Amax Vancouver Office

1971 PRELIMINARY REPORT
GLADYS LAKE MoS_2 PROPERTY
Atlin Area, B.C.

October 1971. T.J.R. Godfrey

1971 Preliminary Report

TITLE	Gladys Lake MoS_2 Property
AUTHOR	T.J.R. Godfrey
DATE	October 14, 1971
COMMODITY	Mo
LOCATION- Area	Thirty miles east of Atlin
- Mining Division	Atlin
- Coordinates	Latitude 59°52'N, Longitude 133°05'W
- NTS	104 N 14
CLASS	Prospect Physical Work

AMAX VANCOUVER OFFICE

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ILLUSTRATIONS

INTRODUCTION

The Gladys Lake Molybdenite Property was first examined by AMAX during the summer of 1970. Tentative agreement on an option was reached and an extensive program of geological mapping, geochemical and rock sampling, road building and trenching was carried out from July 29 to September 2, 1970 at a cost of $59,000. Encouraging surface results led to a drill program in 1971 of 2421 feet of BQ core in five drill holes carried out at a cost of $82,000.

Total expenditures by AMAX on the property to September 30, 1971 are $141,000.

PROPERTY

The property, located 30 miles east of Atlin immediately south of Gladys Lake (See Figure 1), consisted of 232 full-sized claims staked intermittently from June to August 1969 by a group of prospectors (Messrs. K. Craft, T. Worbetts and K. Armstrong). Since AMAX took over the option the property has been consolidated to 59 full-sized claims and one fractional claim all of which are in good standing until 1973 (See Figure 2).

SUMMARY OF OPTION AGREEMENTS

Documents

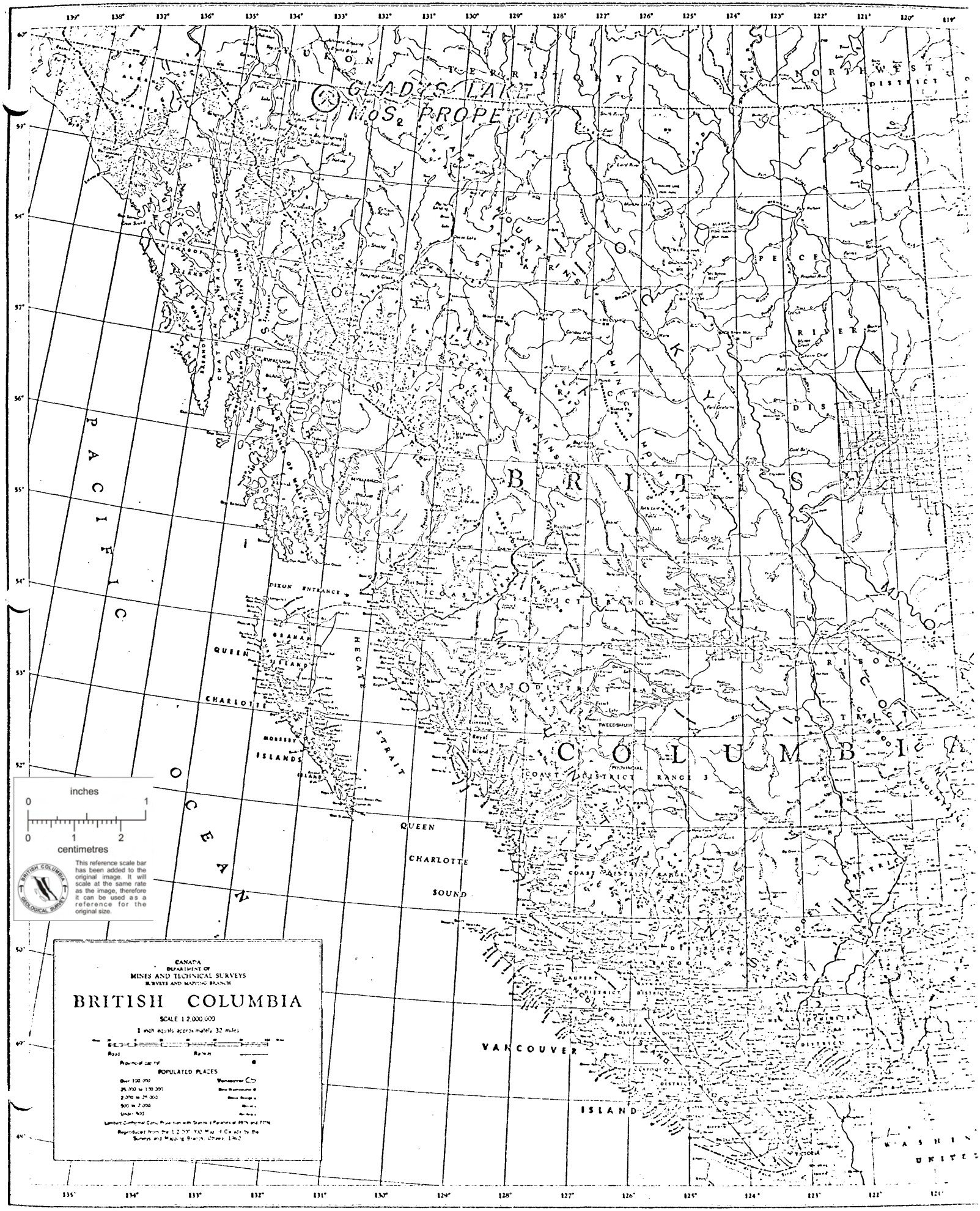
a) Agreement dated October 31, 1970 between the prospectors (Craft, Worbetts and Armstrong) and Simmons (George and Aubrey).

b) Escrow agreement dated October 31, 1970.

c) Agreement dated November 30, 1970 (of which agreement (a) is included as Schedule "A") between Simmons (George and Aubrey) and Amax Exploration, Inc.

