

W.A. No. ....

NAME ..... PROPERTY FILE

SUBJECT ..... Geol Rpt-

ALTOONA

82FNU015 - 07  
PROPERTY FILE  
001975

HALLMAC MINES LTD. (N.P.L.)

THE ALTOONA MINE

(49° 117° NE)

SLOCAN MINING DIVISION

B.C.

February 12, 1972

82FNW015-07  
PROPERTY FILE

George L. Mill, P.Eng.

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## INTRODUCTION

This report, prepared at the request of officials of Hallmac Mines Ltd. (N.P.L.), 35 - 539 West Pender Street, Vancouver 2, B.C., has reference to a mining property located in the Slocan Mining Division of British Columbia and comprising a total of 65.85 acres. Its purpose is to advance recommendations for an exploration program, moderate in cost, but yet adequate to provide preliminary information as to the economic potential of an ore shoot on which a substantial amount of underground work has been done in the past by former, as well as present, owners. To date inadequate financing has forced the suspension of initiated programs in their preliminary stages and none has yet reached a point at which pertinent information has been made available.

## SUMMARY

This report advances recommendations for the implementation of the initial stage of an exploration program directed to the study of the potential of the Altoona property as an economic producer of a lead, zinc and silver ore at current operating costs and metal prices. This initial stage calls for a ground survey and underground drilling from a drill station already available on No. 2 level. Results from this stage, which will require an estimated capital outlay of \$15,000.00, will serve to determine the economic advisability of proceeding with further stages presently under consideration.

PROPERTY

The subject property, held by Hallmac Mines Ltd. under an option-purchase agreement, comprises two contiguous Crown-Granted mineral claims, namely:

Altoona Claim - Lot 1918 - 46.35 acres.

Bow Knot Claim - Lot 1919 - 19.5 acres.

While the acreage covered by the two claims is not large available maps indicate that the locations of the existing workings, together with the easterly strike and the southerly dip of the zone of mineralization, provide an area of sufficient size for operating purposes, assuming favourable lode continuity conditions.

The writer has recommended that the exact location of the property boundaries be determined on the ground as part of the first stage of the exploration program.

LOCATION AND ACCESSIBILITY

No. 2 Portal of the Altoona Mine is located alongside the presently abandoned right-of-way of the Kaslo & Slocan Railway and is readily accessible by car over this route from Sandon -- a distance of a mile and a half. The main road between Sandon and New Denver (9 miles) passes 200 feet west of No. 4 Portal.

### PHYSICAL FEATURES

The Altoona workings lie between 3324 and 3677 feet above sea level. There is a limited amount of suitable timber on the property for underground use but an adequate supply is readily available from communities in the general area. Local creeks and springs supply ample water to meet exploration requirements. Snow conditions vary greatly from year to year but mining can generally be carried on continuously. The Silmonac property across the valley from the Altoona is now operating its concentrator in Sandon and continuous transportation facilities will be available between that community and New Denver throughout the year.

### HISTORY OF THE PROPERTY

The Altoona Mine was worked intermittently throughout the first half of the present century but there are no production figures on record prior to the acquisition of the property by the Kootenay Belle Mining Company in 1950. During the next two year period 4228 tons were recorded as shipped to the Whitewater concentrator at Retallack. The concentrates are reported as having carried 5,027 ounces of silver, 46,555 pounds of lead and 319,377 pounds of zinc. As such factors as the terms of the beneficiation agreement, the efficiency of the Whitewater concentrator on that particular ore, etc. are unknown it is not possible to calculate the grade of the raw ore shipped.

The property then remained inactive until Sven Hallgren rehabilitated a portion of the workings in 1965 and shipped 961 tons to local concentrators for treatment. Of this tonnage the records of the Carnegie Mill at Sandon show receipts totalling 270 tons grading 3.0 ozs./ton silver, 2.8% lead and 6.6% zinc.

