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**PROPERTY FILE**

**EXAMINATION REPORT OF THE  
FANDORA GOLD PROPERTY  
TOFINO AREA, VANCOUVER ISLAND**

**Consisting of:**

**NAT, NAT 1-NAT 3 Claims  
and Crown Grants 1901-1905**

**Alberni Mining Division**

**Latitude 49° 15'N  
Longitude 125° 41'W  
NTS 92F4E, 5E**


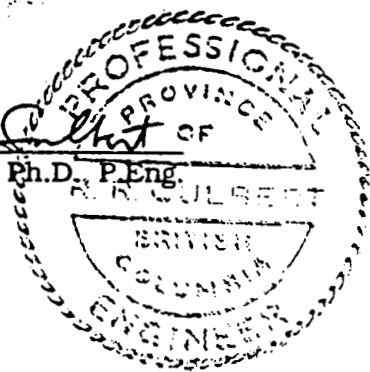
**Written for: Alice Lake Mines Ltd.  
Consultant: Equinox Operations Group  
Author: R.R. Culbert; Ph.D., P. Eng.  
Submitted: July, 1990**

1. CONCLUSIONS AND RECOMMENDATIONS

The Pandora Property is comprised of four one-unit claims and six crown granted claims or fractions located 20 km. northwest of Tofino, British Columbia. It is held by New Privateer Mines Ltd. and optioned to Alice Lake Mines Ltd. Intermittent development has taken place since the early 1940's on an auriferous gold vein and shear system, with adits developed on four levels. Some gold production was carried out in the early 1960's with both shipment of high grade ores and some milling. Government reports estimate a production of 1468 oz. of gold. Reserve estimates vary, largely depending on assumed extension of ore shoots. If the ore shoots are represented by vein intersections with the four existing tunnels (spaced 200 feet vertically apart), then the block defined by these tunnels and extending from the lowest level to 50 feet above the upper adit contains an estimated 80,000 tons at a cut grade of 0.40 oz/t gold (Seraphim, 1984).

While most of the workings are no longer accessible, detailed sampling has been carried out and the results are available. Exploitation of the deposit would most likely begin with driving of a new tunnel at a lower level in the vein. Prior to further underground development, this report recommends that a pre-feasibility study be undertaken. This would estimate the mining cost and dilution factor in extracting the unusual vein-shear combination, would do initial milling tests, and investigate the environmental aspects of production. The study would be charged with evaluating the Pandora deposit based on the considerable data-base available and would recommend the best method of exploitation if viable, or what must yet be accomplished to reach a production decision. It is estimated that this study and report will cost approximately \$87,000.

Contingent upon a positive report, a 150 meter drill program is recommended to test the continuity of the structure, both below (to the northwest) and for its southeast extension. In conjunction with the required road building, this is expected to cost \$144,000, bringing the total program estimation to \$231,000.

  
R.R. Culbert, Ph.D., P.Eng.  


## **2. INTRODUCTION**

This report has been written at the request of Mr. A. Caldwell, president of Alice Lake Mines Limited. It is based in part on a personal examination of the property and the accessible portions of the old workings on June 25, 1990. Check sampling was carried out where feasible. As most of the workings are no longer accessible, however, the evaluation has had to rely heavily on what information is available from older engineering reports, in particular, by A.M. Richmond (1947), C.M. Campbell (1950), and R.H. Seraphim (1981-1984).

## **3. PROPERTY DESCRIPTION**

### **3.1 Location and Access**

The property is located on the west flank of the Tranquille River valley, about 4 km. north of the river's mouth, and 20 km northeast of the port of Tofino. The portals lie at elevations between 1500 and 2100 feet (450 - 640 m). See figures 1 to 3.

There is an access road to the lower portal, which begins at Rankin Cove, 9 km to the south. This cove is reached by a 4 km. ferry ride across Tofino Inlet from the MacMillan Bloedel Ltd. docking facilities at Berreyman Point near the mouth of the Kennedy River. The ferry and its access road are maintained by MacMillan Bloedel, who have had a history of co-operating with mining programs in this area, and were jointly responsible for constructing the road to the mine site in conjunction with Devon Industries Ltd. in 1982. The last mile of this road is now passable only on foot due to a small slide.