History

The initial agreement between the Prospectors and Simmons was drawn up in 1969. This was later renegotiated by Simmons and AMAX in 1970 to correlate with the Simmons-AMAX agreement executed November 30, 1970.



GENERAL LOCATION MAP

FIG 1

Payments

	Prospectors		Simmons	Total
On Signing	Paid by Simmons		$13,000	$13,000 Paid
February 1, 1971	$10,000		5,000	15,000 Paid
February 1, 1972	10,000		7,500	17,500
February 1, 1973	15,000		12,500	27,500
February 1, 1974	30,000		15,000	45,000
February 1, 1975	230,000	OR	15,000	

$55,000 plus 200,000 escrow shares of a private company to be formed by Simmons with authorized capitalization of 3 million shares. Above at sole option of Simmons.

February 1, 1976		15,000
February 1, 1977		15,000
February 1, 1978		15,000
February 1, 1979		15,000
February 1, 1980		1,000,000
Total	$300,000	$1,128,000 see notes below

OR

$125,000 plus 200,000 escrow shares

If production is attained prior to February 1, 1980 (as defined by the tax laws of the Dominion of Canada) then Simmons will have the following options.

i) Lump sum payment of $1,000,000 in lieu of all further payments

ii) Receive in lieu of all further payments a net profit interest

10% if daily production is less than 10,000 tons
5% if daily production exceeds 10,000 tons

iii) Continue to receive payments as outlined above.

SUMMARY OF EXPLORATION

1970 Expenditures Including Payments $59,000

a) Grid Area 12,000 feet x 8,400 feet (Figure 6b in 1970 Report)

1. Physical Work - line cutting - 28.85 miles
   trenching
   road construction } 160 hours - D8

2. Geology - Scale 1" = 400'

3. Geochemistry - Soil sampling at 200 foot intervals along lines 800 feet apart

- Stream silt sampling 300 to 400 feet intervals along drainage channels.

4. Surface Sampling - 30 samples over intervals from one to twenty feet
5. Rock geochemistry - 34 composite samples run for Mo, Cu, Zn, W, Ag, SiO_2, CaO, K_2O and Na_2O.

b) Peripheral Claim Block

1. Geology - scale 1" = 1000'
2. Geochemistry - Soil sampling at 400 foot intervals along claim location lines.

1971 Expenditures Including Payments $82,000

1. Diamond drilling totalling 2421 feet of BQ in five drill holes.
2. Plane table survey of a 2000 x 1600 feet area over the main alaskite intrusion.
3. Trenching and access road construction

