

3028

SILVER STANDARD MINES LTD. (N.P.L.)

COMBINED GEOCHEMICAL, GEOPHYSICAL, AND GEOLOGICAL REPORT

on

MINERAL CLAIMS MAT 1 to MAT 26 INCLUSIVE

58° 129° SE

104 I / 4W

Middle Stikine District - Liard M.D., B.C.

by

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **3028** MAP

James H. McAusland, P. Eng.
Silver Standard Mines Ltd. (N.P.L.)
Vancouver, B.C.

CLAIMS HELD BY

Mat 1-26 inclusive

Silver Standard Mines Ltd. (N.P.L.)
808-602 West Hastings Street
Vancouver 2, B.C.

Work performed on a total of 24 days between August 24, 1970 and September 18, 1970.

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~~4~~ 4 Fig. 1--Regional Geology of Mat Claims

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 Fig. 2--Log. ppm Cu, Ni vs. Cum % Frequency,
 Mat Claims.

 Fig. 3--Log. ppm Cu, Ni vs. Cum % Frequency,
 East end of Mat Claims.

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ATTACHMENTS:

Certificates of Analyses - Chemax Labs Ltd.
Invoice - Chemax Labs Ltd.
Invoice - Scintrex Ltd.

IN POCKET:

- 1) Fig. 4 - Mat Claims Cu Geochemical Survey
- 2) Fig. 5 - Mat Claims Ni Geochemical Survey
- 3) Fig. 6 - Mat Claims Magnetometer Survey

INTRODUCTION:

A reconnaissance program of prospecting, geologic field mapping, and grid geochemical and geophysical sampling was carried out on the Mat 1-26 claims in the fall of 1970. The object of the work was to appraise the mineral potential of the area and to provide background data for detailed follow-up in the 1971 field season.

SUMMARY:

The Mat claims lie on the south side of the Hotailuh Batholith. Underlying rocks range from quartz-monzonite on the north through a gneiss of variable composition contacting metasediments and thence into pyroxenites and gabbro along the southern half of the claims. Low grade (est. $<.05\%$ Cu), finely disseminated chalcopyrite has been found across a 300-foot width in the gneiss. Both disseminated bornite and narrow stringers of massive bornite and chalcocite associated with dikes were found in the generally sulfur-deficient pyroxenite and gabbro. An exception was some massive sulfide float assaying $.10\%$ Cu and $.08\%$ Ni found near the gabbro-metasediment contact.

Several soil geochemical anomalies were noted and three copper anomalies with a range of values between 200 and 2700 ppm Cu were deserving of more follow-up. Two separate 600-foot anomalies occurred near the west end of the claim group. Nickel and silver geochemistry proved disappointing and no obvious anomalous nickel values were noted on graphical plots of logarithm ppm Ni versus cumulative percent frequency.

Magnetometer readings gave a 17,000 gamma range across the property, but this generally reflected known changes of rock type.

LOCATION AND ACCESS:

The property lies between elevations of 3800 and 5000 feet on the south face of mountains along the north side of the Stikine River. The claims lie one mile north of the Stikine River and 10 miles east of the ferry on the Stewart-Cassiar Highway.

Access to the property was provided by a Bell G3B1 helicopter, operating from a Silver Standard Mines exploration base camp some 15 miles distant, near Eddontenajon, B.C.

PROPERTY AND HISTORY:

The 26 Mat claims were staked as a consequence of prospector follow-up of mineralized float and geochemical anomalies located on the north side of the Stikine some 10 miles east of the Stikine ferry crossing. All 26 claims were located on the ground and no witness posts were used. The Mat 1-10 claims lie on a north-south location line at the east end of the claim group and the Mat 11-26 claims run three abreast to the west of the Mat 6, 8, and 10 claims. All claims are believed to be contiguous.

The Mat 1-26 claims inclusive were staked by A.R.C. Potter between August 23 and September 2, 1970, and recorded September 17, 1970.

PERSONNEL AND PROGRAM:

The field work was carried out by Basil Milne and Willard Pelkey, geologist and helper; A.R.C. Potter and R. Thompson, linecutting, operating magnetometer and soil sampling; and Wm. Buckler and J. Morrison, line cutting for geophysics and geochem, under the supervision of James H. McAusland, P. Eng. All field personnel lived on the property in tents until their work was completed. They were moved to and from the property by helicopter and supplies were generally transferred by helicopter

on inspection trips made by the supervisor. The field work described was completed between August 24 and September 18, 1970. All geochemical soil samples were sent via air freight to Chemex Labs. Ltd., of North Vancouver, for analysis.

GEOLOGY:

As noted in the summary, the Mat 1-26 claims inclusive were located on the southeast corner of the Hotsiluh Batholith. These claims cover rock types ranging from quartz-monzonite on the north through gneisses and schists into metasediments and ultimately serpentinitized pyroxenites and gabbros on the south side of the claims.

Metal sulfides were noted in place in five locations and three geochemical anomalies were located in areas devoid of outcrop. Below is a report by Basil D. Milne, geologist, on the regional geology of the Mat claims:

REGIONAL GEOLOGY OF THE MAT CLAIMS:

Geological mapping was done by B.D. Milne from the 31st of August to the 6th of September, 1970 on the scale 1" = 1/2 mile. (Please refer to Fig. 1 to note the creeks referred to in text.)