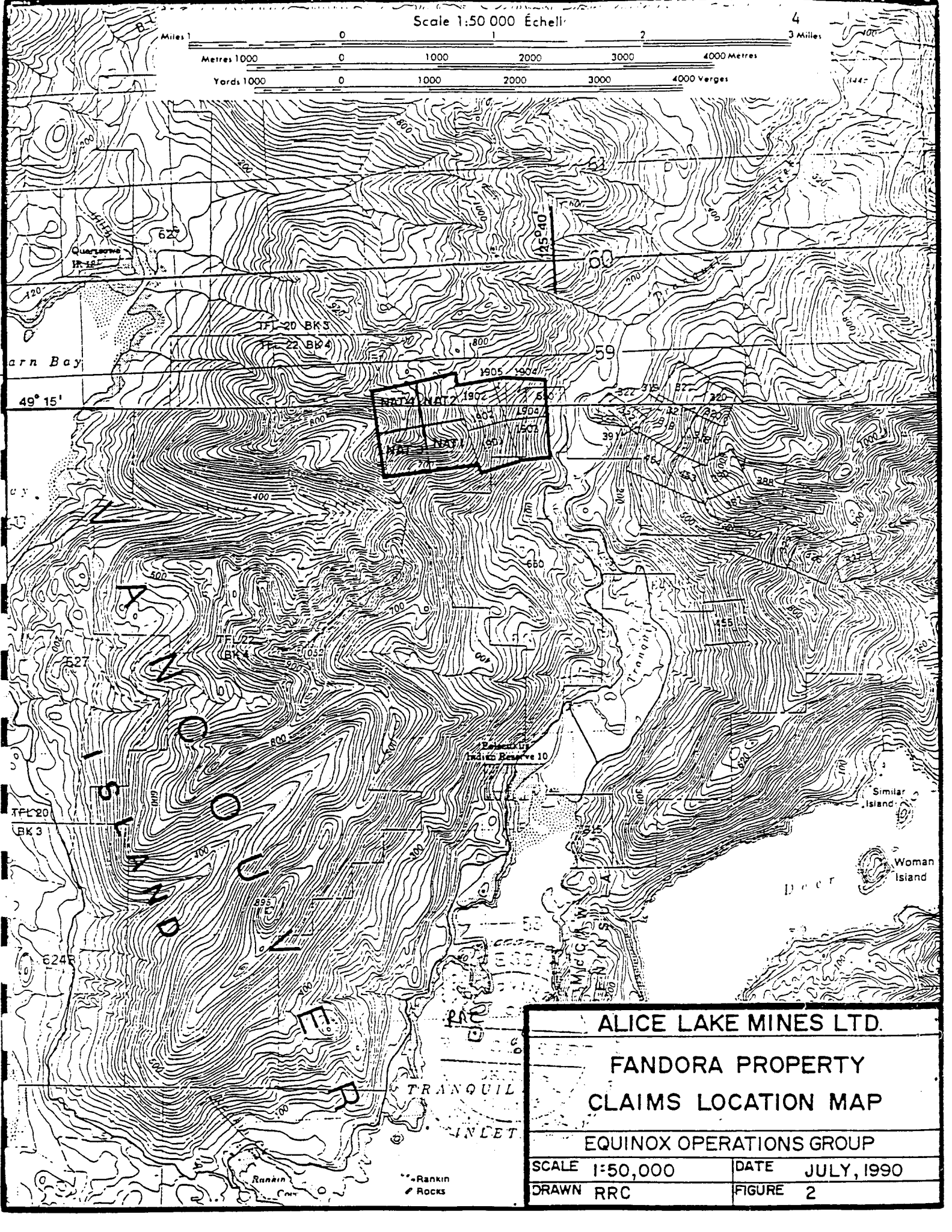
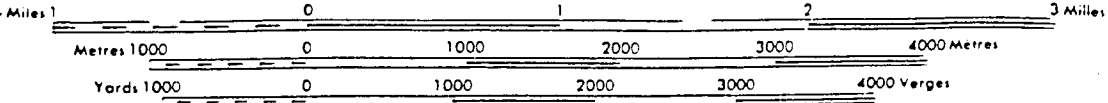
### **3.2 Physical Description**