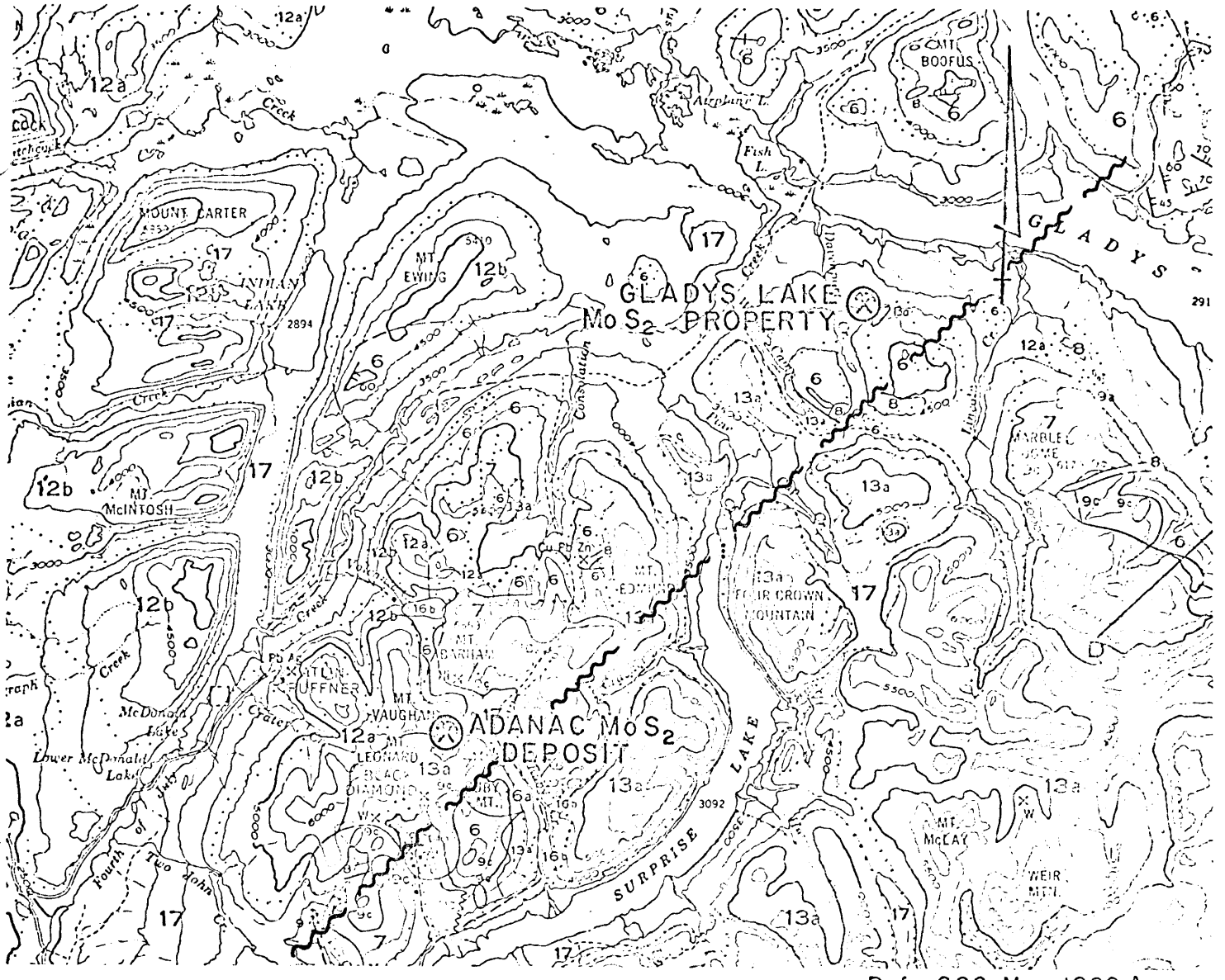
SUMMARY OF RESULTS

The molybdenite is associated with a small alaskite intrusion which lies adjacent to the Surprise Lake Batholith (Mesozoic) and within a northeasterly trending zone of deformation which passes through both the Adanac and Gladys Lake MoS_2 properties (See Figure 3).

The alaskite forms a ring dyke complex (diameter 2000 feet) within a large eliptical hornfelsed zone (7,500 x 11,000 feet) which is elongated in a northwesterly direction (See Figure 4).

Within the hornfelsed zone are three zones of alteration characterized by weak to intense silicification, bleaching and sericitization.

The quartz vein stockwork zone defined as a frequency of at least one vein per foot is roughly coincident with the Central Altered Zone and centered about the alaskite ring dyke complex.



Ref.: GSC Map 1082 A

LEGEND

Pleistocene and Recent

17 — *Glacial drift : alluvium*

Tertiary and Quaternary

16 — *Basalt flows*

Late Mesozoic

13 — *Alaskite*

Late Mesozoic

12 — *Coast Intrusions : Diorite to Quartz Monzonite*