Quartz-Monzonite - The quartz-monzonites were fresh, medium-grained with a hypidiomorphic texture. It outcropped along the ridges and creeks. Some bornite was found in epidote stringers.

Gneiss - The gneiss was quite variable in composition. Along Creek 2 the contact with the quartz-monzonite was syenitic and fairly massive as was the ridge between Creeks 1 and 2.

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ASSESSMENT REPORT

NO. 3025 MAP # 4

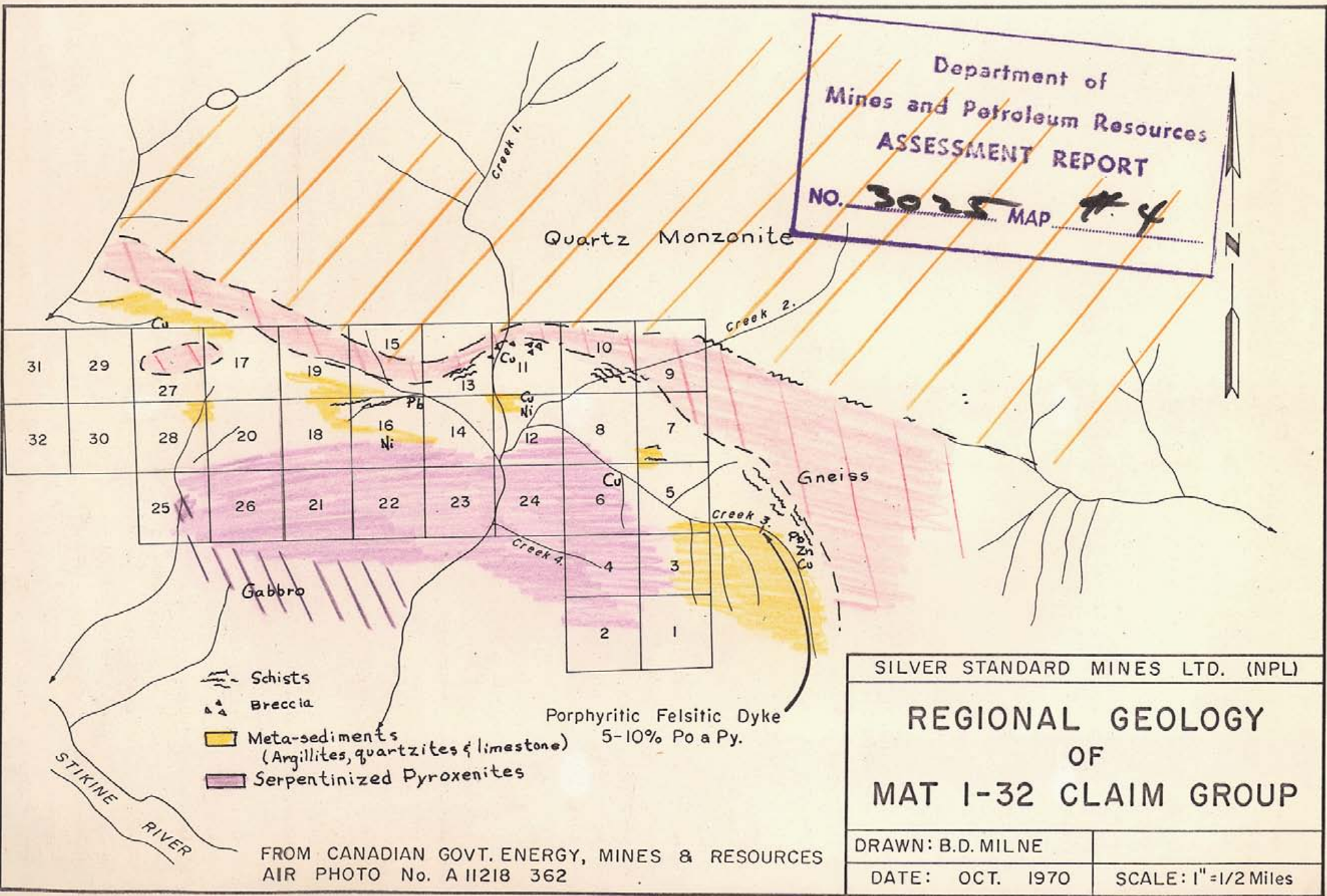
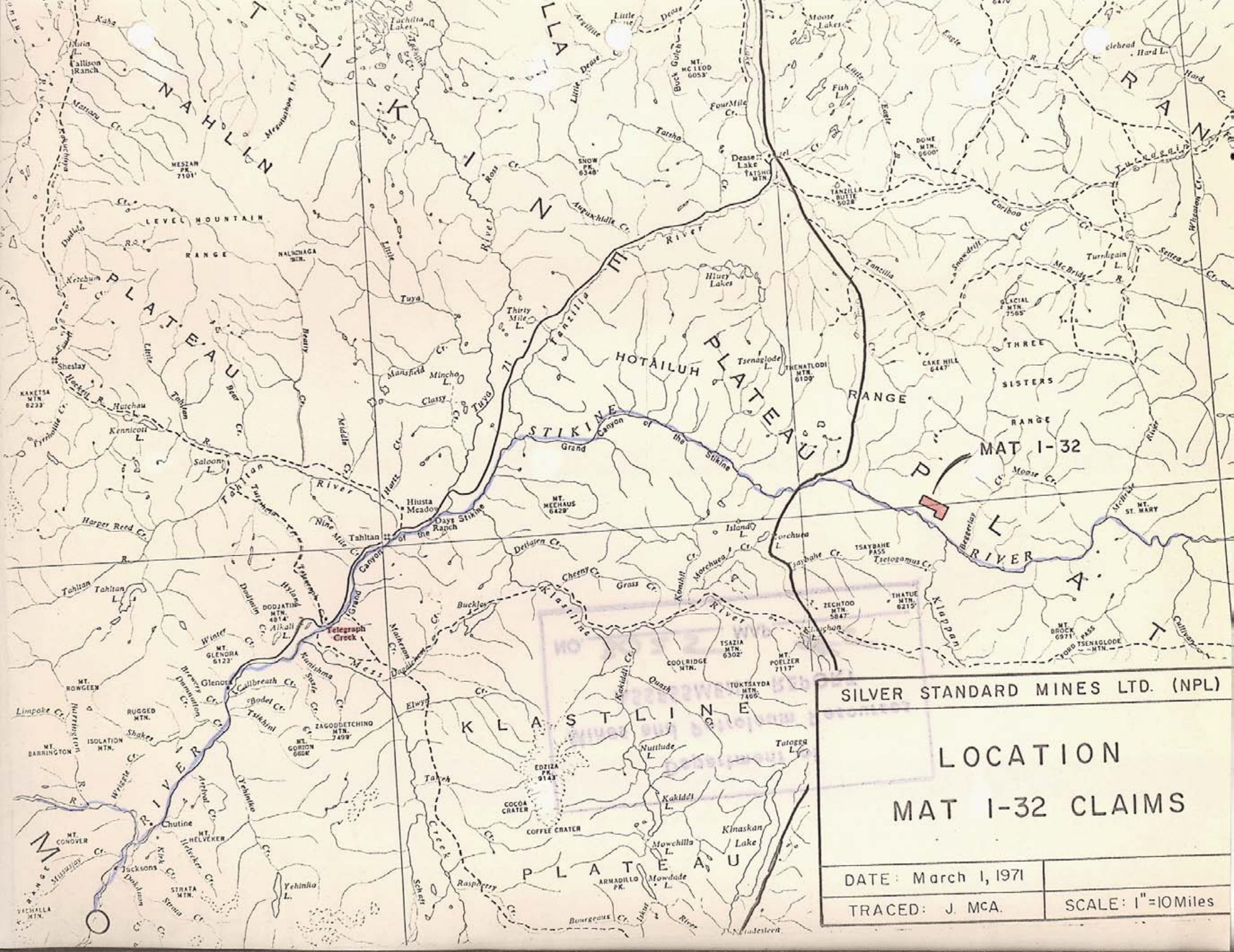


