

S.M.F  
1974  
← - 5 -

520657  
92H/1

INTERIM  
LISTING

2. ASHNOLA PROPERTY, OSOYOOS, BRITISH COLUMBIA

(a) Ownership and Purchase Price

The Company owns 159 located mineral claims situate about 23 miles southeast of Princeton, British Columbia, in the Osoyoos Mining Division, on the eastern flank of Placer Mountain of which:

<u>Claim Name</u>	<u>Record Number</u>
Max #1 & #2	14731 & 14732
Max #3 & #4	14865 & 14866
Cat #1 - #6	15103 - 15108
Cat #1 Fr. & #2 Fr.	15407 & 15408
Ash #2 & #4	15360 & 15362
Ash #6 & #8	15364 & 15366
Ash #10 & #12	15368 & 15370
Nola #1 - #28	15751 - 15778
Nola #35 - #44	15381 - 15390
Nola #1 Fr.	15495
Car #9 & #15	15504 & 15510
Car #28 & #30	15523 & 15525
Car #33 & #34	15528 & 15529

were acquired by agreement dated October 31, 1969 from the following persons for the following escrowed shares:

Joseph H. Montgomery	225,000 shares
Angus L. J. MacDonald	225,000 shares
Donald R. Cochrane	150,000 shares
Robert Wolfe	150,000 shares

and of which:

<u>Claim Name</u>	<u>Record Number</u>
Q #1 - #33	22827 - 22859
Q #35	22861
Q #37	22863
Q #39 - #42	22865 - 22868
Q #47 & #48	22873 & 22879
Jam #1 - #47	22774 - 22820
G.C. #1 - #6	22821 - 22826
McBride Fr. #1	23910
McBride Fr. #2	23911

were acquired by agreement dated November 3, 1969 from Joseph H. Montgomery, Angus L. J. MacDonald, Donald R. Cochrane and Robert Wolfe for the sum of \$10,000.00.

(b) Work Done

- (i) In 1961 Kennco Explorations Ltd. conducted a detailed exploration programme on part of the claim area, including geological mapping, a geochemical soil survey, geophysical surveys (including I.P.) and diamond drilling of 9 AX holes totalling about 2,700 feet. Estimated cost - \$60,000.00.
- (ii) Meridian Explorations staked the property in 1966 and, during that summer, performed a stream sediment survey, geological mapping, a geochemical soil survey, 7,000 feet of self-potential survey, about 45 miles of bulldozer trenching and road building, and about 700 feet of drilling and blasting.

Approximate cost - \$35,000.00.

# INTERIM LISTING

- 6 -

- (iii) In 1968 the property was under option to Quintana Minerals Corp. who drilled 6 NQ wireline holes totalling 2,951 feet, and performed geological mapping, trenching and soil sampling.

Estimated cost - \$60,000.00.

- (iv) In 1970 and 1971 Prism Resources Limited, following the recommendations of A.J. Sinclair, P. Eng. in a report dated December 27, 1969, completed geochemical, magnetometer and induced polarization surveys, trenching and geological mapping of the whole property.

Approximate cost - \$66,000.00.

- (v) In 1972 Getty Mining Pacific, Limited drilled about 15 holes on the property.

- (vi) In 1973 Craigmont Mines Limited drilled 2 holes on the property.

(c) Work Planned

Geological evaluation of results of the above work.

(d) Plant and Equipment

The Company does not own any underground or surface plant or equipment on the property.

(e) Engineer's Report

Report of A. J. Sinclair, Ph.D., P.Eng., dated October 5, 1973.

3. The Company has 4 located mineral claims in the Slocan Mining Division acquired by staking at a cost of approximately \$500.00 and 32 claims near Carrot River, Saskatchewan, acquired at a cost of approximately \$200.00.

PROPERTIES PREVIOUSLY HELD BY THE COMPANY AND SUBSEQUENTLY ABANDONED.

1. Smith Creek Property, Similkameen, British Columbia

The following claims (136) were allowed to lapse as of March 17, 1972:

Claim Name

Mickey 1 - 36  
Tauri 1 - 50  
Duck 1 - 50

The above claims were acquired by the Company for the cost of staking.

A geochemical soil survey conducted over the property by Prism Resources Limited failed to detect significant anomalies.

