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MID MOUNTAIN MINING LTD.

REPORT ON
BOB CREEK MASSIVE SULFIDE PROSPECT
OMINECA MINING DIVISION
B. C.

February 11, 1977

Andrew E. Nevin, Ph.D., P.Eng.

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1.0 SUMMARY AND RECOMMENDATIONS

1.1 Summary

Gold, zinc, silver and copper values and widespread pyritization in acid volcanics indicate that the Bob Creek property is an important massive sulfide prospect.

The property is made up of the New Buck, Lorne, Nabob, and Godfrey claims, a total of 43 units. It is located six miles south of Houston, B.C., and a short distance north of the Bradina Mine and the Sam Goosly ore deposit.

The metals and geology at Bob Creek fit a class of deposit newly recognized in the west: Polymetallic volcanogenic deposits, ores containing several base and precious metals which were emplaced in submarine volcanic centres. Mineralized acid volcanics and volcanic breccias crop out in a 2000-foot long gossan in a gorge in Bob Creek, in trenches, and in two distant localities. The surrounding overburden-covered area, 7,500 x 10,000 feet (Drawing 2), contains a large coincident zinc-lead-copper-silver soil geochemical anomaly, a coincident zinc soil and airborne EM anomaly, and two additional large EM anomalies.

Prior drilling, by Premier in 1945, Denison in 1961 and ASARCO in 1968, was confined to shallow diamond drill holes in the gossan exposed in the gorge. It established submarginal gold, zinc, silver and copper values as disseminated and veinlet mineralization.

More important is the potential in the surrounding and overburden-covered rocks for one or more lenses of massive pyrite-zinc sulfides containing gold, silver and copper values. The previous drilling provides compelling evidence that the nearby geologic environment favours such deposits. For example, trenches put in at random on the edge of the large composite geochemical anomaly in 1975 exposed significant gold, silver and lead mineralization.

1.2 Recommendations

Our recommendations are to confirm previous geologic and geochemical work, the latter on closer centres; to conduct a ground electromagnetic survey if warranted; and to drill several holes.

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The areas of interest are the soil-and-drift-covered benches south and north of the gorge, and the Buck River flat west of the gorge.

We suggest work be staged, as indicated below, starting with detailed geology and geochemistry. The directions of layering and the distribution of breccias within the volcanic rocks, for example, are of prime importance to the future work.

1.3 Estimated Costs

Stage I: Geology, Geochemistry; Duration 6 weeks

Fees, wages, benefits	\$ 9,000
Travel and field expenses	2,500
Geochemical and petrographic analyses	4,000
Engineering, supervision, reporting, design of Stage II	<u>2,500</u>
Total of Stage I	\$18,000

Stage II: Ground EM survey and ancillary work;
Duration 5 weeks

Geophysical contractor's charges TURAM, 18 line miles, including mob., demob., reporting, consultation	\$11,500
Fill-in geochemical survey, incl. analyses	6,000
Geochemical travel and field expense engineering, supervision, reporting, design of Stage III	<u>4,500</u>
Total of Stage II	<u>\$22,000</u>
SUBTOTAL Stages I and II	\$40,000

Stage III: Drilling; Duration 5 weeks

Contractor's charges, 5000 feet percussion drilling, incl. mob., demob., fuel, other charges	\$37,500
Assaying	5,000
Engineering, supervision, communications, reporting, consulting	<u>7,500</u>
	<u>\$50,000</u>
TOTAL Stages I - III	<u><u>\$90,000</u></u>

2.0 INTRODUCTION

2.1 Terms of Reference

Nevin Sadlier-Brown Goodbrand Ltd. was engaged by Mr. Harold S. Eisler and his associates to examine the Bob Creek deposit, which had been submitted to them by the claim holders, and to advise on whether or not to option the property. I examined the property May 20-21, 1976, and advised that while it is an outstanding property, the claims should be improved.

With the consent of the claim holders I abandoned and restaked the original claims on June 3-6, 1976, and added new claims. On September 24-25, 1976, Mr. J.T. Crandall, P.Eng., restaked an interior fraction.

After Mr. Eisler and associates had acquired the property, Mid Mountain Mining Ltd. asked us to prepare this report summarizing previous work, noting our observations, and advising on a course for exploration.