FIG. 1



SILVER STANDARD MINES LTD. (NPL)

LOCATION
MAT 1-32 CLAIMS

DATE: March 1, 1971

TRACED: J. MCA.

SCALE: 1"=10 Miles

Regional Geology of the Mat Claims -
Re: Gneiss - cont'd:

On the ridge between Creeks 1 and 2 the gneiss graded from 'syenitic' to 'dioritic' and then into a breccia. The breccia consisted of large angular chlorotized pyroxenite fragments in a 'stock work' of quart-monzonite composition.

The 'outlier' of gneiss occurred as several round knobs of syenite surrounded on the south and east by 'dioritic' gneiss with some malachite and chalcopyrite. On the ridge between Creeks 2 and 3, in some float boulders, the gneiss consisted predominantly of mafics.

Schists - These lay alongside and graded into the gneiss. At the head of Creek 3 the sediments were highly sheared and graded into schists. Up the slope the schists become impregnated with K-feldspar stringers and graded into the gneiss. (See the sketches of Creek 1 and 2).

Sediments - The best exposure of the sediments occurred in Creek 3. The sediments consisted of well-fractured and limonite-stained argillites, impure grey limestones and quartzites. In the sheared sediments at the top of Creek 3 there was some chalcopyrite, galena and sphalerite.

Serpentinized Pyroxenites - In the eastern section the pyroxenites tended to be medium-grained and more highly serpentinized than in the west. In the west the pyroxenites were generally fine-grained and graded into the gabbro. There was some development of fine veinlets of cross fibre chrysotile in the fine-grained pyroxenite.