The workings occur in a steep hillside marked by thick bush and ravines typical of the west coast rain forest. The vein runs almost directly up the hillside, trending slightly to the south as it climbs. The main adit with remains of an old mill and camp are at the 1500 ft level, with other portals at 1700 ft, 1900 ft and 2100 ft levels. Although reported to involve extensive underground workings, present access is very limited due to caving and surficial slides.

### **3.3 Legal Description**

There are four claims of one unit each as well as four crown granted claims and one crown granted fraction. All are held by New Privateer Mines Ltd., and under option to Alice Lake Mines Ltd.

Scale 1:50 000 Échelle



ALICE LAKE MINES LTD.	
FANDORA PROPERTY	
CLAIMS LOCATION MAP	
EQUINOX OPERATIONS GROUP	
SCALE 1:50,000	DATE JULY, 1990
DRAWN RRC	FIGURE 2

Rankin  
Rocks

### Claims List

Name	Number	Date Recorded	Paid until
NAT 1	265	Sept 13, 1979	Sept 1995
NAT 2	266	Sept 13, 1979	Sept 1995
NAT 3	267	Sept 13, 1979	Sept 1995
NAT 4	268	Sept 13, 1979	Sept 1995

### Crown Grants

Bell	L1901
Bell #1	L1902
Bell #2	L1903
Bell #3	L1904
EM#3	
Fraction	L1905

## 4. GEOLOGY

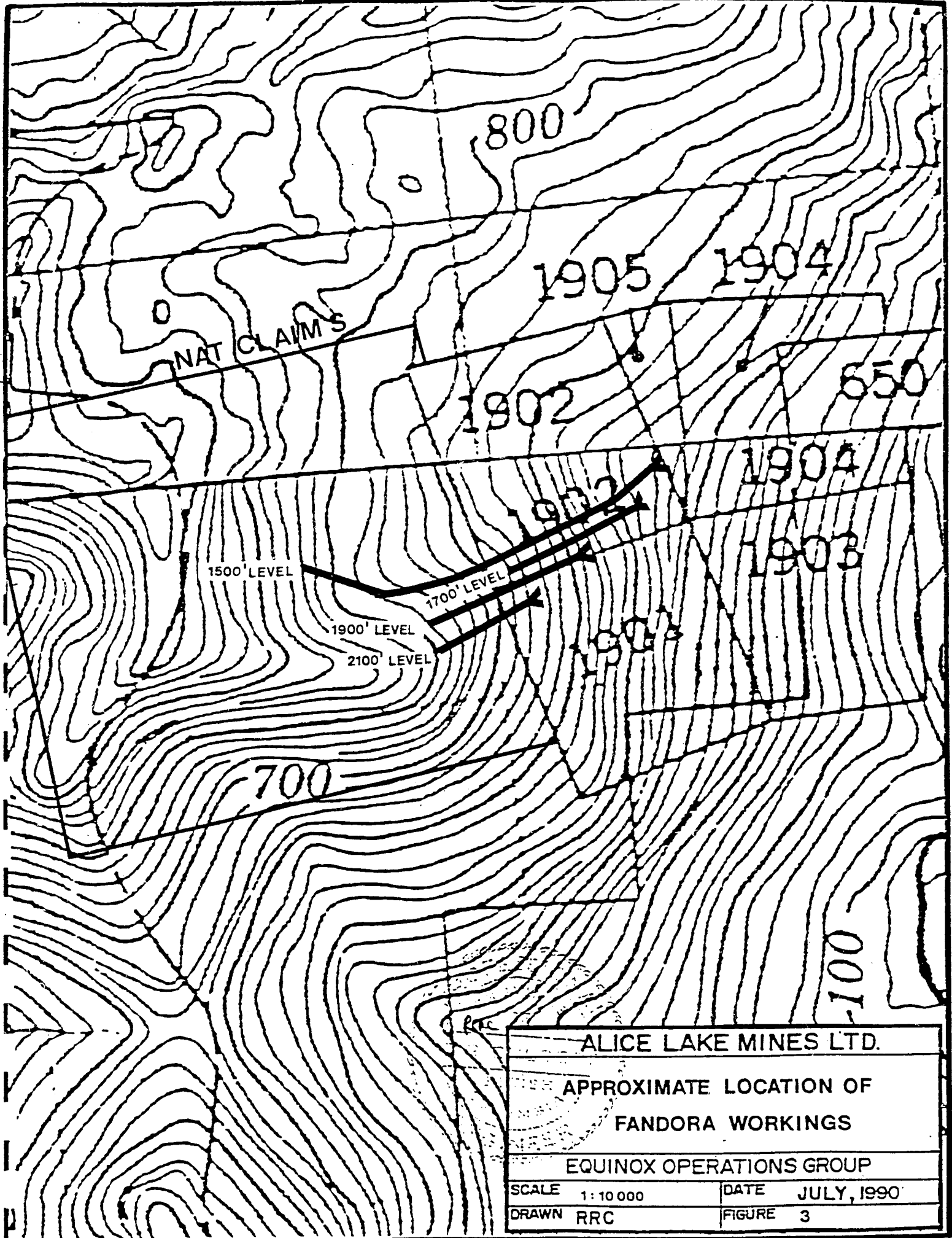
### 4.1 Regional Geology

The veins occur in a group of dominantly meta volcanic rocks which appear to have been basic to intermediate in composition. Incipient dioritization is widespread. These rocks have been correlated with the lower Paleozoic Sicker group and are intruded by a variety of plutonic rocks including a coarse gabbrodiorite and several andesite dykes in the vicinity of the veins. Most areas of Sicker are fault-bounded, and a short distance to the west of the property there are gneisses and migmatites of the West Coast Crystalline Complex.

