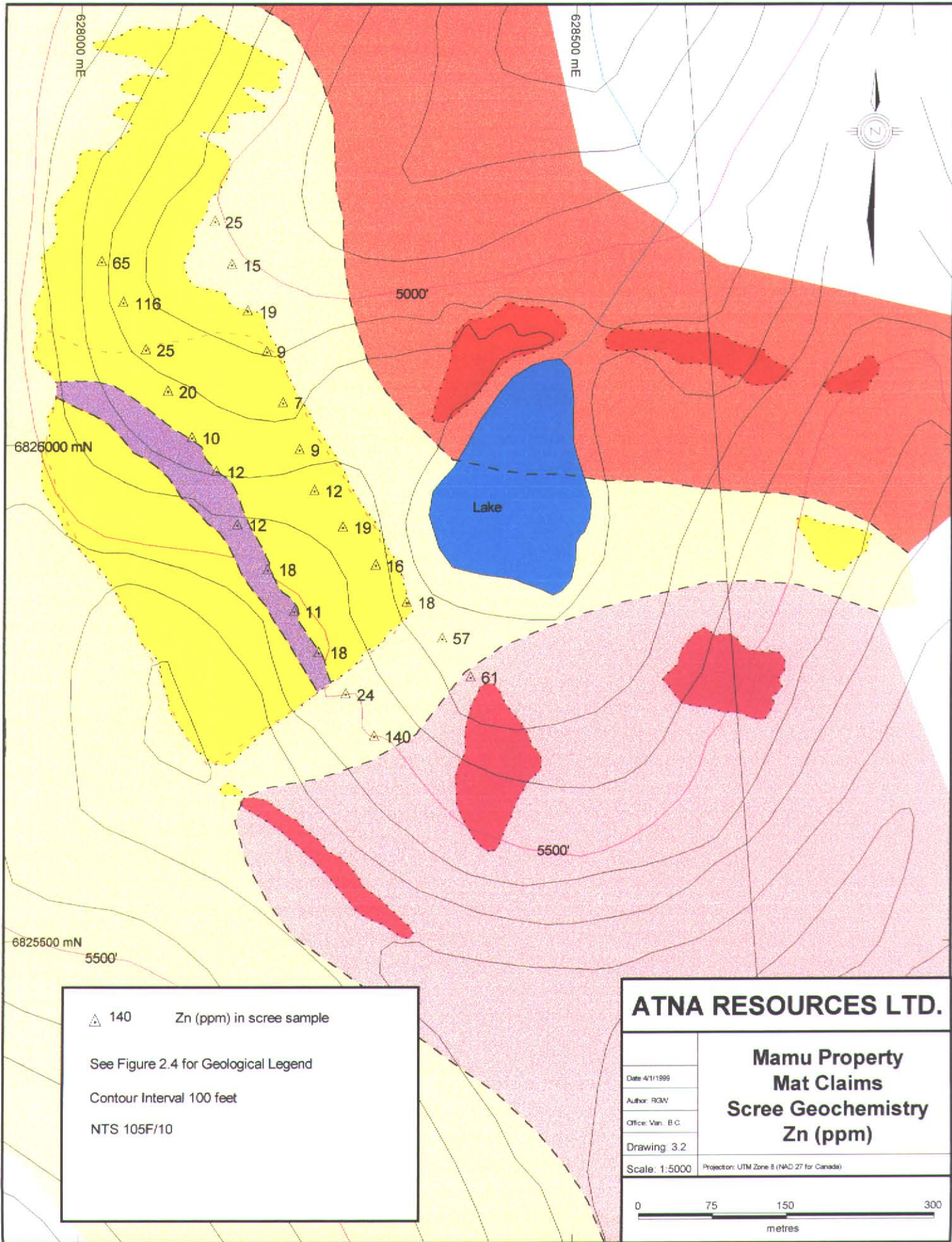
ATNA RESOURCES LTD.