The property has been developed over the years along four major horizons. At date of writing two of the four levels are readily accessible. No. 1 Level (elevation 3,580) has 1,050 feet of drifts and cross-cuts and No. 2 Level (elevation 3,500) 900 feet of workings together with two raises to the 3,580 foot horizon. Both No. 3 Level (elevation 3,404) and No. 4 Level (elevation 3,324) are caved at their portal and the extent of their workings is unknown.

#### GEOLOGY AND MINERALIZATION

The country rocks in the mine area are essentially steeply-bedded argillites and limestones of the Slocan Series, striking northwesterly, and cut by numerous dykes and sills of quartz-feldspar porphyries which are apparently tongues extending from a porphyry mass lying to the south.

The Altoona lode follows a shear zone which strikes eastward and varies in dip from 30 to 60 degrees southerly. All stoping operations carried out to date have been along this easterly-trending shear zone. Lamb classes the mineralization as two types, namely, a vein type on the lode and a replacement type occurring as irregular swellings from the lode into the limestone. He estimates that two-thirds of the ore mined to date was the replacement type.

While mining to date appears to show that the ore is associated with the shearing and the intruding dykes and sills, Lamb considers that the ore control picture at the Altoona is not too clear. In the case of the replacement type ore he states that: "It is obvious that a limestone or limey argillite, where crossed by the lode, may well form the locus of such mineralization. The role of the porphyry sills is suspected, from the evidence of other Slocan mines, to be that of a ground stiffener, which could

maintain better openings for mineralizing fluids. It is probably no coincidence that fairly large sills cross the lode at the present stope locations."

Mineralization consists of pyrite, sphalerite, galena and silver. Because of its relatively high pyrite content and limey characteristics, the latter chiefly with regard to the replacement ore, this ore may present difficult, but not necessarily insurmountable, beneficiation problems.

#### CONCLUSIONS AND RECOMMENDATIONS

At the present state of its development the prime target in the Altoona Mine appears to be the main shoot which has been stoped above both the No. 1 and No. 2 levels. As seen on the enclosed map the relative position of these two stopes indicates that this shoot rakes easterly. They are connected by an ore pass but their backs are not accessible and it is not known whether the ore terminated at these points in either or both cases. Indications point, however, to the probability that further ore exists below No. 2 level. A new cross-cut was driven in 1970 in order to establish a drilling station to explore the downward rake of this main shoot but the actual drilling was not done.

The recommendations and cost estimates appearing in this report are directed primarily to this drilling program. Should results indicate that the deposit has down-dip potential then consideration will have to be given to the implementation of additional exploration stages to investigate:

1. The possible eastward extension of the Altoona lode on No. 2 level. Several diamond drill holes are located close to the eastern face of



the drift. According to information obtained locally these were drilled by the Kootenay Belle Mining Company about 1951. Results were said to have justified the advance of the face but the project was not undertaken. This area would best be tested by extending the cross-cut from the drill station back to the lode then advancing eastward along the lode. This procedure will prove more economical than re-opening the present drift eastward from its junction with the cross-cut as it is narrow, partially filled with waste rock, has two open stopes above it and appears to have been driven on a steep grade.