Late Paleozoic and/or Early Mesozoic

9 — *Ultrabasic Bodies (Alpine Type)*

Late Paleozoic

6,7,8 — *Cache Creek Group ; Sedimentary and Volcanic Rocks*

Schematic representation of wide zone of transverse structural deformation and igneous activity.

AMAX EXPLORATION INC.

GLADYS LAKE MoS_2 PROPERTY

ATLIN MINING DIVISION —— BRITISH COLUMBIA

REGIONAL GEOLOGY MAP

Scale : 1 inch = 4 miles

N.T.S. File 104 N 14

Fig 3

Sparse molybdenite occurs as medium to finely disseminated flakes in quartz veins and dry fractures throughout the stockwork zone and in vein sets peripheral to the West Altered Zone.

Central Altered Zone - Alaskite Ring Dyke Complex (See Figure 5)

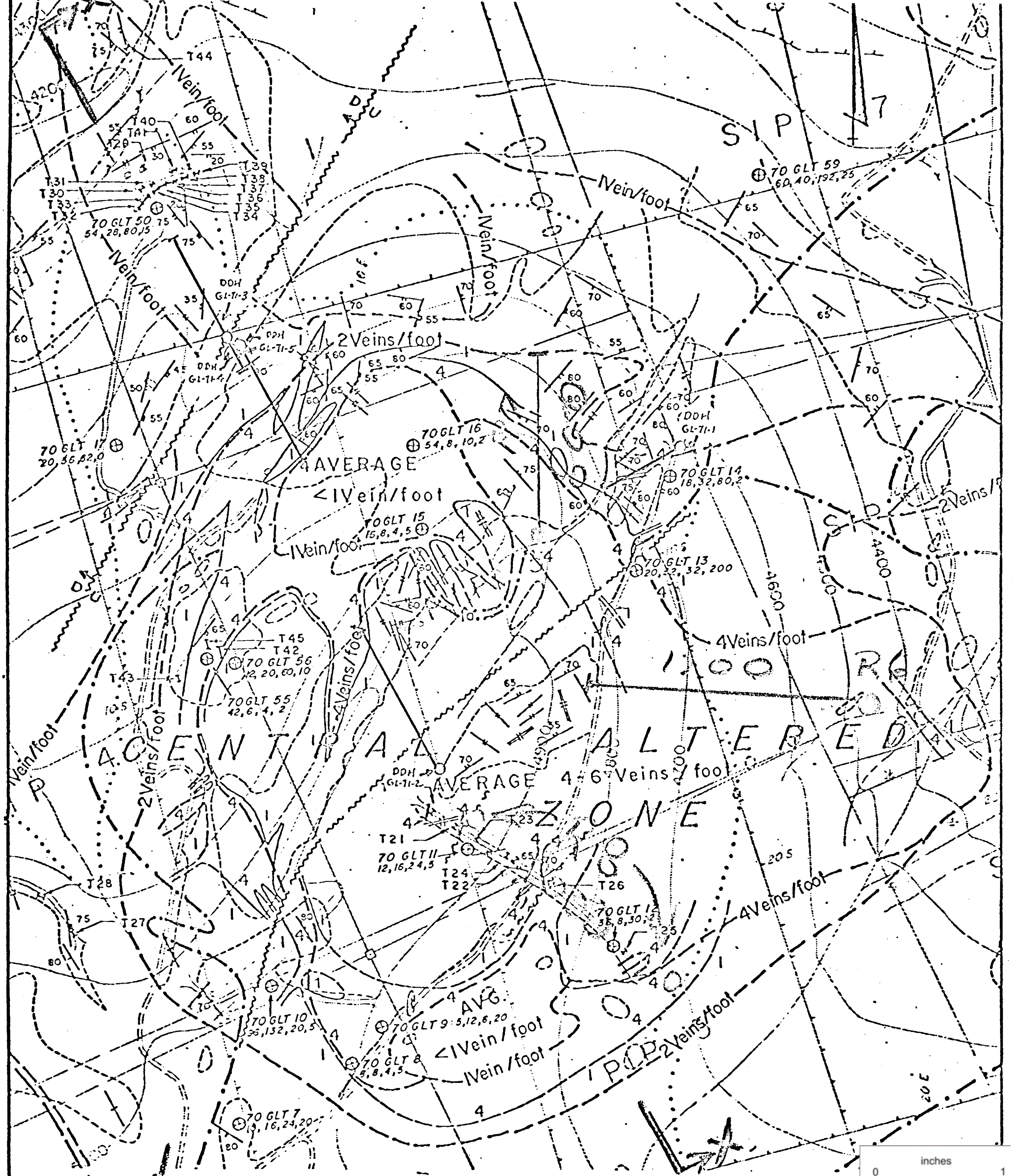
The moderate to intense alteration of the hornfelsed argillites in the Central Zone occurs around the periphery of the southern two thirds of the alaskite ring dyke complex as well as the whole of the central core (roof pendant?). The lack of alteration around the periphery to the north and northwest may be attributed to the inwardly dipping alaskite contact.