PROPOSED EXPLORATION PROGRAM

FOR

PRISM RESOURCES' ASHOLA PROPERTY  
Oroyos Mining Division

(Lat.  $49^{\circ} 07' N.$ ; Long.  $120^{\circ} 20' W.$ )

Dr. A.J. Sinclair, P.Eng.  
October 5, 1973.

## SUMMARY

- 1) Asnola Property of Prism Resources Ltd., consists of 155 mineral claims in Osoyoos Mining Division, B.C., about 27 miles southwest of Keremeos.
- 2) Geologically the claims group is similar to porphyry copper areas, particularly in the presence of a pyrite halo, type of alteration and sulphides, and the presence of a relatively high grade Cu zone along the southern inside edge of the pyrite halo.
- 3) Exploration drilling to date has been non-existent in the eastern two-thirds of the area contained within the pyrite halo, and widely spaced in the western one-third, where a relatively high grade zone is broadly defined.
- 4) Ore grade mineralization has not yet been located but an evaluation of work done to date in the light of recently recognized zoned models for porphyry copper deposits helps delineate drill sites to test targets of greatest ore potential.
- 5) A drilling program involving 4000 feet of percussion drilling and 5000 feet of diamond drilling is recommended. The cost of this program is estimated at \$100,000.00.

## INTRODUCTION

The Ashnola property of Prism Resources Limited, consists of 155 located mineral claims in good standing in Osoyoos Mining Division, British Columbia, about 14 miles southeast of the well-known Copper Mountain camp which includes the presently producing Ingerbelle deposit of Similkameen Mining Limited (Figure I). The claims are readily accessible via a good quality gravel road, the Ashnola forestry access road, that leaves Highway No.3. about 2 miles west of Keremeos. Several roads of poorer quality leave the access road at Mile 27 and extend westward through much of the property. A campsite with two plywood buildings in good condition is positioned centrally on the property and is readily accessible. Elevations range from about 3800 feet a.m.s.l. in Ashnola River valley to a maximum of about 6000 feet a.m.s.l. in the area of interest described here. Topography is fairly rugged. Slopes have a thick tree cover except for large areas of talus.

## EVALUATION OF WORK TO DATE

A brief summary outline of exploration work performed on the Ashnola property is presented chronologically in Table I. In total, some \$300,000.00 have been spent in exploring the claims, by 6 different organizations over a period of 13 years. Until 1970, this work was of a restricted nature, being confined in large part to testing fairly specific targets and/or concepts. In 1970 Prism Resources initiated a comprehensive geological, geochemical and

TABLE I

SUMMARY OF WORK COMPLETED  
ON ASHNOLA PROPERTY OF PRISM RESOURCES LTD  
(in part after Giroux, G., 1973)

YEAR	COMPANY	NATURE OF WORK	ESTIMATED COST
1961	Keneco Exploration	Geological mapping, partial geochemical soil and I.P. surveys, and 9 diamond drill holes totalling about 2700	60,000.00
1966	Meridian Expl. Synd.	Stream sed. survey, geological mapping, soil survey, 7000 feet of self potential survey, and 45 miles of bulldozer trenching and road building, and 700 feet of drilling and blasting	35,000.00
1968	Quintana	Geological mapping, trenching, soil sampling, and drilling of 6 NQ wireline holes totalling 2951'	60,000.00
1970-71	Prism Resources	Comprehensive soil geochemical, geophysical (I.P. and mag.) and geological surveys	66,000.00
1971-72	Getty Mining Pacific	Drilling as follows - 1 rotary hole           312' 15 percussion holes   1610' 6 NQ wireline           2969'	66,000.00
1973	Claughton Mines	2 diamond drill holes. geological investigation	15,000.00
TOTAL ESTIMATED EXPENDITURES			\$302,000.00

geophysical investigation of the entire claims group. As a result of this work a picture of the similarities between Ashnola property and classical porphyry copper deposits emerged, and exploration results are reviewed briefly in this light.

- 1) Geological: Outcrops are scarce and commonly are extensively leached. Most of the property is underlain by rhyolites, in large part porphyritic, and over much of the area, extensively altered. Less abundant lithic tuffs are also known and both units are cut by small irregular to dyke-like bodies of porphyritic quartz monzonite.

A ring of pyritized rock, about 2 miles in diameter, is included within the property. This pyrite "halo" is a characteristic feature of porphyry copper deposits, and should direct attention to the area encircled by the halo as having ore potential (Lowell and Guilbert, 1970). Other features on Ashnola property characteristic of porphyry copper deposits are abundant alteration features (silification, argillic-sericitic alteration) and quartz-sulphide mineralization (pyrite, chalcopyrite and molybdenite) in narrow veinlets of various orientations.