2.2 Location and Access

The property is located 6 miles straight-line distance south of Houston, B.C. (See Drawing 1). The property centres on Lat. $54^{\circ} 18'$ and Long. $126^{\circ} 37'$. It is accessible from Houston via the Sam Goosly road. It lies on map sheet 93L/7E.

2.3 Tenure

The property consists of 3 mining claims totalling 43 units, and completely overlapping claim of 12 units which covers interior fractions. The central claim is the New Buck, staked June 3, 1976, consisting of 20 units as shown on the map. The Record Number is 316. It was staked by Andrew E. Nevin acting as agent for Lorne Hansen and Godfrey Creech, following abandonment with permission to re-stake on several claims previously held by Hansen and Creech.

Two additional claims were staked by Nevin, the Lorne, staked June 4, 1976, Record No. 318, consisting of 8 units aligned immediately south of the New Buck; and the Godfrey, staked June 5, 1976, Record No. 317, consisting of 15 units and adjoining the New Buck to the north. All three claims were recorded June 7, 1976 at Smithers.

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After restaking the New Buck, the Mining Recorder advised Nevin Sadlier-Brown Goodbrand Ltd. that several fractions existed within the New Buck claim under that section of the Mineral Act which prohibits restaking of a lapsed claim by the same Free Miners (in this case, Hansen and Creech) within a year of forfeit. Mr. John T. Crandall of Nevin Sadlier-Brown Goodbrand Ltd. subsequently staked the Nabob Claim, Record Number 438, on September 25, 1976, over the west half of the New Buck to cover these fractions.

A discrepancy between the actual posts on the ground and the claim maps has resulted in a difference of opinion between the Mining Recorder and Nevin Sadlier-Brown Goodbrand Ltd. on the completeness of coverage. The Mining Recorder has advised us that a 1500 x 1500 foot fraction exists within the New Buck (restaking within a year of forfeit) and Nabob (by virtue of Section 2(3) of the Mineral Act).

We take the position that:

- (1) Title to all properties is secure.
- (2) Any question of a fraction of 50 acres within the New Buck - Nabob claims will be resolved in favour of the claimholders by a visit from a B.C. Claims Inspector in 1977 when the snow clears;
- (3) There is no risk of another prospector obtaining mineral title to any ground within the boundaries shown;
- (4) Mid Mountain can proceed with exploration;
- (5) All new posts and lines are in compliance with the Mineral Act and with precedents established by Claims Inspectors.

Nevin's rights to the Lorne and Godfrey claims, and Crandall's rights to the Nabob have been conveyed to Mr. Eisler and his associates, by means of Bill of Sale. Hansen and Creech have executed an agreement to option the ground now covered by the New Buck to Mr. Eisler and his associates.

3.0 EXPLORATION HISTORY

3.1 Early: 1914 - 1950

The gold-zinc deposit at Bob Creek has been known since 1914. A spectacular gorge exists in the canyon of Bob Creek, and the mineralization exposed in the gorge has been known to contain some free gold. It has been prospected and has been considered the source of placer gold at the mouth of Bob Creek. The property was variously known as the Horseshoe, the Bob or Buck, or the Goldbrick.

In 1936 one George Smith mined and jigged 85 tons of ore from an adit in the gorge. Smith produced 12 tons of gravity concentrate from ore calculated to average 0.1 oz./ton gold, 1 oz./ton silver, and 1.1% zinc.

Smith and other early workers drove several short adits, which are visible, but not safe to enter at present.

Premier Gold Mining Company sampled the outcrops and adits, and drilled 783 feet in 3 diamond drill holes in 1945.

3.2 Recent: 1951 - 1974

The property was subject to examinations by several companies in the 1950's. In 1961 Denison Mines drilled 8 diamond drill holes totalling 504 feet, in the gorge. Core recovery was generally poor and reconstruction of assays based on sludge samples suggests that results were too low grade to be of continued interest.

The property was optioned by Minwealth Explorations Ltd. in the late 60's. They retained Lockwood Survey Corporation to fly airborne magnetics and EM surveys, and they conducted some surface geochemical sampling and may have drilled at least one short diamond drill hole.

ASARCO optioned the property and drilled 7 holes totalling 2101 feet in 1968. These were also confined to the gossan exposed in the gorge.