**Mamu Property
Mat Claims
Scree Geochemistry
Sample Locations**

Date: 4/1/1999
Author: RGW
Office: Van. B.C.
Drawing: 3.1
Scale: 1:5000

Projection: UTM Zone 8 (NAD 27 for Canada)





△ 140 Zn (ppm) in scree sample

See Figure 2.4 for Geological Legend

Contour Interval 100 feet

NTS 105F/10

ATNA RESOURCES LTD.

**Mamu Property
Mat Claims
Scree Geochemistry
Zn (ppm)**

Date: 4/1/1999

Author: R3/V

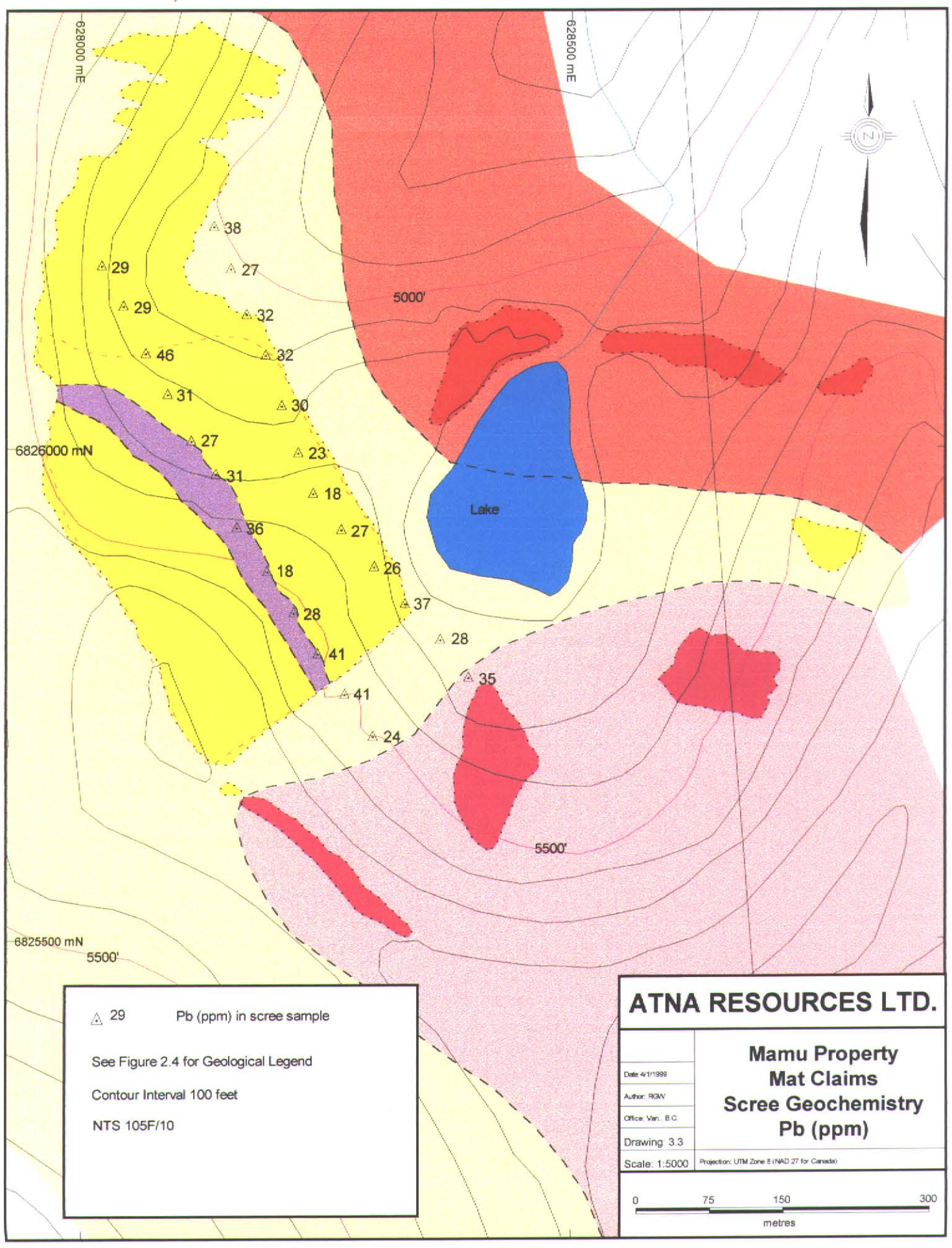
Office: Van. B.C.