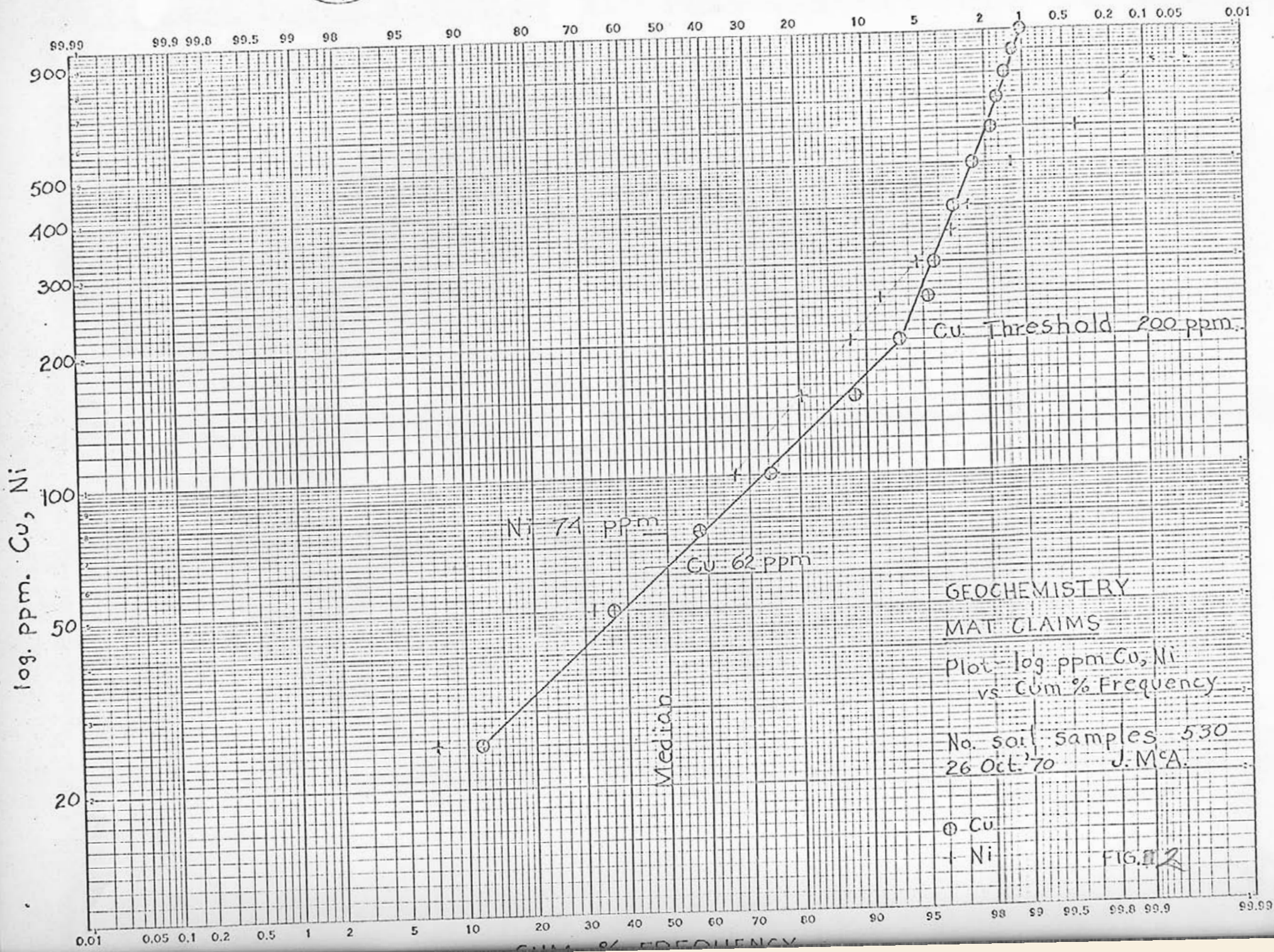
The most interesting mineralization in the pyroxenites was in Creek 4. In this creek the pyroxenite was medium-grained. On the northern side of the creek there was some altered gabbro. Some malachite occurred along fractures in the pyroxenite.