The quartz vein stockwork zone as outlined on the basis of the vein per foot contour coincides closely with the Central Zone of alteration.

The most intense veining (four to six veins per foot) occurs in the central core zone of hornfelsed argillites and extends in an easterly trending lobe across the alaskite to the outer altered hornfels. The alaskite bodies are less intensely veined with zones of less than one vein per foot observed in the central portions of the larger annular bodies of alaskite. This observation on surface was confirmed in DDH GL-71-2. The stockwork zone extends outside the altered zone around the northern periphery of the alaskite body as well as in an elongate stringer zone 300 feet wide which extends to the northwest from the collars of DDH 3, 4 and 5.

Molybdenite occurs in minor amounts throughout the stockwork zone. Drilling indicates a concentration along the inwardly dipping inner contact of the north annular body of alaskite (DDH 2).

The 1971 drilling program consisting of five holes totalling 2421 feet was carried out over the northern portion of the alaskite ring dyke complex.



Proposed

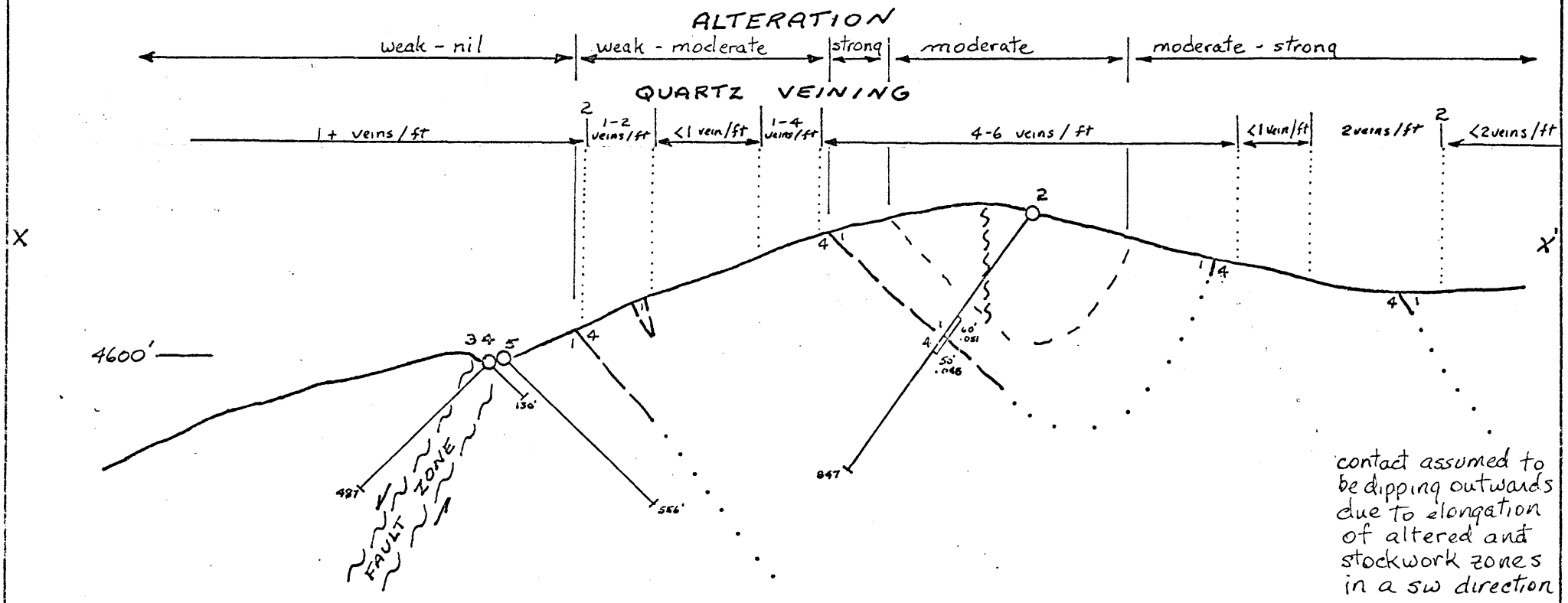
CENTRAL ATLERED ZONE

GLADYS LAKE MoS_2 PROPERTY

PLAN OF PROPOSED DIAMOND DRILL PROGRAM

Scale: 1inch = 400feet

1971
Fig. 25
N.T.S. File: 104 N 14



contact assumed to be dipping outwards due to elongation of altered and stockwork zones in a SW direction

CENTRAL ALTERED ZONE

GENERALIZED CROSS SECTION

XX' (looking west)

Scale 1" = 400'

1971 Fig 6

The location of the holes are shown in Figure 5 and were drilled with the following objectives.

DDH-1 -Primarily a hole for assessment purposes. Drilled to indicate the dip of the northeast contact as well as testing the nose of a 100 ppm molybdenum soil anomaly.

DDH-2 -A hole to test the central core of the complex which has over 4-6 quartz veins per foot and geochemical anomaly of +40 to +100 ppm Mo in soils.

DDH-3 -Test at relatively shallow depth the area of best observed MoS_2 mineralization on surface as well as the north lobe of the +100 ppm Mo soil anomaly.

DDH-4 -Abandoned - DDH-5 drilled in its place.

DDH-5 -A deeper hole to test the at depth configuration of the northern contact of the alaskite ring-dyke as well as testing the prominent northeast trending fault which is subparallel to faults in the Adanac Property which are believed to be localizers for MoS_2 mineralization.

Preliminary assay results from twenty-three 10 foot intervals are listed in Table I. All the core has been split and the remainder of the assays should be available before the end of October.

West Altered Zone

The West Altered Zone is centered about the nose of the syncline from the baseline north to an east-west trending gully. Rocks of Unit 3 are altered to a white sugary porous texture composed of quartz, feldspar and minor amounts of tremolite.

Quartz veining within the West Altered Zone consists of a widely spaced vein set of gently dipping (strike east-west dip 30°) wide barren white quartz veins. Around the north and east side of the West Altered Zone are a north-south trending quartz vein set which contain sporadic splashy flakes of molybdenite.

ASSAY RESULTS

Sample No.	DDH	Footage	% Tot.Mo	% Mo Ox.	Calculated MoS_2 - assuming all Mo from sulphide
33001	2	340-350	.052	.001	.088
33002	"	350-360	.009	.001	.015
33003	"	360-370	.012	.001	.020
33004	"	370-380	.056	.001	.093
33005	"	380-390	.046	.001	.077
33006	"	390-400	.009	.001	.015
33007	"	400-410	.023	.001	.038
33008	"	410-420	.020	.001	.033
33009	"	420-430	.023	.001	.038
33010	"	430-440	.053	.001	.088
33011	"	440-450	.027	.001	.045
33012	3	330-340	.012	.001	.020
33013	"	340-350	.004	<.001	.006
33014	"	390-400	.010	<.001	.016
33015	"	400-410	.004	<.001	.006
33016	4	90-100	.026	<.001	.043
33017	"	100-110	.013	<.001	.022
33018	"	110-120	.004	<.001	.006
33019	2	700-710	>.10	-	.17
33020	"	710-720	.008	-	.013
33021	"	780-790	.011	-	.018
33022	"	800-810	.10?	-	.17
33023	"	830-840	.001	-	.002

Summary

2	340-400	Altered hornfels	60' av. .051% MoS_2
	400-450	Alaskite	50' av. .048% MoS_2
4	90-120	Fresh hornfels	30' av. .024% MoS_2

TABLE I

Disseminated scheelite in small lenses (less than 10 x 3 feet) was observed along the baseline at the southern edge of the Altered Zone within the limestone band (Unit 3c).

CONCLUSIONS

The 1971 drilling program confirmed the surface observations made in 1970. As well the following conclusions were reached.

a) DDH 3, 4 and 5 suggest that the northeasterly trending fault passing through the collar of DDH 3 and 4 dips at 45 to 60° to the northwest with the westerly block having moved down relative to the east side. Thus the northwesterly trending stockwork is interpreted as having originally overlain the alaskite and been faulted down to its present position.

b) Around the north and northwest periphery of the alaskite where the contact has been observed dipping inwards there is an almost total lack of alteration and a narrowing of the stockwork zone. The elongation of the alteration and stockwork zone to the southeast of the alaskite suggests that the outer alaskite contact (not observed) in this area may dip outwards (See Figure 3).

c) The hornfelsed and altered zones are concluded to be too large to be completely explained by the observed alaskite ring dyke complex. It is concluded that these features are related to a larger buried alaskite stock (Figure 6b, 1970 Report).

d) Preliminary assay results substantiate the surface sampling and indicate that leaching of molybdenite at surface is of minor importance.

e) The Gladys Lake Property is considered an excellent exploration target - large areas of the alaskite ring dyke complex exhibiting intense structural preparation and strong alteration remain untested. Data collected to date confirms the hypothesis of a larger differentiated alaskite stock below the present surface which would represent a similar environment to that of the Adanac Deposit.