In 1974 Hudson Bay Oil and Gas, under the direction of Andy Schmidt, P.Eng., obtained rights and conducted extensive soil geo-

chemical analyses, and geological mapping.

3.3 Present Status

In 1975 Lorne Hansen and Godfrey Creech put in several hundred feet of bulldozer trenches southwest of the gorge, high on the bank, in an area covered by overburden.

4.0 GEOLOGY

4.1 Regional

The acid volcanic rocks which are host to the sulfide mineralization on the New Buck claim are part of unit "i" of Dr. Neil Church's (1972) study of the region. This suite of rocks is early to middle Mesozoic and discontinuously underlies the region around the Sam Goosly ore deposit, the Parrot Lakes prospect, the Bradina Mine and other sulfide showings in the region. We infer that there is a link between the sulfides and the submarine Mesozoic volcanic centres of which deposited unit "i".

4.2 Local Geology

The principal mineralized outcrop on the New Buck claims is exposed in a 2000-foot long gorge in Bob Creek (see Drawing 2). It consists of light-coloured volcanics and volcanic breccias. The composition approximates that of a quartz latite or rhyolite.

The massive character of the unit, the high degree of alteration, and the absence of any marker beds introduce considerable uncertainty into judgements of its trend, or strike and dip. However, some stratiform (?) breccias suggest that the strike is northeast and the dip is steeply to the east.

The mineralized acid volcanic unit is intruded by a small gabbroic stock (GA in Drawing 2), and is overlain by post-ore volcanics of the Buck Creek unit, dated as Eocene or 47 million years old (Tv in Drawing 2). The Buck Creek rocks are andesites and basalts, and they form distinctive bluffs on the east and west sides of the claims, with minor erosional remnants overlying unit "i" within the claim group.

Pre-ore rock is not well exposed in the claim area. Outside the gorge mentioned, and a few other small outcrops, unit "i" is nearly continuously covered by a glacial clay overburden.

5.0 MINERALIZATION

5.1 Ore Minerals

The principal metallic minerals in order of volume are pyrite, sphalerite, chalcopyrite, galena, silver in an unknown form, and gold, occurring both as free gold and in one of the sulfides, presumably pyrite. The sulfides occur in lenses, as minute fillings in small fractures, and as coarse aggregates of disseminated grains within the matrix of volcanic rocks and breccias.

The occurrence of sulfides is not limited to exposures within the gorge of Bob Creek. Blackjack sphalerite and pyrite are present in abundant quantities in the trenches to the south of the gorge. Pyritized acid volcanics are also present in the southeastern New Buck claim in roadcuts, and in the central part of the Lorne claim in an outcrop in a meadow. These localities are shown on Drawing 2.

5.2 Oxidation

Oxidation is nearly complete in the rock exposed in the gorge. The pyrite and sphalerite have leached, creating a red iron oxide gossan. The gossan minerals are hydrozincite, hematite, jarosite and turgite, with subordinate amounts of bornite-stained pyrite and gypsum flakes in fractures. The volcanics are also altered to secondary kaolin and sericite.