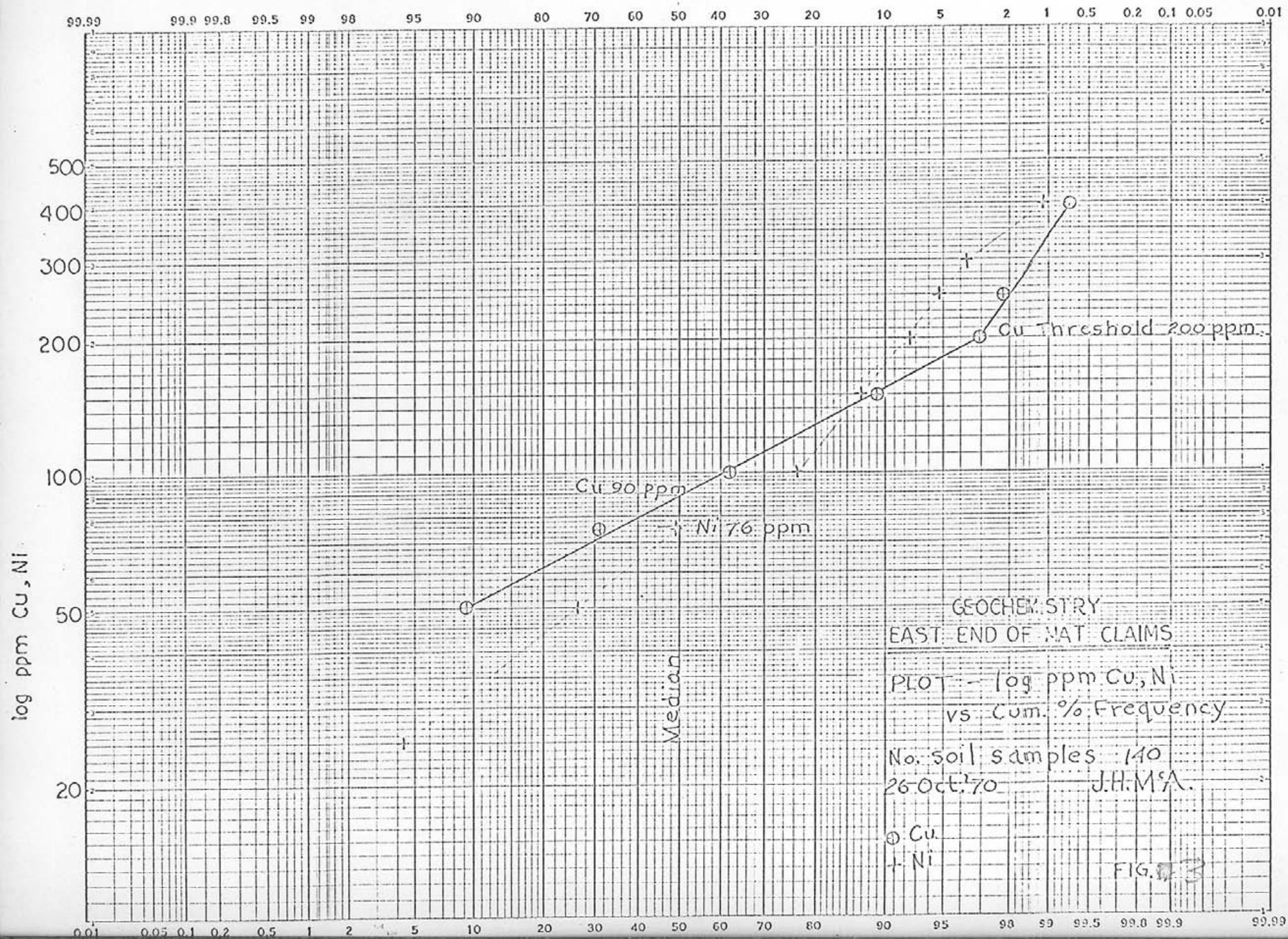
Regional Geology of the Mat Claims -
Re: Serpentinized Pyroxenites - cont'd:

There were stringers of bornite up to 2 inches with some chalcopyrite. Two white cherty bands occurred on the southern slope. These had malachite and azurite staining and some chalcocite. One of these bands has been tranced above Creek 5, and contained stringers of massive chalcocite.

Geochemistry -

A grid (G-42) was run on the Mat claims to give control for both a geochemical and magnetometer survey. Some 558 soil samples were taken with a 1 1/2 inch metal auger in the B horizon at 100-foot intervals on lines generally at 500-foot spacing, and analyzed by atomic absorption for copper and nickel, and selected lines analyzed by atomic absorption for silver. Earlier, 54 silt samples had been taken to help follow up mineralized float found on the Stikine River bars and creeks draining this area. In the silts, the highest value obtained was 500 ppm copper and another ran 475 ppm nickel. On the grid, copper and nickel highs were generally coincident, with exceptions noted. Two plots of logarithms of soil copper and nickel ppm versus cumulative percent frequency were made, and these readily showed the copper threshold of 200 ppm copper (Figs. 2 and 3). Three copper-anomalous areas (Figs. 4 and 5), were selected for follow-up in 1971. They were L 90 W, 9-15 S; L 0 S, 72-78 W; and north of the ends of lines 10 W - 15 W. All three areas were covered by overburden and no mineralization was reported in place or in float found at these localities. Trenching will be done to determine the cause of the anomalies, particularly along 600 feet of L 90 W where the median value obtained was 1640 ppm copper and the high, 2700 ppm copper.





Regional Geology of the Mat Claims -
Re: Geochemistry - cont'd:

The nickel geochem did not respond well to the log-probability plot and anomalous values were selected as the top 5% of the values. This yielded three areas of interest for nickel - a coincident nickel high at the south end of L 60 W with magnetometer range of 11,000 gammas along 1200 feet of line, line 90 W, and the area between L 5 W and L 5 E south of the base lines, where a copper anomaly plus 3000-gamma magnetometer anomaly were located. No silver anomalies were noted and values obtained ranged from <0.5 ppm silver to 1.0 ppm silver.

Geophysics (Fig. 6) -

A ground magnetometer survey was performed with a Scintres MF-1 fluxgate magnetometer in September, 1970. The range of values was between a low reading of -2900 and a high of +14,000 gammas. The positive readings were considered to be over gabbros and were south of the inferred gabbro-metasediment contact. Some generally east-west linear anomalies were obtained in the northeast corner of the claims and may signify gabbro sills or dikes in the metasediments. One of these magnetometer anomalies, between line 5 W and 5 E, corresponds to both a copper and nickel-high area and warrants further follow-up. A coincident magnetometer and nickel geochem anomaly was previously mentioned on L 60 W in the gabbro.