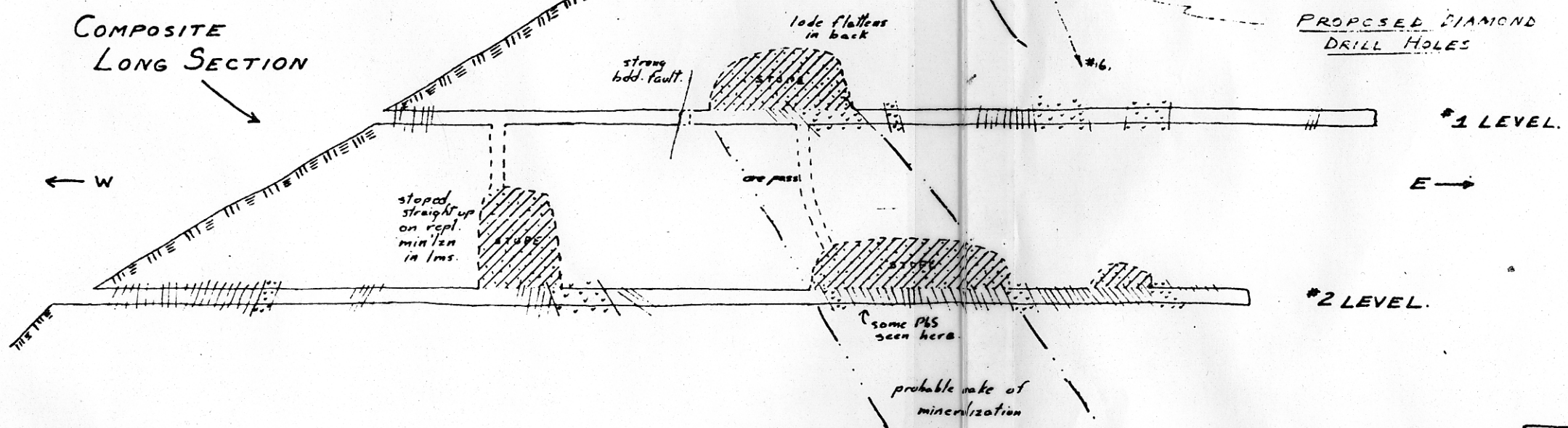
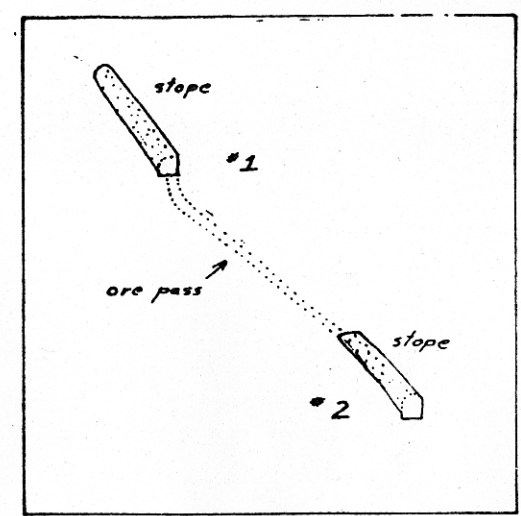
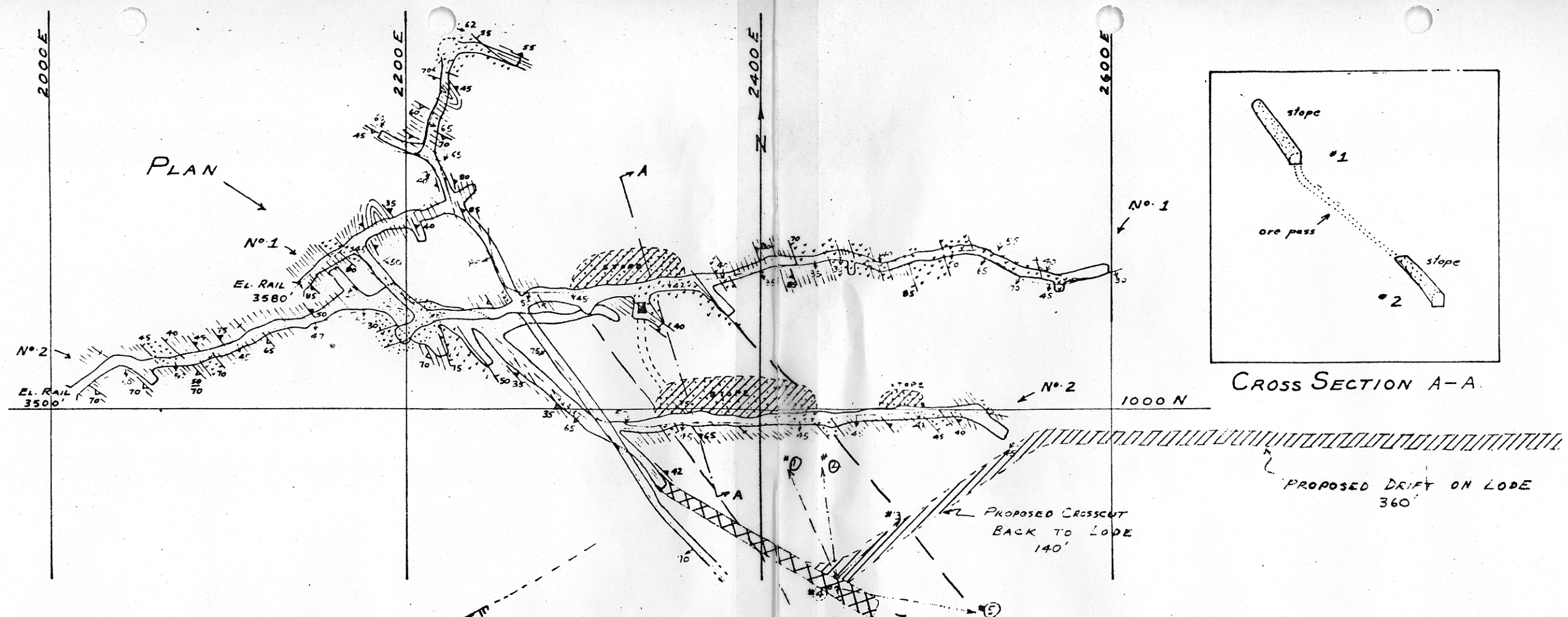
2. The extent and direction of the workings at the Nos. 3 and 4 Level horizons. In both cases the portals are caved and would have to be rehabilitated at least to an extent sufficient to provide safe access for geological mapping. There is no information available relative to the workings at either of these horizons and it is noted that no lode material may be seen on their respective dumps.