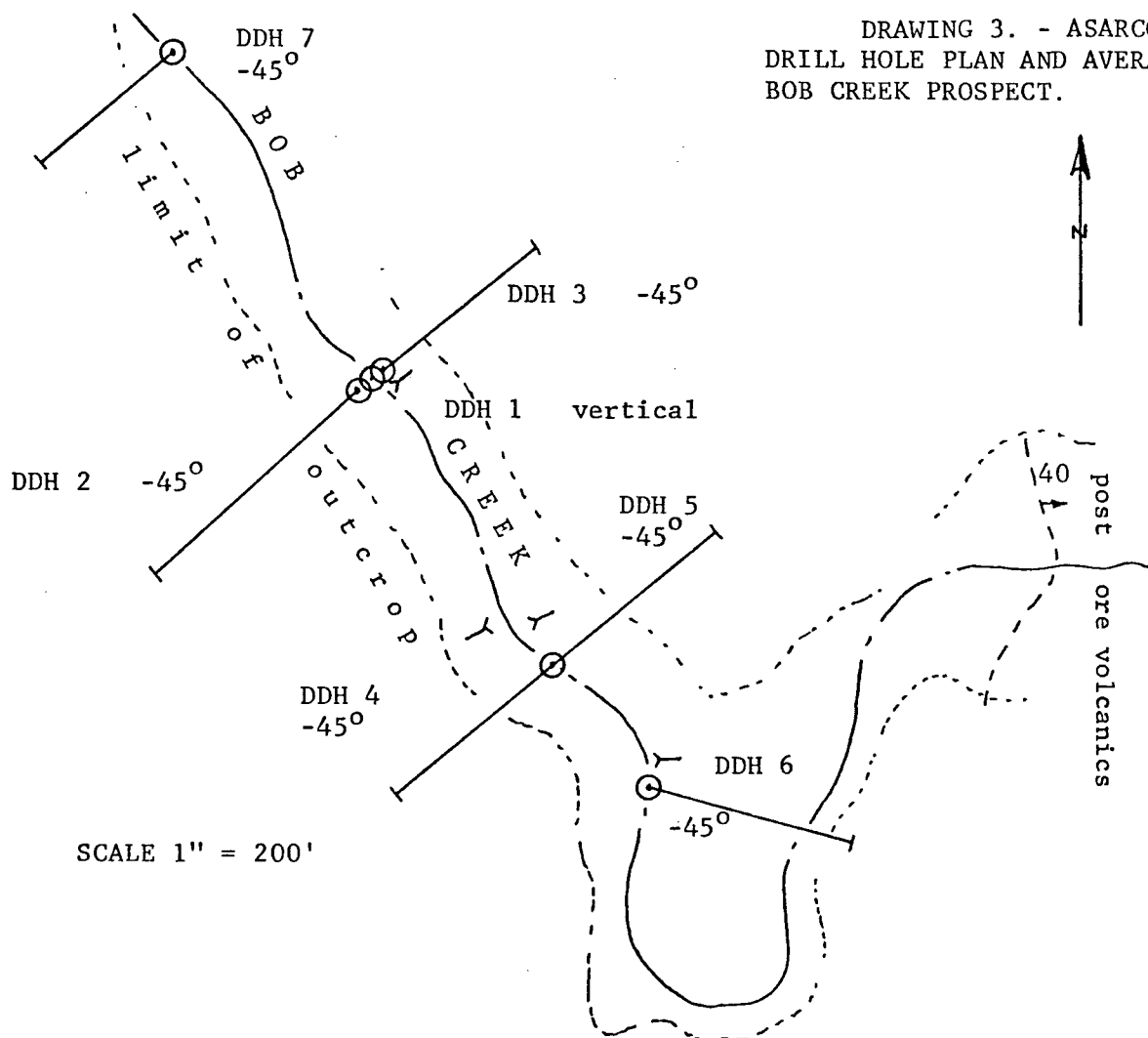
ASARCO's drill logs indicate that oxidation diminishes downward and ends, except in fault zones, at depths of about 30 feet.

5.3 Assays

The best indication of metal values in the gorge are given by ASARCO's diamond drill hole assays *, averaged and reproduced in Drawing 3. This mineralization represents 15 million tons grading about 0.017 oz. per ton gold, 0.19 oz. per ton silver, and 0.40 percent zinc.

* ASARCO's assays were run by TSL Labs by atomic absorption, with checks by TSL and Coast Eldridge by Fire assay. Correlation was good, and only the TSL AA results are used here.

DRAWING 3. - ASARCO 1968
DRILL HOLE PLAN AND AVERAGES,
BOB CREEK PROSPECT.



DDH	Total Depth (feet)	Average oz./T		% Zn	Footage	Representative Best Values		
		Au	Ag			Au	Ag	% Zn
7	250	.013	.289	.35	4-110	.018	.290	.32
3	303	.004	.047	.18	90-160	.009	.173	.23
1	250	.020	.191	.32	230-250	.070	.265	1.27
2	402	.021	.064	.25	130-200	.044	.213	.50
4	300	.033	.058	.35	90-180	.080	.090	.50
5	290	.023	tr	.23	8-50	.023	tr	.46
6	306	.010	.342	.71	60-100	.023	.203	1.36

Note: Values assayed as "trace" have been averaged as "0".

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These values are below profitable ore grades at present and in the foreseeable future, however, the gorge is not the current target.