EVIDENCE OF EXPENDITURES INCURRED

	Salaries	Geological	Geochemical	Geophysical	TOTAL
Basil D. Milne	- 7 dys. @ \$ 1,100/mo.	\$ 256.70	\$ --	\$ --	\$ 256.70
W. Pelkey	- 7 dys. @ 475/mo.	110.83	--	--	110.83
A.R.C. Potter	- 24 dys. @ 725/mo.	cut line & operate magnetometer		580.00	580.00
R.B. Thompson	- 25 dys. @ 550/mo.	cut line & soil sample		--	458.33
Wm. Buckler	- 4 dys. @ 475/mo.	cut line	63.33	--	63.33
J. Morrison	- 4 dys. @ 475/mo.	cut line	--	63.33	63.33
J.H. McAusland	- 5 dys. @ 40/dy.	80.00	80.00	40.00	200.00
Living Expenses	- 75 dys. @ 9.50/dy.	152.00	294.50	275.50	722.00
Helicopter	- 8 1/2 hrs. @ 147.00/hr.	441.00	441.00	367.50	1,249.50
Mag Rental	- 1/2 mo. @ 310.50/mo.	(per attached Scintrex Invoice)		155.25	155.25
Geochem Analyses-	(per attached invoice no. 4207)	--	952.85	--	952.85
TOTAL EXPENDITURES -		\$ 1,040.53	\$ 2,290.01	\$ 1,481.58	\$ 4,812.12

Declared before me at the *City*
of *Vancouver*, in the
Province of British Columbia, this *14th*
day of *May* 1971, A.D.

James H. McArthur

ALLOCATION OF ASSESSMENT FUNDS

Claim Name	Record No.	Geological	Geochemical	Geophysical	Total	No. Years
Mat 1	49166	\$ 100.00	\$	\$	\$ 100.00	1
Mat 2	49167	100.00			100.00	1
Mat 3	49168	100.00			100.00	1
Mat 4	49169	100.00			100.00	1
Mat 5	49170	30.00	40.00	30.00	100.00	1
Mat 6	49171	30.00	40.00	30.00	100.00	1
Mat 7	49172	30.00	40.00	30.00	100.00	1
Mat 8	49173	30.00	40.00	30.00	100.00	1
Mat 9	49174	20.00	50.00	30.00	100.00	1
Mat 10	49175	20.00	40.00	40.00	100.00	1
Mat 11	49176	20.00	40.00	40.00	100.00	1
Mat 12	49177	20.00	40.00	40.00	100.00	1
Mat 13	49178	30.00	90.00	80.00	200.00	2
Mat 14	49179	30.00	90.00	80.00	200.00	2
Mat 15	49180	30.00	130.00	40.00	200.00	2
Mat 16	49181	30.00	85.00	85.00	200.00	2
Mat 17	49182	30.00	270.00	100.00	400.00	4
Mat 18	49183	30.00	85.00	85.00	200.00	2
Mat 19	49184	30.00	85.00	85.00	200.00	2
Mat 20	49185	30.00	270.00	100.00	400.00	4
Mat 21	49186	30.00	85.00	85.00	200.00	2
Mat 22	49187	30.00	85.00	85.40	200.00	2
Mat 23	49188	30.00	140.00	30.00	200.00	2
Mat 24	49189	30.00	130.00	40.00	200.00	2
Mat 25	49190	40.53	203.35	156.12	400.00	4
Mat 26	49191	40.00	212.01	160.00	400.00	4
		\$ 1,040.53	\$ 2,290.01	\$ 1,481.58	\$ 4,800.00	

A portion of the funds for the assessment of the above claims is being collected by the Bureau of Geology and Mineral Resources, Department of Natural Resources, State of California.

Bureau of Geology and Mineral Resources, Department of Natural Resources, State of California.