### 4.2 Minesite Geology

The vein system trends approximately 255° and dips 65° -70° to the north. It is accompanied by a shear zone and more or less parallels an andesite dyke, but there is very little alteration of the country rock.

The vein itself is sheeted and contains varying amounts of a brown-weathering carbonate. Sulphide content is variable, and includes both fine sulphides on fractures or sheet boundaries, and coarser, crystalline varieties. Pyrite dominates, but arsenopyrite, chalcopyrite, sphalerite, and galena are also present. The vein varies erratically in texture, width, mineralogy, and precious metal grades, and in most places is actually comprised of two or three veins separated by sheared greenstone or andesite dykes. Despite this erratic character, the vein structure is surprisingly continuous, and the grades vary in such a manner to produce ore shoots of exploitable dimensions



NAT CLAIMS

800

1905

1904

1902

650

1904

1902

1903

1500' LEVEL

1700' LEVEL

1900' LEVEL

2100' LEVEL

1903

700

100

ALICE LAKE MINES LTD.	
APPROXIMATE LOCATION OF FANDORA WORKINGS	
EQUINOX OPERATIONS GROUP	
SCALE 1:10 000	DATE JULY, 1990
DRAWN RRC	FIGURE 3

## 5. HISTORY

The Pandora and some lesser veins in this vicinity were discovered in the late 1930's. The site was taken over in 1946 by Privateer Mines, who in conjunction with Canamac Mining Co., carried out most of the underground drifting from four adits. Between 1957 and 1964, a new phase of development was undertaken by a group organized by Moneta Porcupine, who connected the various levels with raises and put in a 35 t/day mill. Production was carried out by lessees, with government records as follows:

year	tons mined	oz. Au	average oz/t	oz. Ag	average oz/t
1960	53	15	0.28	2	.038
1962	40	388	9.7	85	2.1
1963	48	331	6.9	79	1.6
1964	936	734	0.79	103	0.11

Company records as reported by Seraphim (1981) are slightly different, referring to a combined bullion and concentrate production of 1327 oz of gold.