Drawing: 3.2

Scale: 1:5000

Projection: UTM Zone 8 (NAD 27 for Canada)





628000 mE

628500 mE

6826000 mN

6825500 mN

5000'

5500'

Lake

▲ 29 Pb (ppm) in scree sample
 See Figure 2.4 for Geological Legend
 Contour Interval 100 feet
 NTS 105F/10

ATNA RESOURCES LTD.

**Mamu Property
Mat Claims
Scree Geochemistry
Pb (ppm)**

Date: 4/1/1999
 Author: RGV
 Office: Van. B.C.
 Drawing: 3.3
 Scale: 1:5000 Projection: UTM Zone 8 (NAD 27 for Canada)

0 75 150 300
 metres

4. DISCUSSION

Previous writers refer to the presence on the Mamu property of 'exhalite' which has varying amounts of disseminated pyrite. It is not clear that the siliceous zones within the quartz-sericite-pyrite rocks present are of exhalitive origin. The classical exhalitive 'components' are missing, namely, barite, chert, jasper, gypsum/anhydrite, magnetite, piedmontite, and/or rhodonite. Minor amounts of chert-like, fine grained, siliceous, and locally bedded rock found on the Mamu Claims were of such small extent as to not be mappable at 1:5000 scale (continuous over <5 metres).

Some general differences between the Mamu Property and the Wolf-Fox area in terms of stratigraphy include:

- 1) the classic trachytic alignment of 1-3 mm feldspars seen within the trachyte flows and tuffaceous rocks in the Wolf-Fox area was not observed at Mamu;
- 2) amygdaloidal trachyte is minimal at Mamu, and voluminous at Wolf-Fox;
- 3) protolith textures are preserved to a much greater degree at the Wolf-Fox;
- 4) extensive barite outcrops and/or float at Wolf-Fox and has not been found at Mamu;
- 5) heterolithic sulphide-fragment bearing epiclastic rocks that are hanging wall to mineralization at Wolf have not been seen at Mamu; and
- 6) intrusive syenite/diorite is considerably more voluminous and influential of alteration, structure, and possibly mineralization at Mamu.

5. CONCLUSIONS AND RECOMMENDATIONS

The Mat claims are underlain by felsic to intermediate volcanic tuffs with rare argillite beds, all of which are intruded by diorite - syenite. A prominent gossan, hosted by felsic volcanics, does not contain a geochemical signature characteristic of massive sulphide mineralization. No new sulphide showings were discovered during the mapping program and while trace amounts of Pb were seen, these appear to be related to quartz veining associated with the contact areas of intrusive rocks. The stratigraphy hosting the massive sulphide mineralization at the Wolf property is geochemically anomalous over a 30 to 200 metre stratigraphic width and a strike length in excess of 4 kilometres. Additionally, barite in outcrop or float is extensive and occurs both above below and peripheral to the massive sulphide mineralization. The lack of barite float and extensive geochemical anomalies suggest that significant volcanogenic massive sulphide mineralization is not present on the Mat claims. However, the possibility of mineralization within the lowermost stratigraphy on the Matt claims can not be conclusively ruled out at this point. Prospecting and geochemical sampling along the lowest elevation on the western side of the claims and also at similar or lower elevations east of the eastern boundary of the claims is recommended to fully investigate this possibility.