QUALIFICATIONS OF AUTHOR

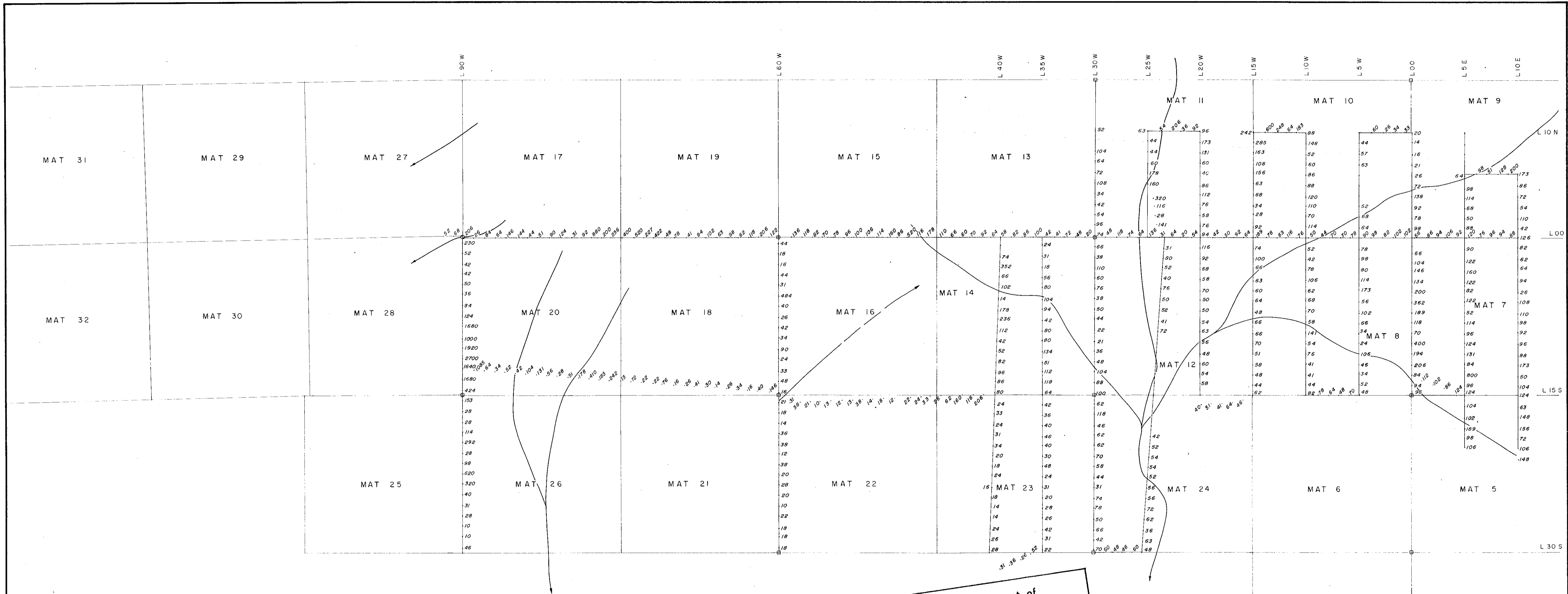
I, James H. McAusland, with business and residential addresses in Vancouver, B.C., do hereby certify that:

1. I am a mining engineer in the permanent employ of Silver Standard Mines Ltd. (N.P.L.), of 808-602 West Hastings Street, Vancouver 2, B.C.
2. I am a graduate of the University of British Columbia (Mining Engineering 1962).
3. I am a registered Professional Engineer of the Province of British Columbia (Reg. No. 6636).
4. I have practiced and supervised in the field of Mining Engineering for the past nine years.
5. I have personally supervised the geological, geochemical and geophysical survey completed on the Mat 1-26 claims inclusive, described in this report.

Respectfully submitted,


James H. McAusland, P. Eng.
Mining Engineer

March 3, 1971



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3028 MAP #1

TO ACCOMPANY COMBINED GEOLOGICAL, GEOCHEMICAL AND
GEOPHYSICAL REPORT BY JAMES H. MCAUSLAND, P. ENG., ON
THE MAT GROUP, ON THE STIKINE RIVER, LIARD, M.D.,
DATED MARCH 1, 1971.