Little more was heard from this property despite rising gold prices until 1981, when a group of companies headed by Devon Industries Ltd. optioned the ground from New Privateer Mines, put in the present access road, and partly opened some of the levels.

## 6. REPORT ON VISIT

The main 1500 level adit is blocked approximately 300 ft from its portal by a partial collapse and ponded water. Further advance would be possible with a modest amount of work. This main level is reported to be of more or less 1300 ft length, bending to the north to follow the vein in its final section.

The upper levels are presently served by only a flagged route. They were originally reached by cable, and later by interior raises. The 1700 ft level adit is blocked by a surficial slide, and the tunnel at 1900 ft by a fairly major cave-in at only 40 ft. These are reported to extend 820 and 670 ft respectively, and the 2100 ft level adit to 380 ft.

A few customary check-samples were taken, although in view of the vast amount of accumulated data and the erratic nature of the gold values, this was little more than a formality. From float vein blocks in the 1700 ft area, another series of samples was taken of a variety of vein materials to determine if ore grade material could be recognized. Somewhat surprisingly, the two highest values (in excess of 1 oz/t, see Table 1) were from samples with minimal sulphides, one having a sheeted texture and the other only sulphides on fine parallel partings. Gold values correlate with arsenic and silver, although the silver levels are not of

economic importance. Gold assays and a 30 element ICP analysis are given in the appendix.

## 7. RESERVE FIGURES

Reserve estimates were originally made by A.M. Richmond, P.Eng. in 1947 for Privateer Mines Ltd. and modified by C.M. Campbell in 1950. These were based on a thorough sampling of the vein systems along the tunnels, and Campbell's map is reproduced as Figure 4. In forming their estimates, Richmond stated that he used the width at which he felt each segment of the vein would fall free in mining in view of the shear zones, instead of employing a set mining width. He defines "Proven ore" as within 50 ft of the adits and "Probable ore" as the next 25 ft outward. In modern nomenclature these would be described as drift indicated. Campbell's estimate for 12 ore shoots is a combined "proven and probable" reserve of 66,995 tons of 0.42 oz/t Au, cut grade. Taking the entire vein block it is estimated that 200,000 tons of 0.28 oz/t ore is available.

The most recent reserve evaluation has been by R.H. Seraphim (1984), who did some further sampling and deducted the material mined between 1960 and 1964 from previous compilations. He estimated that for the remaining ore shoots (Figure 5) taken to 50 ft above and below the adits, there was about 42,000 t of 0.40 oz/t cut grade. If one were to assume continuity between levels, this would be raised to 80,000 tons. The alternate possibility of producing some 9,000 tons of highgrade shipping ore at an uncut grade of 2.3 oz/t is also mentioned.

## 8. DISCUSSION AND COST ESTIMATES

As aptly pointed out by Mr. Seraphim, it would be more advantageous to develop this mine by way of new tunnel at a lower level than try to rehabilitate the old workings. There is already a great deal of data available on the deposit, however, and a new tunnel should be viewed more as an exploitation stage than a means of further exploration. The author therefore recommends that a feasibility study be carried out prior to further underground development. This would entail the following work:

1. The access road should be reopened, and the tunnels improved and extended to the extent feasible by a brief program.
 

Estimated Cost:	\$12,000
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2. A consultant thoroughly experienced in the practical side of vein mining should be shown the available workings to estimate the likely mining costs and dilutions as well as identify potential problems. The forementioned possibility of extracting a high grade shipping ore should be considered in the light of modern mining practices.
 

Estimated Cost:	4,000
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3. Bulk samples should be hand-collected as well as possible under the circumstances, and these subjected to initial milling tests and acid generation and arsenic mobility studies.
 

Sample collections and shipment	8,000
Sample treatment	15,000



4. Baseline measurements of mine drainage water qualities and their downstream effect on stream chemistry should be collected, and such data as is available on climate, logging plans etc. compiled. With this information and the laboratory studies, the environmental authorities should be consulted to estimate what type of requirements they are likely to impose.