- 2) Geophysical: Chargeability values obtained as part of an I.P. survey are the most significant of the geophysical results. A ring of high values verify the continuity of the pyrite halo in a horse-shoe shaped band about 2 miles in diameter with a gap on the eastern side (Figure 2). Equally important is the central

are<sup>d</sup> of low background values containing a few isolated highs, only one of which is apparent in Figure 2 because of the contour interval on which it is based. These local highs are of particular interest in the search for ore grade zones.

- 3) Drilling. Drilling has been confined largely to the western half of the horse-shoe shaped structure. Although assay results for drill core and cuttings are below ore grade, an interesting pattern of grade distribution has emerged. Relatively high grade holes group in a zone along the southwest part of the central chargeability low, broadly paralleling the pyrite zone. This pattern can be seen in Figure 3, where it is further apparent that the high grade zone is "open" to the east in an area characterized by isolated chargeability highs.

Most drilling to date is contained within the pyrite halo and Cu grades range up to 0.05 %. This is comparable to the Kalamazoo orebody in Arizona where average copper content of the pyrite halo is .03% (Lowell, 1968). In many porphyry copper deposits, ore grade mineralized rock has a cylindrical form inside the pyrite halo (e.g. Kalamazoo). In other cases this "cylinder" is incomplete as appears to be likely at the Ashnola property.

In summary, geological and geophysical investigations, including drilling and assaying, indicate the presence of numerous features typical of porphyry copper mineralization on the Ashnola property. In particular, the pyrite halo, wallrock alteration and Cu-Mo



mineralization are characteristic, as is the indication of a "partial cylinder" of relatively high grade mineralized rock inside the pyrite halo. To date ore grade material has not been located but possibilities exist that a steeply plunging ore grade cylinder, or partial cylinder, has been missed by drilling to date. Some of the most obvious support for such an hypothesis is given by the distribution of the highest grade drill holes relative to the pyrite halo. These relatively high grade holes define a zone open to the east, within the central chargeability low but including two local chargeability highs. The writer (Sinclair, 1969, 1970) and Montgomery, (1968) had previously directed attention to the exploration potential of this area on somewhat more speculative grounds but including geological, geophysical, and geochemical data then available, a statistical study of these data, and drill results. It is now even more apparent that an important target area has been ignored.

#### PROPOSED EXPLORATION PROGRAM

To test the property thoroughly two concepts must be evaluated.

- 1) the probability of a relatively shallow ore zone in the as yet untested eastern part of the central chargeability low within the pyrite halo, and
- 2) the possibility of a deep ore zone, or a narrow steeply plunging cylindrical or partial cylindrical ore zone.

### Shallow Investigation.

A program of percussion drilling over the eastern part of the central chargeability low is warranted to test for presence of a shallow ore zone. An ideal plan of 10 proposed drill holes is shown in Figure 4. Some terrain and overburden difficulties might be encountered in this program so that in practice some modification of the proposed percussion hole sites might be necessary. It should be borne in mind that the drill plan presented is based on about a 90 percent certainty of locating a well defined target 800 feet in diameter in plan (such a target is equivalent to 42,000 tons per vertical foot, or 21 million tons per 500 vertical feet, and probably represents a realistic target for the grade that might reasonably be expected). The justification for this program lies in the variable complexities of porphyry copper deposits (e.g. Sutherland-Brown, 1968) and, in particular, the different ore positions relative to pyrite haloes in known porphyry copper deposits.

### Deep Drilling.

Montgomery (1968) first recommended deep drilling on the basis of conceptual geological reasoning and the results of Quintana drilling, particularly d.d.h. Q-3. More recent work supports this general idea but permits such a drill program to be outlined much more explicitly. This drilling must test:

- 1) continuation of the high grade zone into the as yet untested part of the central chargeability low.

- 2) significance of local chargeability highs in the central chargeability low.
- 3) the possibility that a relatively narrow, vertical, or steeply dipping ore sheet towards the inner edge of the pyrite halo has been missed by drilling to date.

The first two of these conditions are coincident in large part and present fairly precise location of deep inclined holes. The third concept is difficult to check exhaustively, except at relatively high cost. It is, however, closely tied to the conceptual reasoning of Condition 1.