It is recommended, therefore, that immediate consideration be given to the implementation of an initial exploratory stage limited to a ground survey and underground drilling and that any decision pertaining to further stages be held in abeyance pending receipt of the results obtained in the initial stage.

In detail this initial stage will call for:

1 - A survey to determine the exact location of the mine workings with respect to the claim boundaries.

2 - A minimum of six holes drilled from the station at the face of the No. 2 level cross-cut driven in 1970 to test for the down-dip



**LEGEND**

	ARCILLITE
	LINESTONE
	QUARTZITE
	QUARTZ-FSPAR PORPHYRY
	ORE-TYPE MINERALIZATION STOPE
	FAULT, SHEAR OR LOBE ZONE

**MAP 2.**

**ALTOONA MINE**  
SANDON B.C.

**Nos 1 & 2 LEVELS**  
**UNDERGROUND GEOLOGY**

Surveyed with a chain and Brunton compass  
MAY 1969 J. LAMB P. ENG.

82F/14E  
82F/NW-15

HALLMAC MINES LTD. (N.P.L.)

THE ALTOONA MINE

(49° 117° NE)

SLOCAN MINING DIVISION

B.C.



November 9, 1970

PROPERTY FILE  
82FNW015-07

George L. Mill, P.Eng.

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(b) Nos, 1 and 2 Levels - Underground Geology - J. Lamb, P. Eng.	
(c) Nos. 1 and 2 Levels - Underground Geology - J. Lamb P. Eng.	

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## SUMMARY

This report recommends an exploration program on the Altoona and Bow Knot mineral claims estimated to require a capital outlay of \$65,000.00. The recommended program calls for diamond drilling from No. 2 Level to test the downward rake of the main ore shoot, the rehabilitation of the portals at both No. 3 and No. 4 Levels and drifting eastward on No. 2 Level to explore the ledge at that horizon.

The economic feasibility of extending the present workings either along No. 3 Level or No. 4 Level or, as an alternative, driving a new low-level heading from a more favourable location, will depend upon the results obtained in the program outlined above.