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APPENDIX I

GEOCHEMICAL CERTIFICATES

OF ANALYSIS



GEOCHEMICAL ANALYSIS CERTIFICATE



Atna Resources Ltd. PROJECT MATT File # 9803066

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Peter Holbek

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb
MAT98-01	2	11	35	61	<.3	21	2	367	1.44	16	<8	<2	11	7	<.2	<3	3	24	.24	.083	41	11	.53	106	<.01	<3	.95	.01	.16	2	20
MAT98-02	12	39	28	57	<.3	13	11	109	6.40	35	<8	<2	15	7	.2	<3	4	24	.02	.065	42	7	1.08	90	<.01	<3	1.69	.01	.13	<2	15
MAT98-03	6	21	37	18	<.3	4	3	58	8.13	58	<8	<2	17	6	<.2	<3	7	10	<.01	.069	30	13	.33	152	<.01	<3	.84	.02	.10	<2	<10
MAT98-04	5	21	26	16	<.3	4	2	70	8.75	59	<8	<2	22	5	<.2	3	8	8	<.01	.065	33	8	.86	84	<.01	3	1.61	.02	.12	2	15
MAT98-05	7	26	27	19	<.3	6	10	141	10.78	79	<8	<2	33	5	<.2	<3	7	12	<.01	.062	27	12	.62	131	<.01	<3	1.64	.01	.10	<2	15
MAT98-06	6	17	18	12	<.3	4	1	59	7.07	39	<8	<2	37	2	.3	<3	5	9	<.01	.031	36	13	.84	278	<.01	<3	1.71	.01	.14	<2	<10
MAT98-07	8	23	23	9	<.3	3	1	44	8.02	54	<8	<2	49	2	<.2	<3	4	10	<.01	.037	31	10	.46	74	<.01	<3	1.18	.01	.12	<2	15
MAT98-08	8	14	30	7	<.3	1	1	46	6.80	70	<8	<2	28	3	<.2	<3	<3	10	<.01	.023	40	9	.23	407	<.01	<3	.68	.02	.13	<2	<10
MAT98-09	10	11	32	9	<.3	2	2	58	6.66	62	<8	<2	28	4	.2	<3	3	4	<.01	.023	41	8	.21	124	<.01	<3	.59	.01	.12	<2	<10
MAT98-10	10	11	32	19	<.3	5	3	105	7.01	43	<8	<2	31	4	<.2	<3	<3	10	<.01	.021	48	14	.45	413	<.01	<3	1.28	.01	.30	<2	15
MAT98-11	6	8	27	15	<.3	7	3	111	6.80	50	<8	<2	20	3	<.2	<3	<3	6	<.01	.021	37	19	.38	522	.03	<3	1.02	.01	.45	<2	20
MAT98-12	7	11	38	25	<.3	6	2	85	3.68	61	8	<2	20	7	<.2	<3	4	7	.03	.058	52	8	.24	181	<.01	<3	.74	.01	.23	<2	15
MAT98-13	4	17	29	65	<.3	25	14	572	1.86	24	<8	<2	15	11	<.2	<3	4	18	.28	.093	33	32	.20	127	<.01	<3	.76	.03	.11	<2	20
MAT98-14	5	8	29	116	<.3	34	8	226	1.68	22	<8	<2	<2	14	1.1	<3	<3	40	<.21	.098	22	16	.55	164	<.01	<3	1.04	.03	.20	3	10
MAT98-15	5	9	46	25	<.3	8	4	101	5.71	88	<8	<2	15	6	.2	<3	3	10	<.01	.042	43	19	.23	282	.01	<3	.66	.01	.25	<2	10
MAT98-16	9	11	31	20	<.3	4	4	102	6.76	42	<8	<2	31	4	<.2	<3	4	6	<.01	.017	45	12	.39	458	.01	<3	1.20	.01	.26	<2	<10
MAT98-17	10	25	27	10	<.3	1	2	45	14.99	150	<8	<2	35	1	<.2	<3	8	7	<.01	.020	24	7	.26	90	.01	<3	.64	.01	.13	2	10
MAT98-18	10	24	31	12	<.3	3	2	62	15.85	113	<8	<2	49	3	<.2	<3	6	20	<.01	.038	23	10	.56	177	<.01	<3	1.05	.01	.14	<2	10
RE MAT98-18	10	24	33	13	<.3	2	2	62	16.27	116	<8	<2	50	3	.2	<3	5	20	<.01	.039	24	11	.58	187	<.01	<3	1.09	.01	.14	<2	15
MAT98-19	10	24	36	12	<.3	3	2	76	10.60	82	<8	<2	29	4	<.2	<3	6	18	<.01	.043	38	16	.51	187	<.01	<3	1.02	.02	.06	<2	15
MAT98-20	6	33	18	18	<.3	5	19	194	9.08	80	<8	<2	35	6	<.2	<3	7	7	<.01	.032	24	11	.39	236	<.01	<3	1.22	.01	.13	<2	10
MAT98-21	8	28	28	11	<.3	3	1	41	10.16	53	<8	<2	36	4	.2	<3	6	16	<.01	.064	35	15	.44	168	<.01	<3	1.08	.02	.12	<2	15
MAT98-22	6	24	41	18	<.3	3	3	59	9.33	65	<8	<2	20	6	<.2	<3	9	11	<.01	.080	31	13	.38	208	<.01	<3	.95	.02	.13	<2	<10
MAT98-23	14	27	41	24	<.3	5	5	54	10.21	66	<8	<2	12	11	<.2	<3	10	16	<.01	.079	26	17	.64	108	<.01	<3	1.17	.03	.11	<2	15
MAT98-24	3	11	24	140	<.3	21	14	199	2.12	10	<8	<2	12	14	.7	<3	4	20	.20	.097	17	23	.81	194	.02	<3	1.10	.01	.18	2	<10
STANDARD C3	25	65	35	162	5.4	37	12	776	3.28	57	18	<2	19	28	24.5	13	22	81	.55	.091	17	173	.61	149	.09	20	1.91	.04	.16	14	910
STANDARD G-2	1	3	<3	38	<.3	8	4	528	1.92	<2	<8	<2	6	73	<.2	<3	<3	41	.61	.096	6	77	.59	229	.13	<3	1.00	.07	.48	2	<10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.

THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LINTED FOR NA K AND AL.

- SAMPLE TYPE: TALUS FINES HG ANALYSIS BY FLAMELESS AA. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 24 1998

DATE REPORT MAILED:

Aug 4/98

SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

APPENDIX II
STATEMENT OF EXPENDITURES

Statement of Expenditures

Mamu Project (Mat Claims) 1998

Field-work: July 3 - 19, 1998

Geology

Consulting geological services: 3 days @ \$350.00/day	\$1050.00
Junior geologist: 2 days @ \$193.00/day	\$ 386.00

Geochemistry

24 samples: @ \$9.54/sample	\$ 228.96
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Transportation

Helicopter: 1.2 hrs @ \$725.00/hr	\$ 870.00
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Camp (all costs)

Pro-rated costs: 5 man days @ \$200.00/day	\$1000.00
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Reporting:

	\$ 800.00
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	<u><u>\$3534.96</u></u>
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APPENDIX III
GEOLOGIST'S CERTIFICATES
OF QUALIFICATIONS

CERTIFICATE OF QUALIFICATIONS

I, Robert G. Wilson, of 3328 West 15th Ave. Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am employed by Atna Resources Ltd. of 1550 - 409 Granville St., Vancouver B.C.
2. THAT I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology.
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 directly supervised between June 1 and September 3, 1998.

DATED at Vancouver, British Columbia, this 30th day of March, 1999.



Robert G. Wilson, P.Geo.

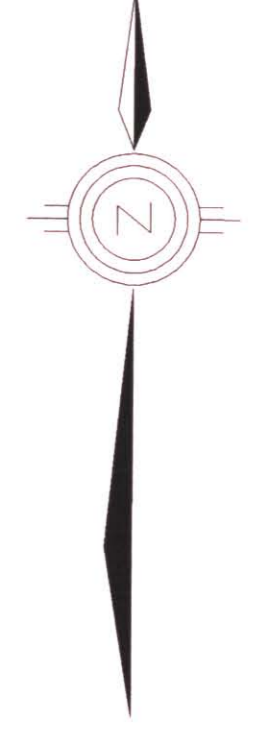
CERTIFICATE OF QUALIFICATIONS

I, Peter M. Holbek with a business address of 1550 - 409 Granville Street, Vancouver, British Columbia, V6C 1T2, do hereby certify that:

1. I am a professional geologist registered under the Professional Engineers and Geoscientists Act of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.
3. I have practiced my profession continuously since 1980.
4. I am Vice President of Atna Resources having a business address as given above.
5. I supervised the work program conducted on the Mamu Property (Mat Claims) as described in this report.