Two drill holes should be located as follows.

- #1: Centred on access road 300 feet southeast of hole M.C.-1 (Figure 4 ). This hole should be oriented in a N 03° E direction and drilled at an angle of -30° for a distance of 2000 feet.
- #2: The exact position of hole No.2. could depend significantly on drill results from the No.1. Hole. However, it should be collared approximately as shown in Figure 4 and drilled N 07° W at -30° for a length of 1600 feet.
- #3: Exact positioning again depends on results of previous two holes but on the basis of present knowledge should be located as shown in Figure 4 and drilled in a westerly direction at - 30° for a distance of 1400 feet.

ESTIMATED EXPENDITURES


1. Percussion Drilling (including supervision)		
10 holes - 4000 ft @ #3.50/ft.		14,000.00
2. Diamond Drilling (including supervision)		
3 holes - 5000 ft @ \$15.00/ft		75,000.00
3. Ancillary work including road clearing, preparation of drill sites, assay costs, contingencies		11,000.00
	TOTAL ESTIMATED EXPENDITURES	\$100,000.00

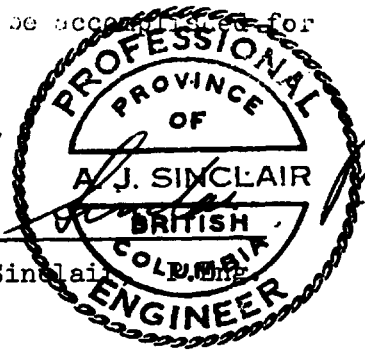
CONCLUSIONS

Exploratory work to date on Prism Resources' Ashnola property, including geological, geochemical and geophysical surveys, and considerable drilling over a part of the property, points to the general similarities of the property to many porphyry copper deposits. Work to date has not tested adequately the classical porphyry concept enunciated by Lowell and Gilbert(1970). That the Ashnola property is a porphyry-type deposit has not been questioned for some years. The critical question is whether or not ore grade mineralized exist. Cut-offs between ore grade and lower grade zones, although gradational, commonly occur over distances of a few tens of feet. Thus the chances are high that a 200 foot wide cylindrical ore zone could have been missed even in areas tested by drilling.

The property warrants a close examination for the possible presence of typical porphyry-type ore zones. These might include

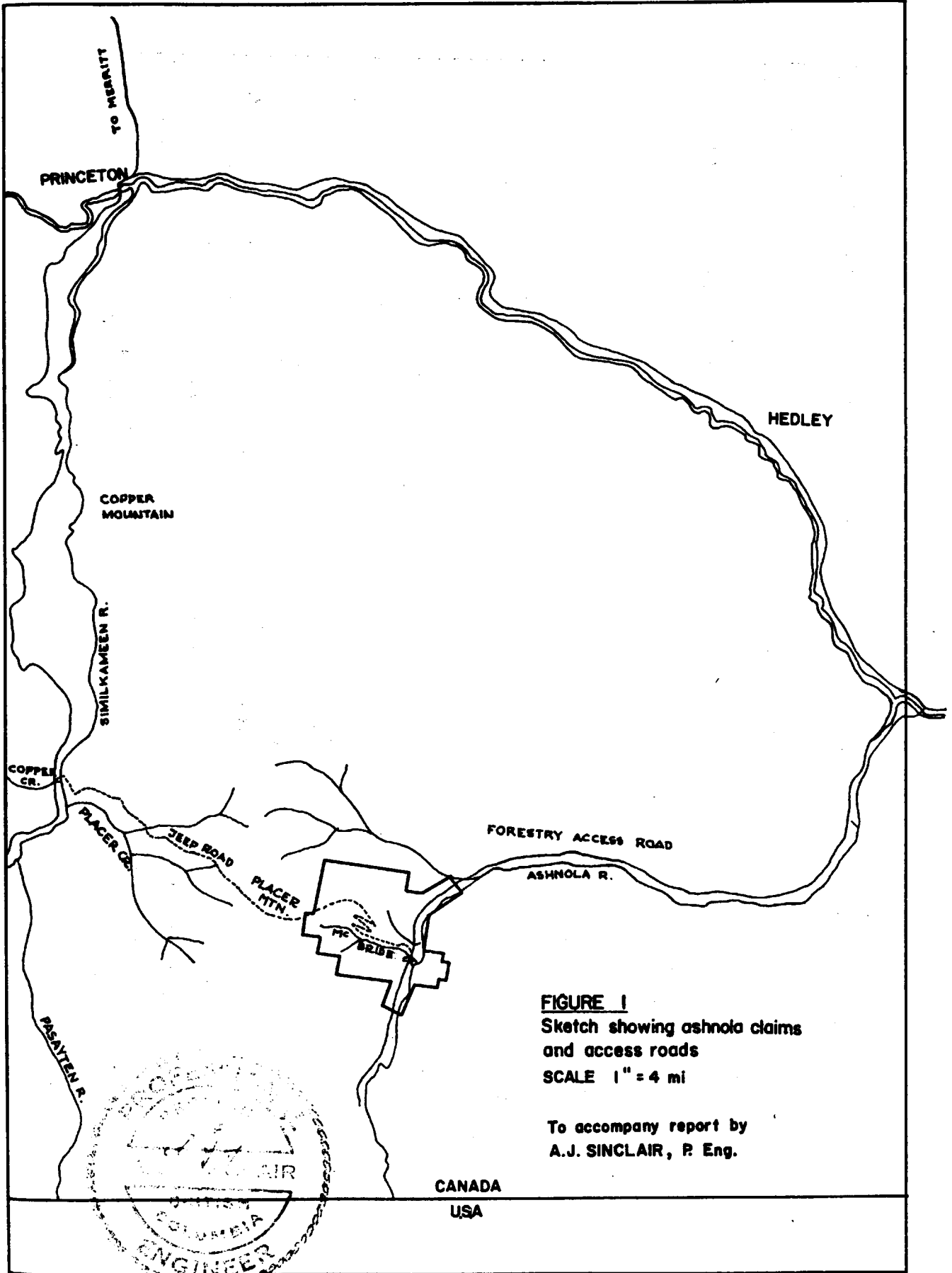
hollow cylindrical or partially cylindrical zones inside the pyrite zone, or less regularly located mineral concentrations related to crackle zones or breccias. A percussion and diamond drilling program designed to test these possibilities can be accomplished for a total cost of \$100,000.00.