EXPLORATION POTENTIAL AND PROPOSED PROGRAM

Results to date indicate that better molybdenite mineralization occurs near the inner contact of the north annular alaskite body (see DDH 2) coincident with the most intense quartz vein stockwork. The eastern portion of the south annular alaskite body is intensely quartz veined and is centrally located with respect to the most intense alteration in the central zone. A drill hole (R-6) totalling 1200 feet is recommended to test this area which also has a 40+ppm geochemical Mo soil anomaly.

The holes drilled along section XX' in 1971 passed through the portion of the north annular alaskite body (DDH-2) where quartz veining diminished to less than one per foot. A drill hole R-7 (800 feet) is proposed to test the western portion of this alaskite where on surface the intensity of quartz veining exceeds four veins per foot across the total width of the alaskite. A 100+ppm geochemical anomaly is located downslope and may be derived from the quartz vein stockwork this drill hole would test.

Finally a vertical hole R-8 (2000 feet) is recommended to test the hypothesis of a larger buried alaskite intrusion which, on the basis of the average width of hornfelsed zones in the area is thought to be 1000 feet below the central core.

There is no evidence on surface to explain the intense alteration of Unit 3 in the West Altered Zone. The proximity of the Central Altered Zone along the northwesterly trend plus the peripheral molybdenite and scheelite mineralization suggests that a smaller differentiated portion of the underlying alaskite stock may be near the present erosional surface.

Trenching to define the extent of the scheelite is recommended. Further work on the West Altered Zone will depend on results from the Central Altered Zone.

Estimated Cost of Proposed Program

The proposed program for 1972 entails the expenditure

of $115,000 (Canadian Funds).

Administrative Expenses

8602	Salaries & Wages	$12,000
8610	Fringe Costs 10%	1,200
8620	Telephone - Radio telephone	500
8622	Postage	50
8626	Maps	500
8637	Legal Expenses	500
8658	General Insurance	450
	Sub total	$15,200