Several surface sampling efforts have been undertaken, and a statistical analysis of Denison's core and sludge samples by G.R. Hilchey, P.Eng. These are less reliable: The surface samples because of oxidation (leaching of silver, zinc and copper, and enrichment of gold), and Denison's values because of core recovery problems. They are nonetheless reported in Appendix 'A'.

Some implications of assay data are discussed in Section 7.

6.0 GEOPHYSICS AND GEOCHEMISTRY

6.1 Airborne Geophysical Data

The Minwealth Exploration data were analysed in a report by P.P. Neilsen, Geophysicist, on behalf of Frontier Explorations, in a report dated April 1970. Neilsen observed that several EM anomalies having contours above 50 ppm were considered important. Some showed an in-phase to out-of-phase ratio greater than 1.2. Three of these occur in overburden covered areas close to the principal mineralized showing, and one of these coincides with a zinc soil geochemical anomaly. In general the three anomalies considered of interest to us are 300 - 700 metres long and 150 - 300 metres wide.

The airborne magnetic work indicated an east west magnetic grain, but did not indicate any substantial anomalies coinciding with other anomalous information.

6.2 Geochemistry

Hudson Bay Oil & Gas did the most comprehensive geochemical survey, taking soil samples at 400 foot spacings on lines 1000 feet apart over the major part of what is now the New Buck and the Lorne claims. Coinciding anomalies are present for copper, lead, zinc and silver in the soil. The coincident anomaly extends for a distance of 5000 feet southwest of the gorge. The anomalous area includes the recent trenches put in by the vendors and the pyritized outcrop in the meadow. In general the magnitude of the anomaly reaches interesting levels. The zinc threshold is

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considered to be 200 ppm and the anomaly ranges up to 1800 ppm. Lead exceeds 50 ppm against a background of 15. Copper exceeds 40 ppm against a background of 15 and silver is anomalous at 3 - 4 ppm against a background of 1.

7.0 EXPLORATION PREMISES

The gossan cropping out in the gorge has been well-tested and shown to be submarginal in grade.

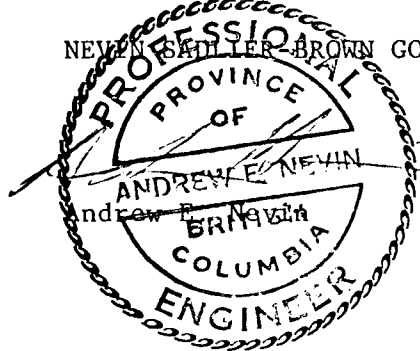
The geologic environment, however, is precisely one in which massive sulfide deposits are found, and the mineralization fortuitously exposed by erosion in the gorge might be considered as a low-grade extension of one or more high-grade sulfide pods located nearby, along strike, down dip, or in a higher or lower breccia unit.

The surrounding terrain has an overburden cover extensive enough that it has not been explored. A renewed programme has some focal points to start with: The EM anomalies, geochemical anomalies, and probably enough scattered outcrops to develop some stratigraphic and structural data on the volcanic rocks.

Average metal values of the ASARCO drill holes show no particularly diagnostic trend, although higher values seem to lie along a northwest trending axis. Ratios among metal values in the better intersections, however, show some trends which might be worth pursuing once geologic controls are developed. Gold/silver and zinc/silver increase to the southwest, suggesting a core in that direction.

Respectfully submitted,

NEVIN | SADLIER-BROWN | GOODBRAND | LTD



February 11, 1977

AEN/hm

CERTIFICATE

I, Andrew E. Nevin, hereby certify that:

1. My residence address is 962 Montroyal Blvd., North Vancouver, B.C., my office address is 5th Floor - 134 Abbott Street, Vancouver, B.C. V6B 2K4, and that I am a Geologist by occupation.
2. I hold a B.Sc. in Geophysics from St. Lawrence University, an M.A. in Geology from University of California, Berkeley, and a Ph.D. in Geology from University of Idaho. I have been practicing my profession since 1961, and I am a member of the Association of Professional Engineers (Geological) of the Province of British Columbia, and a Registered Professional Geologist in the State of Idaho.
3. I have examined the Bob Creek Property and reviewed the data thereon personally.
4. I hold no direct or indirect beneficial interest in the properties described in this report nor in the securities of Mid Mountain Mining Ltd. I staked the Lorne and Godfrey claims, and J.T. Crandall, P.Eng., of this firm staked the Nabob claim. This work was conducted for our client, for a fee, and we have conveyed all interest in the claims to our client by means of a Bill of Sale.