  
\_\_\_\_\_ A. J. Sinclair *Eng.*



REFERENCES

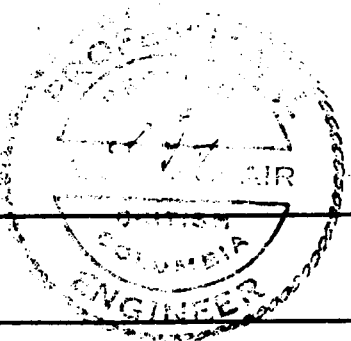
- GIROUX, G.H., P.Eng. 1973. Progress report on the Ashnola Cu-Mo property, Osoyoos Mining Division, British Columbia; private report for Prism Resources Ltd., dated May 10, 1973, 9 p.
- SINCLAIR, A.J., P.Eng., 1969. Report on Car, Nola, Ash and Q claims for Prism Resources Ltd., in 'Prism Resources' Prospectus dated April 20, 1970, and filed with the British Columbia Securities Commission.
- LOWELL, J.D., 1968. Discovery and Exploration of the Kalamazoo orebody: Reprint 68-I-3 of paper presented at A.I.M.E. Ann.Mtg, New York, February 25-29, 11 p.
- SINCLAIR, A.J., P.Eng., 1971. Report on the Ashnola property of Prism Resources Limited, Osoyoos Mining Division, unpubl. company report dated October 15, 1971.
- SUTHERLAND-BROWN, A., 1969. Mineralization in British Columbia and the copper and molybdenum deposits. C.I.M. Bull. V.62, p. 26-40.
- LOWELL, J.D., and J.M. Guilbert, 1970. Lateral and vertical alteration-mineralization zoning in porphyry ore deposits; Ec. Geol. V.65, p. 373-408.
- MONTGOMERY, J.H., P.Eng., 1968. Report on diamond drilling of the St. Louis project (on behalf of Quintana Minerals Corp.). Report dated November 30, 1968, 13 p. plus drill logs.