Estimated Cost: 8,000

5. A computer estimation of ore reserves and grades should be carried out from the copious data on file.

Estimated Cost: 9,000

6. Pulling all this data together, a feasibility study should evaluate the economics of the deposit and make recommendations.

Estimated Cost: 50,000

The total estimated cost of this study is hence:

76,000

Plus Overhead and contingencies

11,000

\$87,000

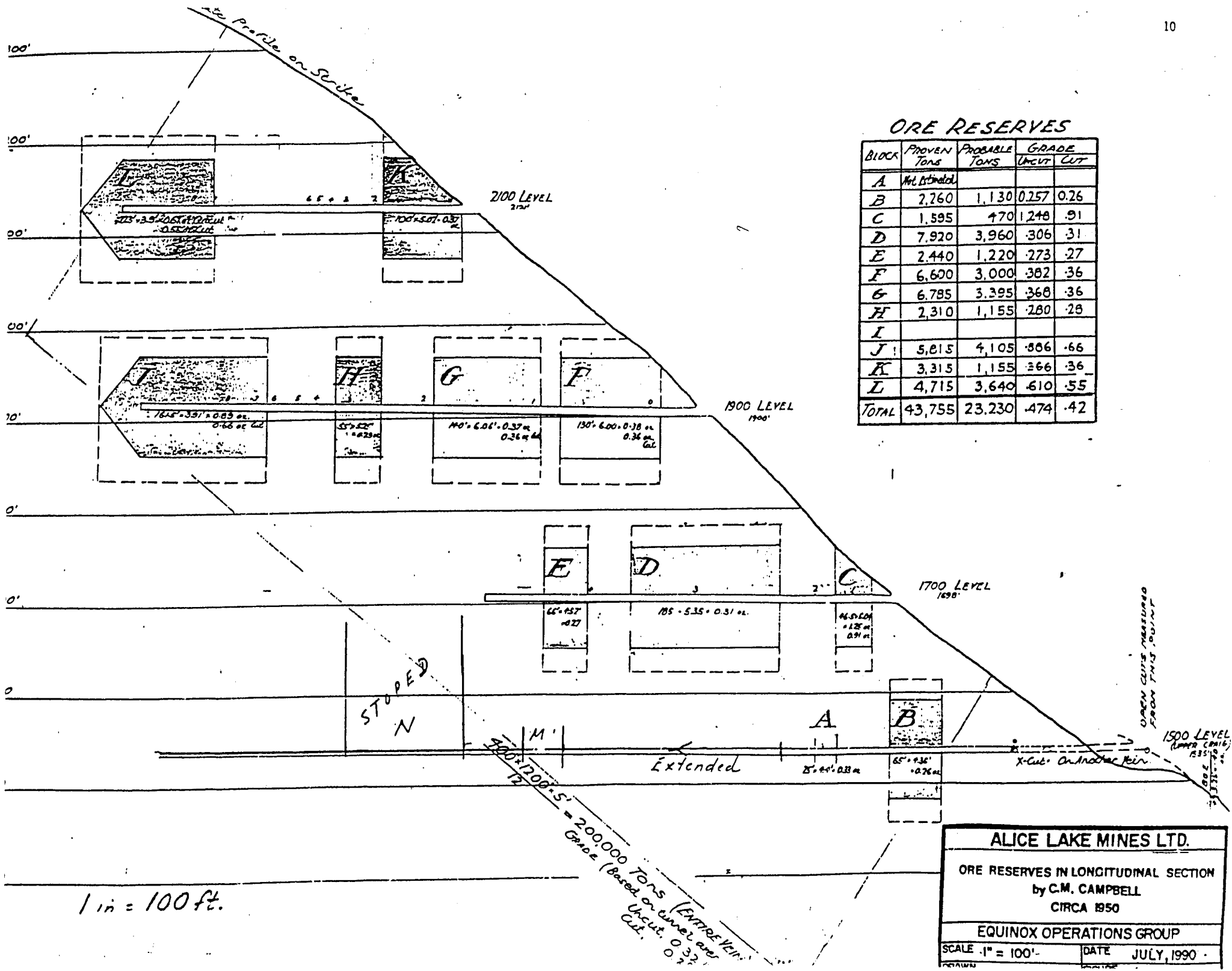
Contingent upon a positive outcome of the prefeasibility work, a drill program is recommended to determine the continuity and location of the structure beyond the area presently revealed by the tunnels. Because of the friability of the ore zone and likely presence of free gold, it will be necessary to carefully monitor this work, and the information regarding the tenor of the vein will be of limited use in increasing reserves.