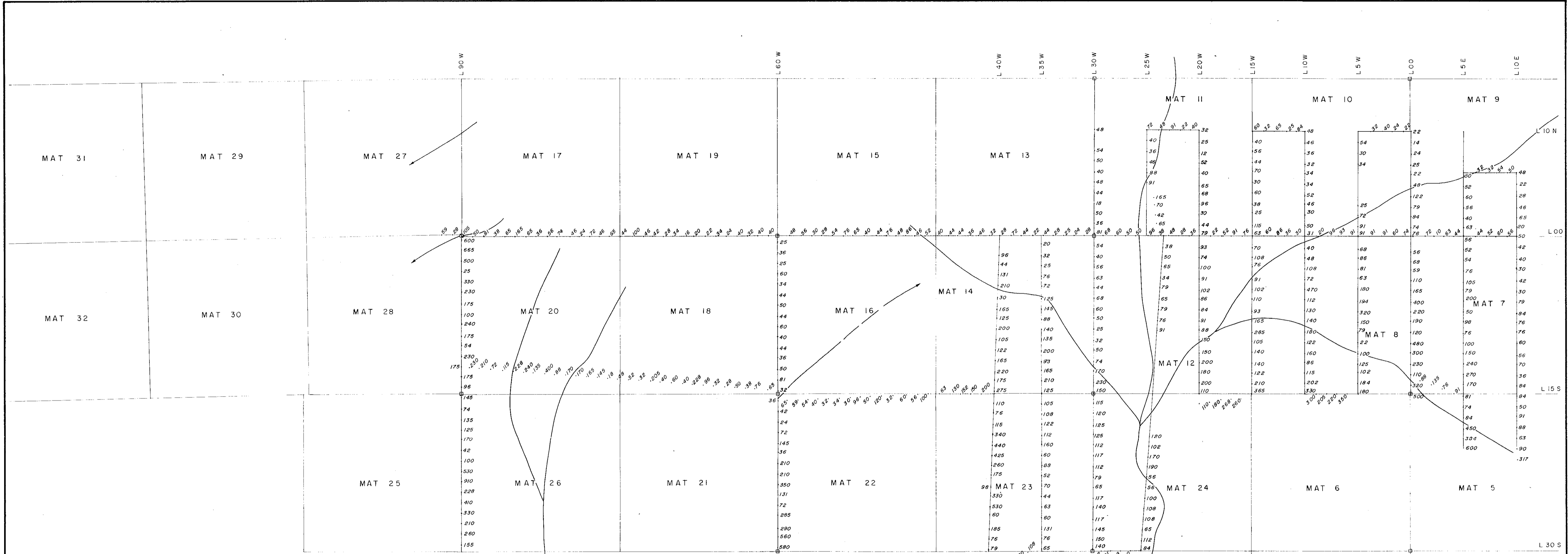
FIG. 4

SILVER STANDARD MINES LTD. (NPL)		
SARC GRID 42 MAT CLAIMS Cu GEOCHEMICAL SURVEY		
TRACED:		
DRAWN: MAR. 5/71		SCALE: 1" = 500'

3028

M-1

James H. McAusland



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3028 MAP #2

TO ACCOMPANY COMBINED GEOLOGICAL, GEOCHEMICAL AND
GEOPHYSICAL REPORT BY JAMES H. McAUSLAND, P. ENG., ON
THE MAT GROUP, ON THE STIKINE RIVER, LIARD, M.D.,
DATED MARCH 1, 1971.

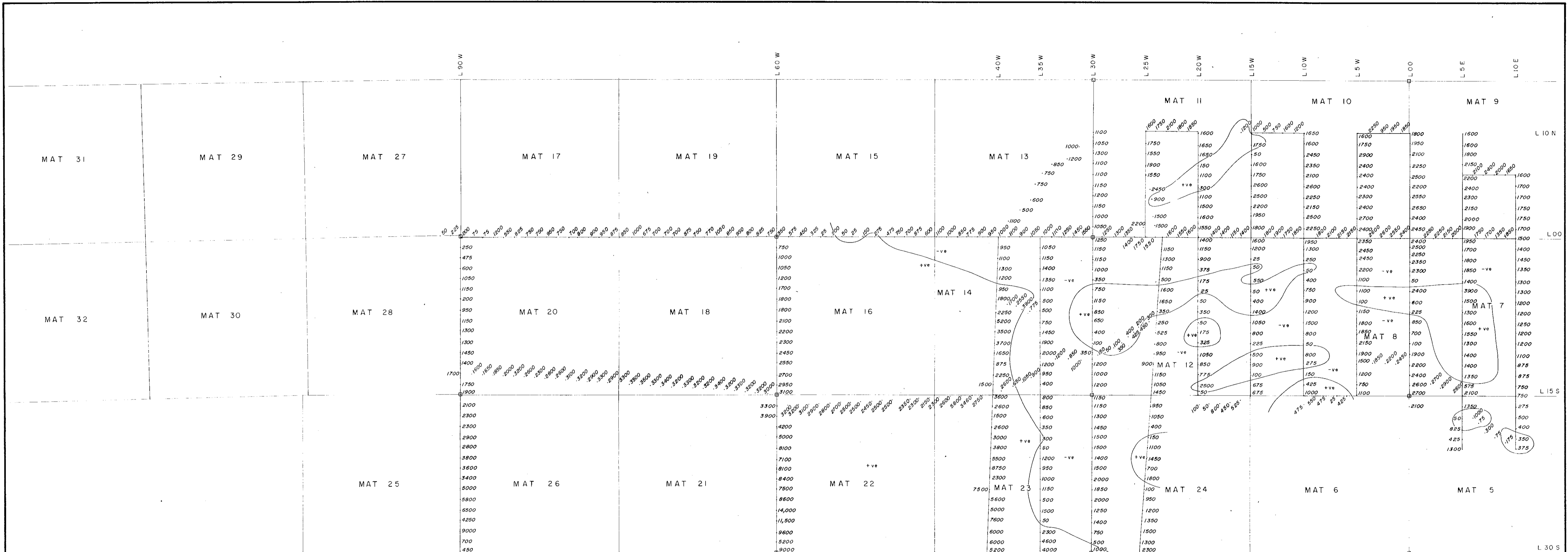
3028 M-2



FIG. 5

SILVER STANDARD MINES LTD. (NPL)		
SARC GRID 42 MAT CLAIMS Ni GEOCHEMICAL SURVEY		
TRACED:		
DRAWN: NOV. 2/70		SCALE: 1" = 500'

James H. McAusland



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3028 MAP #3

TO ACCOMPANY COMBINED GEOLOGICAL, GEOCHEMICAL AND
GEOPHYSICAL REPORT BY JAMES H. McAUSLAND, P. ENG., ON
THE MAT GROUP, ON THE STIKINE RIVER, LIARD, M.D.,
DATED MARCH 1, 1971.

FIG. 6

SILVER STANDARD MINES LTD. (NPL)		
SARC GRID 42 MAT CLAIMS MAGNETOMETER SURVEY		
TRACED: OCT 27/70		
DRAWN: MAR 5/71		SCALE: 1" = 500'

3028
M-3

James H. McAusland