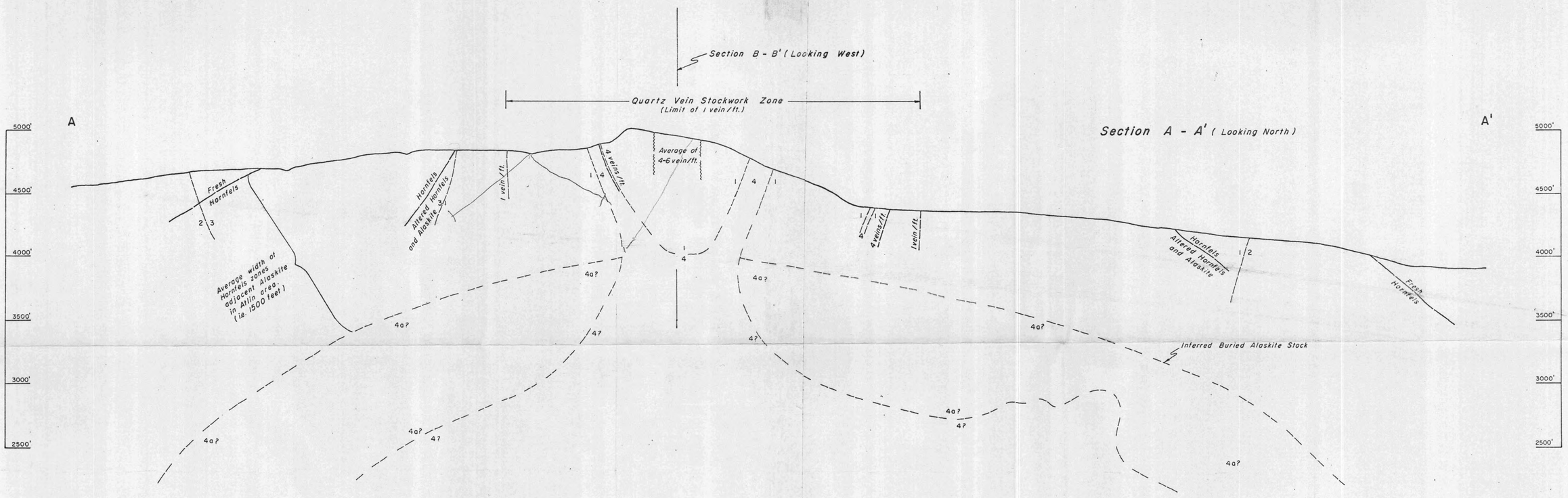
Field Expenses

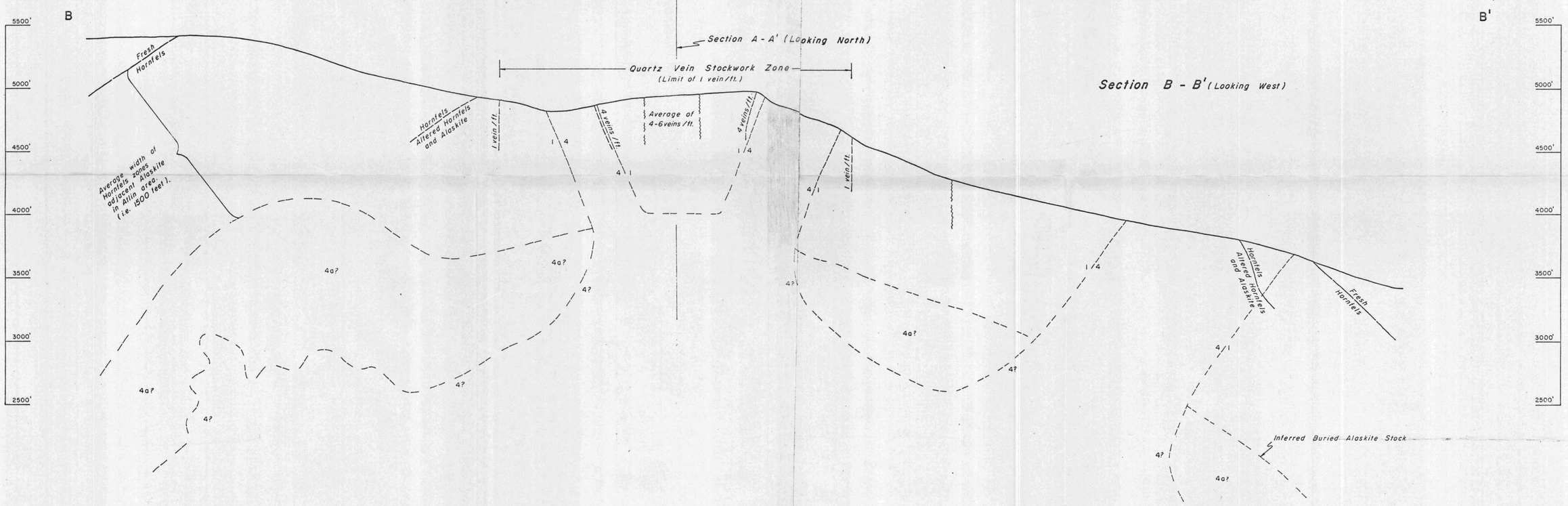
8680	Shipping Expense	1,000
8681	Drilling (Footage 4000x$14/ft)	56,000
8683	Contractors, Non-Technical (D-8 Cat 200 hrs @ $30/hr)	6,000
8685	Option or Property Payments	17,500
8687	Equipment - camp	2,000
8688	Vehicles Rental 4x4 for 4 mos.	2,000
8689	Materials & Supplies	1,000
8690	Oper.& Maint. of Equip.	2,000
8691	Assay 400 @ $10	4,000
8692	Camp Acc. & Board - 480 man days @ $10/day)	4,800
8694	Project Travel	2,500
8696	Misc. Permit Payments - assessment	1,000
	Sub total	$99,800
		$115,000

October 14, 1971

AMAX VANCOUVER OFFICE

T.J.R. Godfrey





L E G E N D

Late Mesozoic

- 4 — Porphyritic fine grained Alaskite.
- 4a — Medium to coarse grained Alaskite.

} Phases shown for buried Stock are inferred.

Late Paleozoic (Cache Creek Group)

- 3 — Limestone, Marble, Chert, Argillite.
- 2 — Massive Argillite.
- 1 — Thin bedded Argillite and Siliceous Argillite to Chert.

Symbols

- Geological contact (approximate, inferred)
- Fault, shear.
- Quartz vein intensity boundary.

AMAX EXPLORATION INC.

GLADYS LAKE MoS_2 PROPERTY

ATLIN MINING DIVISION — BRITISH COLUMBIA

GEOLOGICAL SECTIONS A - A', B - B'
GRID AREA

HORIZONTAL AND VERTICAL SCALE
1 inch = 400 feet

inches 0 1 2
centimetres 0 1 2 3 4 5

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BRITISH COLUMBIA GEOLOGICAL SURVEY

To accompany: "GEOLOGICAL AND GEOCHEMICAL REPORT ON THE GLADYS LAKE MoS_2 PROPERTY" By: G. M. Leary.

Fig. 6b

NORTH GROUP

SOUTH GROUP

SIP 27 Aug 22 1973

SIP 28 Aug 22 1973

SIP 36 Aug 22 1973

SIP 35 Aug 22 1973

JOY 46 Aug 22 1973

JOY 48 Aug 22 1973

JOY 50 Aug 22 1973

JOY 52 Aug 22 1973

SIP 24 Aug 22 1973

SIP 23 Aug 22 1973

SIP 22 Aug 22 1973

SIP 21 Aug 22 1973

DELL 5 Aug 22 1973

DELL 7 Aug 22 1973

DELL 9 Aug 22 1973

DELL 11 Aug 22 1973

DELL 13 Aug 22 1973

DELL 15 Aug 22 1973

DELL 17 Aug 22 1973

DIP 1 July 21 1973

DIP 2 July 21 1973

DIP 3 July 21 1973

DIP 4 July 21 1973

DIP 5 July 21 1973

DIP 6 July 21 1973

DIP 7 July 21 1973

DIP 8 July 21 1973

DIP 9 July 21 1973

DIP 10 July 21 1973

PIP 9 June 24 1973

PIP 10 June 24 1973

PIP 8 June 24 1973

PIP 7 June 24 1973

PIP 6 June 24 1973

PIP 5 June 24 1973

PIP 4 June 24 1973

PIP 3 June 24 1973

PIP 2 June 24 1973

PIP 1 June 24 1973

SIP 20 July 21 1973

SIP 19 July 21 1973

SIP 18 July 21 1973

SIP 17 July 21 1973

SIP 16 July 21 1973

SIP 15 July 21 1973

SIP 14 July 21 1973

SIP 13 July 21 1973

SIP 11 July 21 1973

SIP 9 July 21 1973

SIP 7 July 21 1973

SIP 12 July 21 1973

SIP 10 July 21 1973

SIP 8 July 21 1973

SIP 6 July 21 1973

SIP 5 July 21 1973

SIP 3 July 21 1973

SIP 1 July 21 1973

SIP 4 July 21 1973

SIP 2 July 21 1973

WEST ALTERED ZONE

CENTRAL ALTERED ZONE

EAST ALTERED ZONE

AVERAGE <1 Vein/foot

AVERAGE 4-6 Veins/foot

QUARTZ STOCKWORK VEIN ZONE

ALTERED HORNFELS & K-FELDSPAR

HORNFELS

TALUS

SECTION LINE

TIE LINE NORTH

OLD GOLD PLACER

CAMP AREA

A

A'