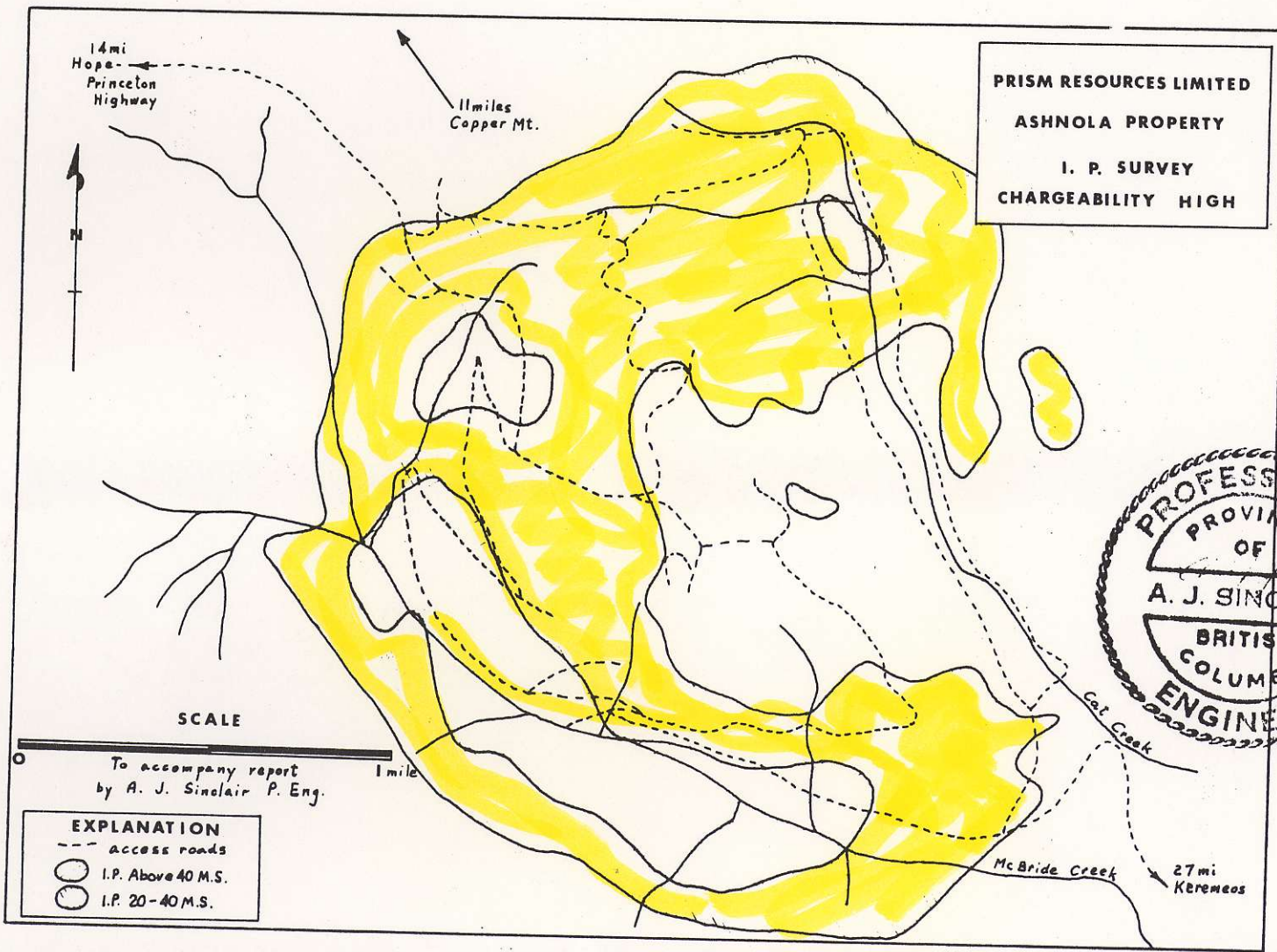


**FIGURE 1**  
 Sketch showing ashnola claims  
 and access roads  
 SCALE 1" = 4 mi

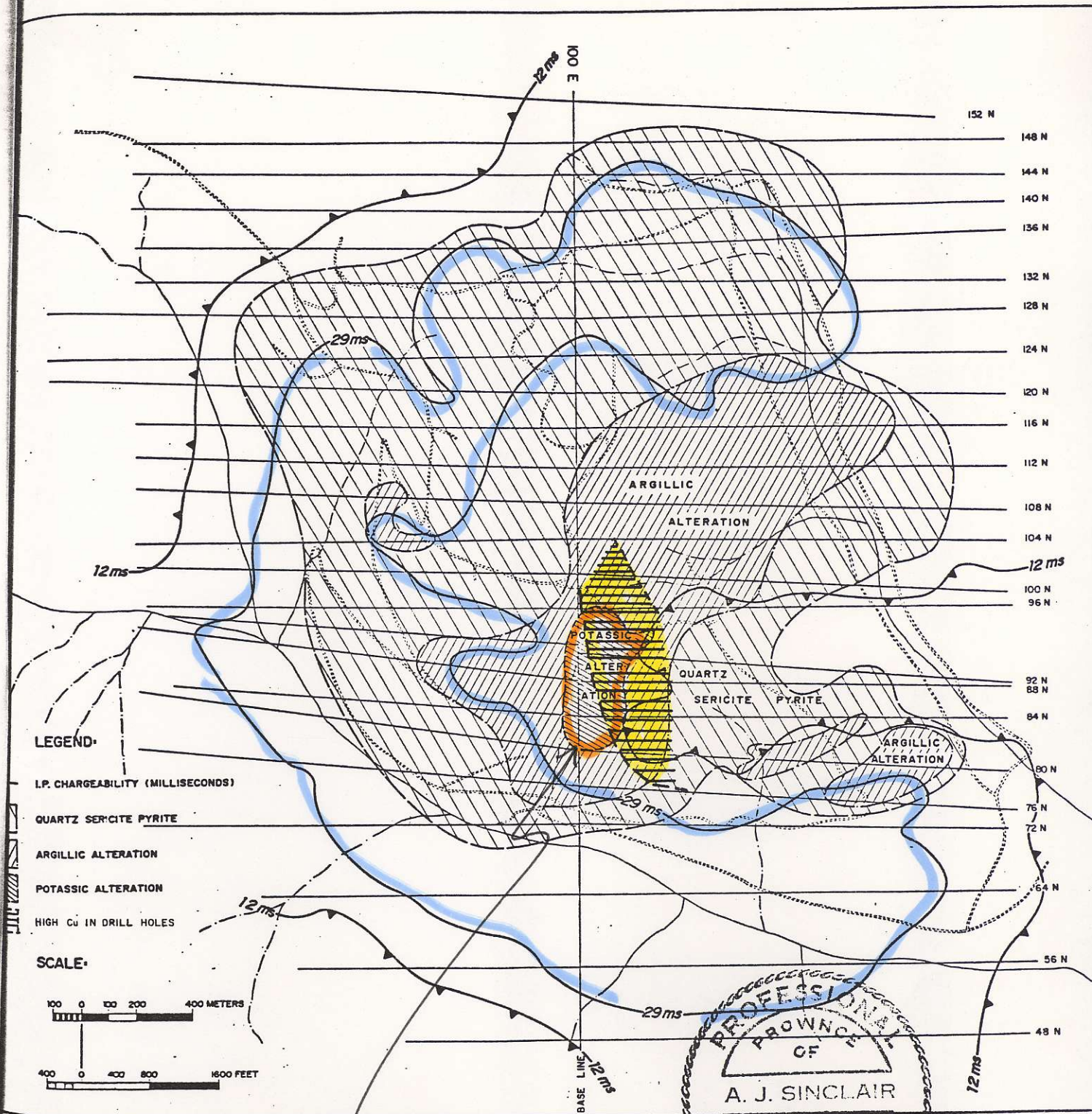
To accompany report by  
 A.J. SINCLAIR, P. Eng.

CANADA  
 USA





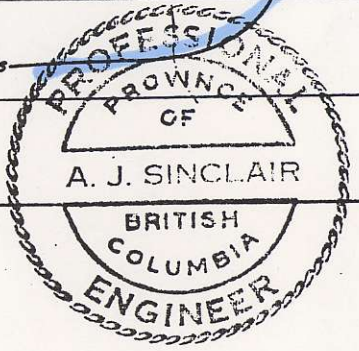
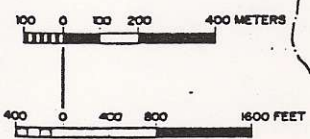




**LEGEND**

- L.P. CHARGEABILITY (MILLISECONDS)
- QUARTZ SERICITE PYRITE
- ARGILLIC ALTERATION
- POTASSIC ALTERATION
- HIGH Cu IN DRILL HOLES