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The writer has recommended that the exact location of the property boundaries be determined on the ground as part of the first stage of the exploration program.

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As noted on Map No. 1 contained in the attached envelope the No. 2 Portal of the Altoona Mine is located alongside the presently abandoned right-of-way of the Kaslo & Slocan Railway and is readily accessible by car over this route from Sandon -- a distance of a mile and a half. The main road between Sandon and New Denver (9 miles) passes 200 feet west of No. 4 Portal.

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#### CONCLUSIONS AND RECOMMENDATIONS

At the present state of its development the prime target in the Altoona Mine appears to be the main shoot which has been stoped above both the No. 1 and No. 2 levels. As seen on Map 2 enclosed in the attached envelope the relative position of these two stopes indicates that this shoot rakes easterly. They are connected by an ore pass but their backs are not accessible and it is not known whether the ore terminated at these points in either or both cases. Indications point, however, to the probability that further ore exists below No. 2 Level. A new cross-cut was driven last winter in order to establish a drilling station to explore the downward rake of this main shoot but the drilling has yet to be done.

It will be noted that two other small areas have been stoped out above No. 2 Level. Several diamond drill holes are located close to the eastern face of No. 2 Level drift. According to information obtained locally these were drilled by the Kootenay Belle Mining Company about

1951. Results were said to have justified the advance of the face but the project was not undertaken. The writer believes that the eastward potential of the Altoona lode on that level should be investigated.

With reference to No. 3 and No. 4 Levels consideration should be given to the rehabilitation of their portal areas at least to an extent sufficient to provide safe access for geological mapping. There is no information available relative to the workings at either of these horizons and it is noted that no lode material may be seen on their respective dumps. This stage of the work would aid greatly in the planning of any future program, should work on the upper horizons offer encouragement.

It is recommended, therefore, that:

1. A survey be carried out to determine the exact location of the mine workings relative to the property boundaries.
2. The possible acquisition of additional ground, especially adjoining the northern and eastern boundaries of the present holdings, be investigated.
3. Mapping of the surface geology be extended to cover the northern and eastern portions of the property.
4. From the face of the new cross-cut driven last winter on No. 2 level, drill at least, the six holes, as laid out on Map 2, to test the rake of the main ore shoot. The data on these holes are as follows:


<u>Hole No.</u>	<u>Direction</u>	<u>Inclination</u>	<u>Length</u>
1	N25W	-14°	90 ft.
2	N8W	-57°	70 ft.
3	N49E	-72°	90 ft.
4	--	-90°	110 ft.
5	S80E	-62°	150 ft.
6	S22E	-75°	170 ft.
		Total	<u>680 ft.</u>

N.B. An allowance of 1,000 feet has been made in the accompanying estimates to allow for deepening of these holes if indicated.

5. Re-open the No. 3 and No. 4 Level portals to provide safe access for checking and mapping. A front-end loader will be required for this phase of the program.
6. As indicated on Map No. 2 extend the new cross-cut (No. 2 Level) to intersect the Altoona lode, then drift along the lode for about 350 feet. This procedure will prove more economical than re-opening the present drift as it is narrow, partially filled with waste rock, has two open stopes above it and appears to have been driven on a steep grade.

As appearing in the attached costs it is estimated that the above program will call for a capital outlay of \$65,000.00.

Respectfully submitted,

  
George L. Mill, P. Eng.

COST ESTIMATES

Mobilization	\$ 1,000.00
Surveying and Mapping	\$ 1,500.00
Diamond Drilling (1000 feet @ \$7.00/ft.)	\$ 7,000.00
Equipment Rentals/Purchase	\$ 2,500.00
Rehabilitation of Portals	\$ 1,000.00
Drifting and Cross-Cutting (300 feet @ \$80.00/ft.)	\$40,000.00
Engineering and Administration	\$ 5,000.00
Contingencies	<u>\$ 7,000.00</u>
TOTAL	<u><u>\$65,000.00</u></u>

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