The vein trace below the base portal trends northward due to interaction with the topography and will be moderately easy to test with a road extension. The southeastern extension of the structure will have to be reached by a new access from the logging road crossing the pass south of the Nat Claims. Both roads are likely to require blasting, and should be planned in conjunction with MacMillan Bloedell operations.

Estimated cost of road building	40,000
Estimated drilling program costs	
500 meters at \$150/m all inclusive	75,000
Engineering and Report	<u>10,000</u>
	\$125,000

Plus 15% Overhead and Contingencies - (approx.)	<u>19,000</u>
	\$144,000

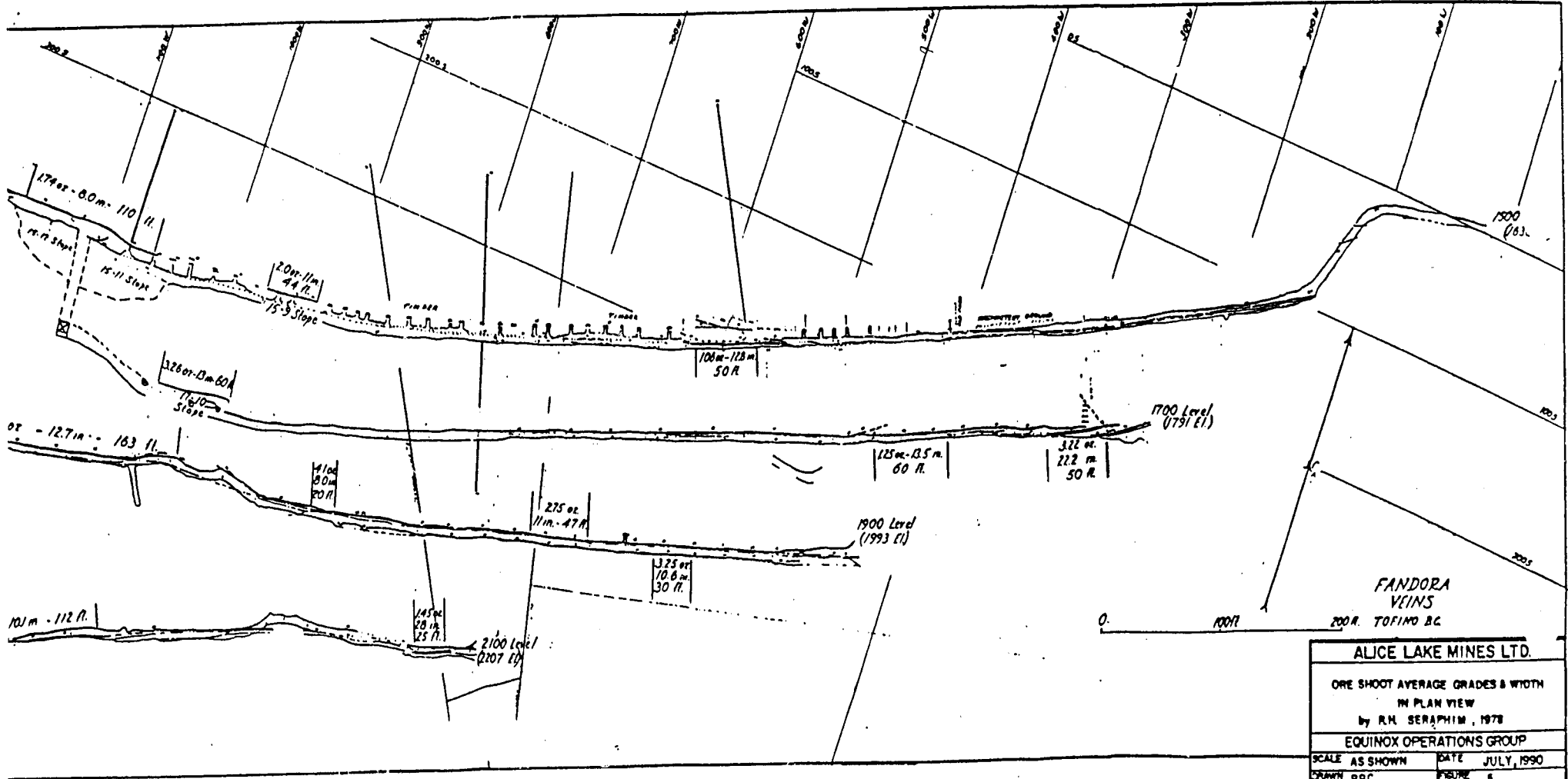
TOTAL COST ESTIMATE	<u>\$231,000</u>
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### ORE RESERVES