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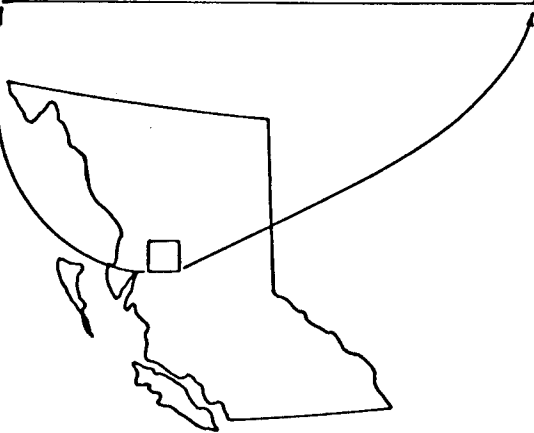
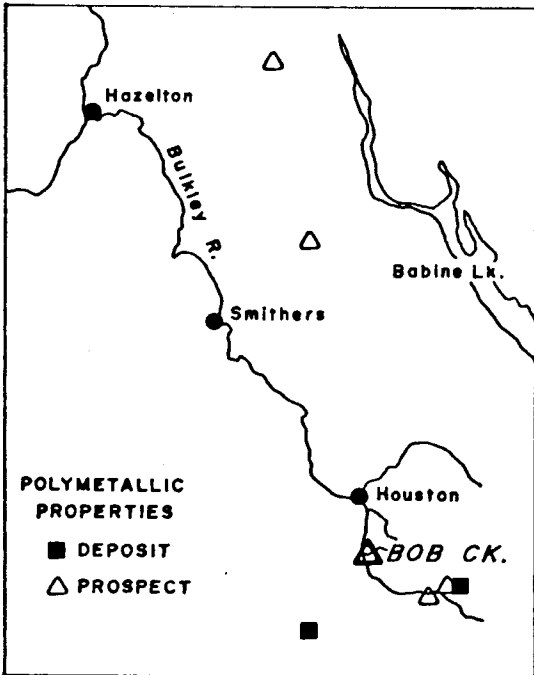
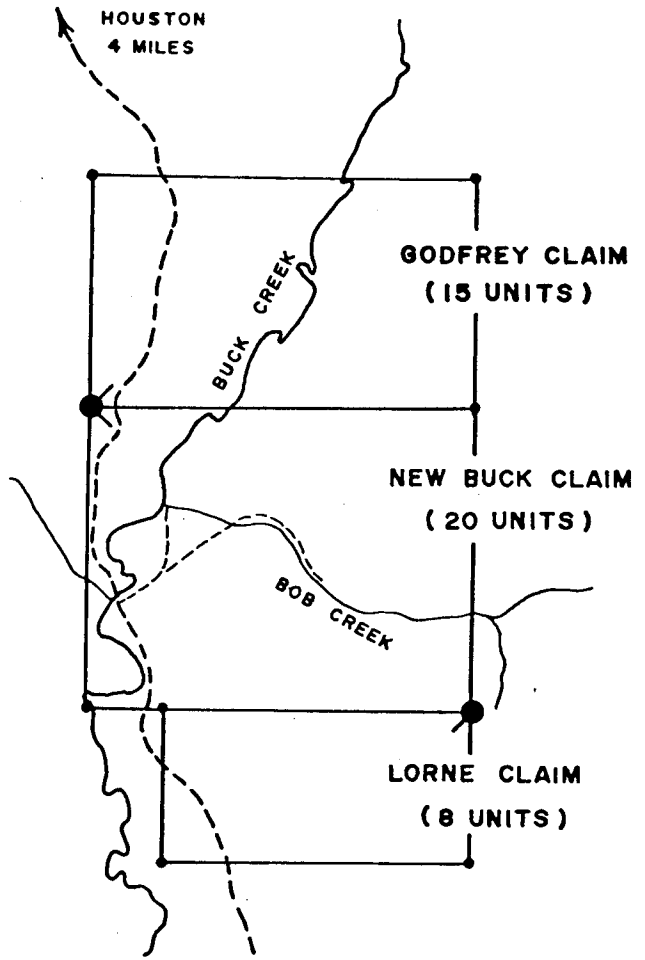
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APPENDIX A