B

B'

LEGEND

LATE MESOZOIC	4	Porphyritic Fine Grained Alaskite.
LATE PALEOZOIC CACHE CREEK GROUP	3	3 Undifferentiated. 3a Argillite, Mottled Chert, Chert and Chert Breccia. 3b Argillite and Mottled Chert. 3c Limestone, Chert and Chert Breccia.
	2	Massive Argillite.
	1	Thin Bedded Argillite and Siliceous Argillite to Chert. 1a Andesite Flow. 1b Argillite and Mottled Chert.

Outside boundary of Claims

Boundary of "Schedule A Claims as specified in option agreement dated Nov 30 1970

Claim Post, Claim location line

Claim boundary

SIP 4 July 21 1973 — Claim name and expiry date as of Sept 30, 1971

"Grouping of Claims into "North" and "South" groups

Map taken from a photo reduction of the Geological Map-Grid Area (1"=400') in 1970 Report.

inches 0 1 2

centimetres 0 1 2 3 4 5

BRITISH COLUMBIA GEOLOGICAL SURVEY

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AMAX EXPLORATION INC.

GLADYS LAKE MoS_2 PROPERTY

ATLIN MINING DIVISION — BRITISH COLUMBIA

CLAIM MAP

SCALE 1" = 1000'

DATE REVISED 7/1/71	DATE REVISED	Drawn By AHB, HCB	FIG. 2
		Date 17/9/70	
		N.T.S. File 104 N 16	

ASSAY RESULTS
(70 GLT 20 - 70 GLT 49)

SAMPLE NO.		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
SAMPLE LENGTH (FEET)		8	5	3	4	2.5	3	2.5	10	10	4	4	3	6	8	9	10	10	2.5	6	4	4.5	5.5	15	2	4	8	5	5.5	20	1
ASSAY (%)	MoS_2	.020	.013	.015	.008	.023	.013	.013	.023	.008	.079	.028	.013	.008	.035	.035	.013	.008	.008	.008	.006	.008	.008	.013	.047	.235	.017	.023	.006	.020	.032
	TOTAL Mo*	.005	.007	.003	.006	.014	.009	.002	.006	.004	.050	.021	.019	.001	.028	.039	.007	.013	.002	.002	.006	.007	.005	.005	.028	.220	.016	.032	.003	.012	.038
	CALC. MoS_2*	.008	.012	.005	.010	.023	.015	.003	.010	.007	.084	.035	.032	.002	.047	.065	.012	.022	.003	.003	.010	.012	.008	.008	.047	.367	.027	.053	.005	.020	.063
	WO_3	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr

* Data based on geochemical analyses

LEGEND

LATE MESOZOIC
- 922 Porphyritic Fine Grained Alaskite.

LATE PALEOZOIC CACHE CREEK GROUP
- 3 — 913 Undifferentiated. 3a Argillite, Mottled Chert, Chert and Chert Breccia. 3b Argillite and Mottled Chert. 3c Limestone, Chert and Chert Breccia.
- 2 — 945 Massive Argillite.
- 1 — 962 Thin Bedded Argillite and Siliceous Argillite to Chert. 1a Andesite Flow. 1b Argillite and Mottled Chert.

SYMBOLS

- Outcrop outline.
- Geological contact (defined, approximate and inferred).
- Outline of moderately to intensely altered zones.
- Geological contact attitude.
- Bedding (inclined, vertical).
- Jointing (inclined, vertical).
- Quartz vein or quartz vein set.
- Wide bull quartz vein (inclined, vertical).
- Outline of quartz vein stringer zone.
- Quartz vein frequency contour.
- Shear zone (inclined, vertical).
- Fault (inferred projection).
- Foliation (inclined, vertical).
- Inferred synclinal fold axis.
- Channel and bulk rock chip sample (sample number 1 70 GL precedes all sample numbers.
- Rock chip sample; sample number; p.p.m. Mo, Cu, Zn, W.
- Blast pit trench; blast pit.
- Trench.
- Road.
- Stream, intermittent stream.
- Swamp.
- Esker, esker showing direction of transport
- Lateral glacial terrace or bench along stream channels.
- Steep rock face and talus slope.
- Timberline.
- Ridge line.
- Topographic contour (contour interval 100')
- Claim post, claim location line.
- Claim boundary line.

AMAX EXPLORATION INC.

GLADYS LAKE MoS_2 PROPERTY
ATLIN MINING DIVISION — BRITISH COLUMBIA

GEOLOGICAL MAP
— GRID AREA —

SCALE 1" = 400'

DATE REVISED	DATE PRINTED	
2/4/71		Drawn by: A.H.S., N.C.P.
		Date 12/9/70
		N.T.S. File 104 N 14

FIG. 6

To accompany "GEOLOGICAL AND GEOCHEMICAL REPORT ON THE GLADYS LAKE MoS_2 PROPERTY" by: G.M. Leary