Peter Holbek, M.Sc., P. Geo.



GEOLOGICAL LEGEND

- INTRUSIVE ROCKS**
- RHYOLITE DYKES**
 Rhy dk
 white, very fine grained, massive, hard and siliceous, cross-cutting diorite (Mat Claims only).
 - LAMPROPHYRE DYKES**
 Lamp
 black to dark brown, massive hard very fine grained, locally altered to massive bottle-chlorite and strongly foliated (not foliated, and moderately magnetic at the Mat Claims).
 - DIORITE**
 Dior
 massive dark to medium grey-green, coarse grained, interlocking white subhedral feldspar and 'matrix' (altered to chlorite), massive to locally foliated, locally cross-cut by planar and folded 2-20 centimeter quartz veins, local gossan development with traces of very fine grained disseminated pyrite, blocky to flaggy fracture, appears to cross-cut syenite.
 - SYENITE**
 Syen
 medium pink-grey/blue, massive to locally foliated, zoned and medium grained to very coarse grained (0.5-10.5 mm crystals), locally cross-cut by planar and folded 2-20 centimeter quartz veins, local 'classical' labradorite with interstitial magnetite, blocky fracture, variable alteration, locally appears as gneiss with compositional layering, forms a NW-SE trending large 12x5 km pluton that bounds the Mamu property to the north and northwest.
- META-VOLCANIC ROCKS**
- TRACHYTE**
 Trac
 pale grey, amygdaloidal and vesicular (up to 5cm amygdaloids), locally pillowed with chertiferous tuff as pillow intercalations (trace Jasper in pillow intercalations), local flow breccia, variable proportions of interflow tuffs and lapilli tuffs, local gossan development, moderately to strongly foliated, variable weak to strong alteration (quartz-sericite), local very strong silicification, massive to flaggy fracture, contacts appear conformable, has the most readily identifiable growth, (massive and fine grained having rare poorly preserved pillows at the Mat Claims).
 - RHYOLITE FLOWS**
 Rhy #
 white, massive, vague phosho after phenocrysts, local concentrations of 1-2 mm amygdaloids filled with pyrite, not foliated, massive, (only seen on the Mat Claims, and not the Mamu-Bravo-Kulan Claims).
 - FELSIC FINE TUFF (SERICITE-QUARTZ SCHIST)**
 FITT
 pale green-grey, strongly foliated, rare local preservation of bedding, strongly altered to sericite, locally altered to white clay, flaggy fracture, (locally well bedded, and interbedded with minor chert at the Mat Claims).
 - FELSIC QUARTZ CRYSTAL TUFF (QUARTZ-SERICITE SCHIST)**
 QXTT
 medium to pale grey, 15-40% 1-4 mm quartz crystals, remainder is sericite, strong penetrative foliation, flaggy fracture, (only seen on the Mat Claims, and not the Mamu-Bravo-Kulan Claims).
 - MAFIC INTERMEDIATE FINE TUFF**
 MITT
 chlorite altered, very fine grained, fissile, bedding not seen, flaggy fracture.
- META-SEDIMENTARY RC**
- ARGILLITE**
 Arg
 black, fine grained, thin bedded (only seen at the Mat Claim).
- ⚡ Showing
 ∇ 55 Foliation (dp)
 † 35 Bedding
 † 73 Lineation

093 978

093 978

ATNA RESOURCES LTD.

MAMU PROPERTY MAT CLAIMS

GEOLOGY

Date: 7/1/1999
 Author: ROW/LE
 Office: Vancouver, B.C.
 Drawing: 14
 Scale: 1:5000 Projection: UTM Zone 8 (NAD 27 for Canada)

0 75 150 300 metres

Mat Claims Boundary

Seagull Creek