Table: Summary of Reported Assays
Bob Creek Property

		GOLD oz./ton	SILVER oz./ton	ZINC %	LEAD %	COPPER %
May 25, 1976	# 49718 high grade 1975 trench	0.044	0.32	2.32	0.23	-0.01
E. Nevin	# 49719 black gouge 1975 trench	0.040	0.74	1.83	0.02	0.43
July 16, 1975	# 19121 B; 6" chip sample from fracture zone	0.16	5.4	3.7	0.35	0.07
J. Kocum	# 19122 B; 12" rock chips gouge in adit	0.03	0.5	1.25	0.01	0.04
	# 19123 B; 24" chip inside adit	tr	0.7	0.5	-	0.03
June 10, 1975	X-14467; gouge, contains pyrite & sphalerite; 2' chip; inside adit	0.03	0.41	2.0	-	0.06
J. Fraser (Noranda)	X-14468; altered feldspar porphyry with some pyrite; grab sample; in adit	0.04	2.50	0.56	-	0.17
	X-14469; gouge with pyrite and sphalerite; 1.2' chip; in adit	0.05	5.83	1.52	-	0.14
	X-14470; altered quartz-feldspar por.; contains pyrite; grab; in adit	-0.01	0.17	0.16	-	0.02
	X-14471; ditto	-0.01	0.12	0.16	-	0.02
	X-14472; ditto	-0.01	0.06	0.08	-	-0.01
	X-14473; ditto	0.01	0.35	0.13	-	0.02
	X-14474; altered qtz. por. with dissem. py.; grab in stream cut	0.10	0.12	0.36	-	0.01
	X-14475; gougy shalerite py. in qtz. por; grab in stream cut	0.06	2.16	1.88	-	0.06
July 30, 1973	# 611; canyon	2.64	8.7	6.25	12.3	0.94
Johnson's Bay & Gas Co.	#612; top of hill	0.02	0.15	-	-	0.02
1961, Woollett Denison Mines	Concentrate (Smith 1939)	0.43	6.5	7.7	-	-
	Weighted average of all diamond drill sludge assays of eight holes drilled by Denison Mines (after Hilchey 1967) (core recovery average 75% sampled width effectively 800 x 200')	0.0553	0.307	0.92	-	-
1952 Ford (Transcontinental Sources Ltd.)	Concentrates (Smith 1939)	0.45	7.0	8.0	-	-
June 12, 1951 Hansen	#1 - mill	tr	0.8	0.9		
	#2 - above tunnel	0.04	0.4	1.3		
	#3 - 4" in tunnel	0.48	13.2	8.2		
	#4 - across from 1st tunnel	0.72	4.2	18.3		
	#5 - west from upper tunnel	0.005	0.4	0.9		
	#6 - cross vein in dyke	0.32	14.4	3.8		
October 23, 1951 Radisica	Concentrates (Smith 1939)	0.48	8.15	8.3	tr	-
	#288; porphyry; coarse py.; some weathered zinblend	0.06	1.30	5.00	0.25	
	#289; fresh looking porphyry; py. but no zinblend	0.005	0.65	0.10	0.30	
	#290; porphyry; irreg, narrow zinblend stringers, also coarse py. and blobs zinblend	0.34	3.25	4.70	0.15	
	#291; breccia zone; considerable zinblend	0.21	4.75	5.00	0.20	
	#292; narrow, massive zinc stringers & interbedded coarse pyrite	0.12	2.10	32.50	0.40	
	#293; individual, massive zinblend stringers; no pyrite	0.72	8.30	21.00	0.65	
	#294; grab samples at random in oldest tunnel	1.32	10.70	7.50	4.70	
Nov. 2, 1949 Smith	#1; pyrite and sphalerite and galena in siliceous gouge	0.37	20.2	6.1		
	#2; powdered pyrite concentrates	1.5	7.1			
July 11, 1949 Hansen	#1 - 36'	tr	0.1	tr		
	2 - 8'	0.04	0.2	1.4		
	3 - 24'	tr	0.6	tr		
	4 - 20'	0.08	0.2	tr		
	5 - 42'	tr	1.8	tr		
	6	1.60	8.0	26.3		
	7	1.26	3.9	6.9		
	8	tr	0.1	-		
	9	tr	tr	tr		
	10	tr	tr	tr		
	11	tr	0.4	1.5		