BLOCK	PROVEN TONS	PROBABLE TONS	GRADE	
			UNCUT	CUT
A	Not Estimated			
B	2,260	1,130	0.257	0.26
C	1,595	470	0.248	0.21
D	7,920	3,960	0.306	0.31
E	2,440	1,220	0.273	0.27
F	6,600	3,000	0.302	0.36
G	6,785	3,395	0.368	0.36
H	2,310	1,155	0.280	0.28
I				
J	5,815	4,105	0.306	0.66
K	3,315	1,155	0.266	0.36
L	4,715	3,640	0.610	0.55
TOTAL	43,755	23,230	0.474	0.42

<b>ALICE LAKE MINES LTD.</b>	
ORE RESERVES IN LONGITUDINAL SECTION by C.M. CAMPBELL CIRCA 1950	
EQUINOX OPERATIONS GROUP	
SCALE 1" = 100'	DATE JULY, 1990



ALICE LAKE MINES LTD.	
ORE SHOOT AVERAGE GRADES & WIDTH IN PLAN VIEW by R.M. SERAPHIM, 1978	
EQUINOX OPERATIONS GROUP	
SCALE AS SHOWN	DATE JULY, 1990
DRAWN RRC	FIGURE 8

**TABLE 1**  
**SUMMARY OF SAMPLE RESULTS**

SAMPLE	LOCATION AND DESCRIPTION	Au oz/t	Ag ppm	As ppm
FAN 1	Across 15 cm vein at partial cave- in, 300' into 1500 level tunnel	0.575	1.1	4001
FAN 1A	Across 45 cm shear on footwall	0.107	1.1	3843
FAN 2	Across 60 cm vein and gauge at stope edge, 260' into 1500 level	0.907	4.8	4812
FAN 3	Across 30 cm sheared vein at 170 ft into 1500 ft level	0.148	0.9	1170
FAN 5	Across 30 cm at cavein, 40 ft into 1900 ft level	0.096	0.6	1183
FAN 6	Across 26 cm, 20 ft in 1900 ft level	0.267	1.7	1025
FAN 6A	Taken across adjacent 75 cm	0.008	0.2	316
FAN 7F	Calcareous vein material	0.001	0.2	24
FAN 8	Exposed vein above 1700 ft level (1 ft exposed width)	0.099*	4.1	2704
FAN 9	Float below 1700 ft level - Quartz with fine sulphide bands only	1.671	3.6	584
FAN 9A	Pyritic quartz, fine grained pyrite	0.054	0.7	2738
FAN 9B	Course pyrite and carbonate	0.341	1.2	13065
FAN 10	Quartz blocks - highly sheeted, minor sulphides	3.497	15.4	22240
FAN 10A	Cross veined with pyritic fractures	0.114	0.5	13474
FAN 11	Banding, and brecciation with calcite	0.008	0.2	308

\* .81 oz/t by ICP