**SCALE**

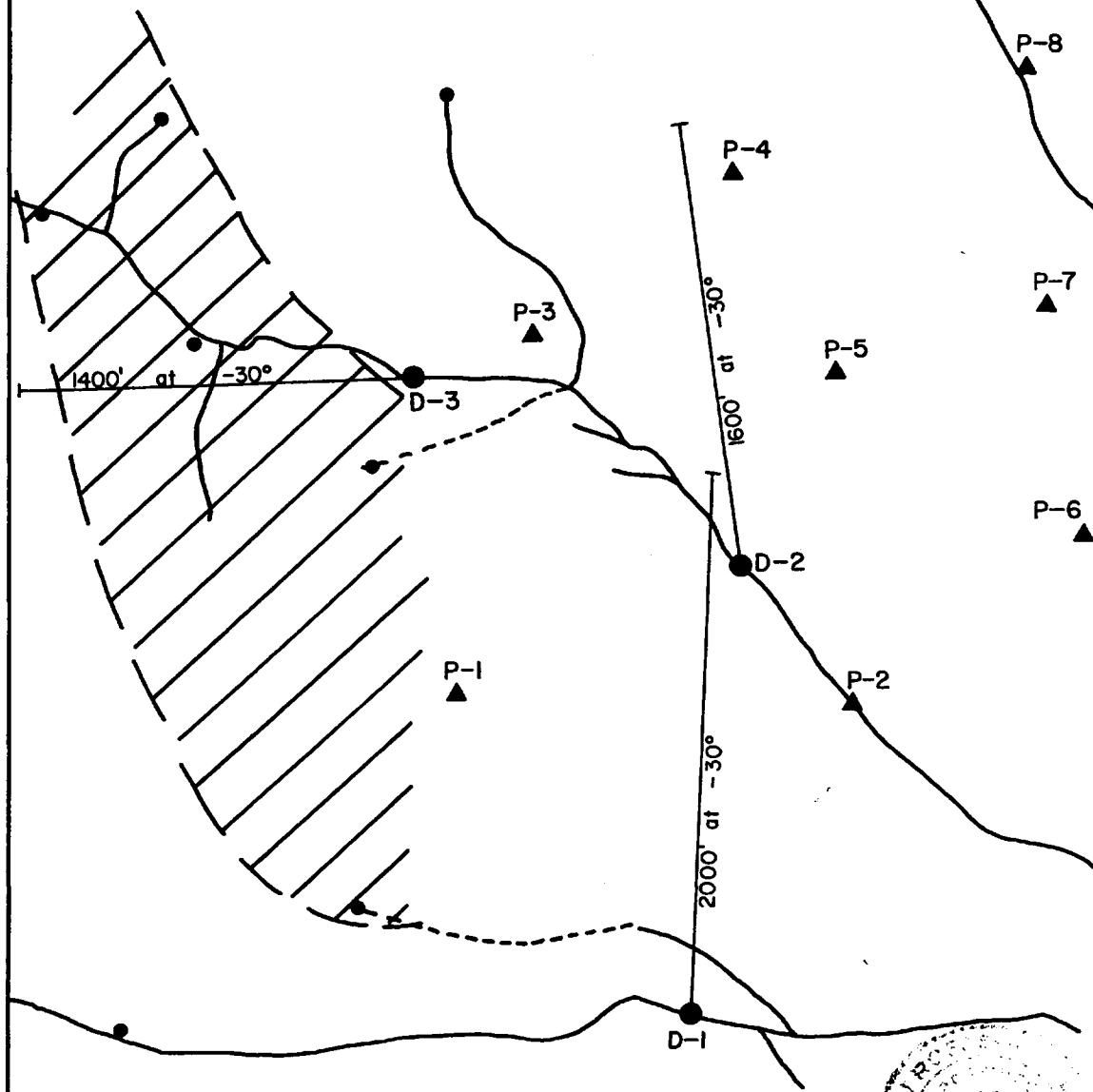


*200m x 600m target - of potassic alteration to Cu.*

*Fig-3*

**LEGEND**

- P-3 ▲ Proposed 400' percussion hole
- D-2 ● Proposed diamond drill hole  
Inclination and length shown
- //// High Cu in drill holes
- Diamond drill holes
- 4-Wheel drive roads
- - - Trenches and skidtrails



To accompany report by:  
A.J. Sinclair, P. Eng.

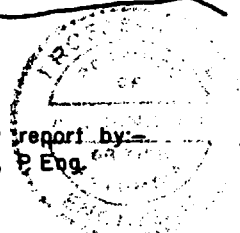


FIG. 4