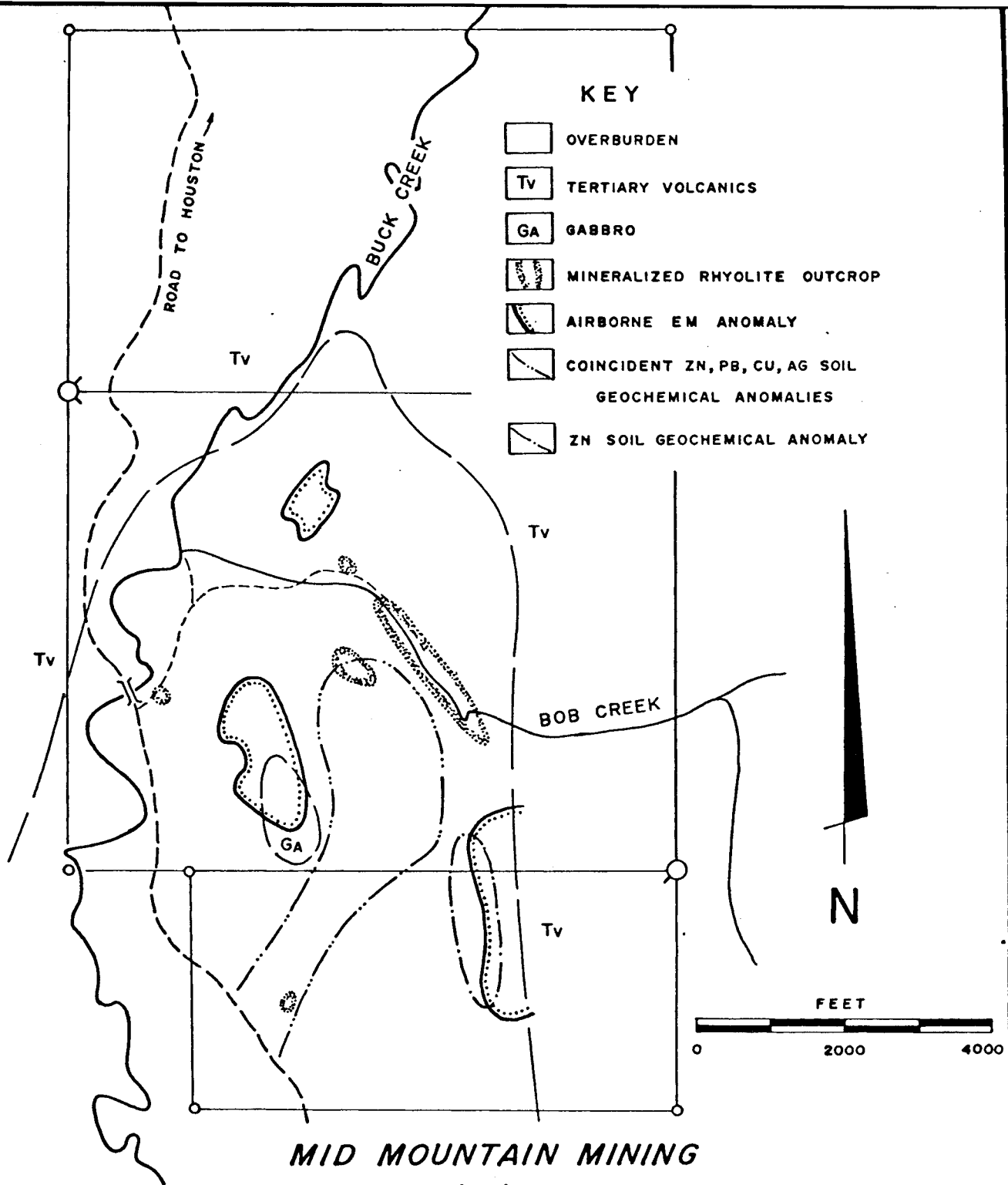


**MID MOUNTAIN MINING
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BOB CREEK PROSPECT
LOCATION MAP

Dwg. 1

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BOB CREEK PROSPECT
SUMMARY MAP
GEOLOGY GEOPHYSICS GEOCHEMISTRY

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Dwg. 2

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