

PLACER ASSESSMENT REPORT X

DOCUMENT NO: 120144

MAP NO.: PROSPECTUS

MINING DISTRICT: Dawson

116 B/3c

CONFIDENTIAL X

TYPE OF WORK: Seismic testing

OPEN FILE

REPORT FILED UNDER: Betty Purington

DATE PERFORMED: July 9, 1991

DATE FILED: December 13, 1991

LOCATION: LAT.: 64°02'N

AREA: Bonaza Creek Area

LONG.: 139°23'W

VALUE \$: 1,000.00

CLAIM NAME & NO.: Gold Bluf Placer Claim #P7255

WORK DONE BY: Ted Sandor

WORK DONE FOR: Betty Purington

DATE TO GOOD STANDING:

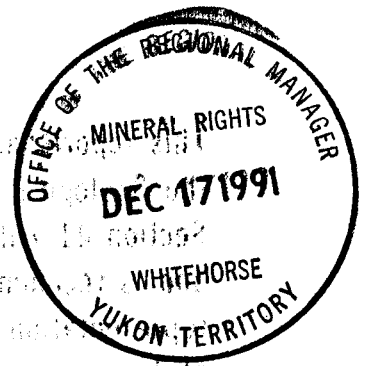
REMARKS: 116 - B Bonaza Creek Area

A reconnaissance seismic reflection survey consisting of four test shots was conducted over the claim. The author interpreted the results as showing bedrock occurring at a depth of between 20 and 35 ft..

# SEISMIC TESTING REPORT

Gold Bluf Claim  
P7255

NTS 116B-3



Prepared for

Owner: Betty Purington  
Gen Del  
Dawson City, Yukon  
YOB 1GO

and

Fieldsman: Scott Cone  
Box 964  
Dawson City, Yukon  
YOB 1GO

~~~~~

Prepared by  
Ted Sandor  
RR1 Site 20 Comp 121  
Whitehorse, Yukon  
Y1A 4Z6

(Phone/Fax 667-6193 [403])

July 9, 1991



120144

This report has been examined by  
the Geological Evaluation Unit under  
Section 41 Yukon Placer Mining Act  
and is recommended as allowable  
representation work in the amount  
of \$1,000.00.....

*Robert Ockluk*

for. Chief Geologist, Exploration and  
Geological Services Division, Northern  
Affairs Program for Commissioner of  
Yukon Territory.

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# ASSESSMENT REPORT

on July 9,1991

Seismic Survey

Placer Gold Bluf Claim

P7255

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## 1. INTRODUCTION

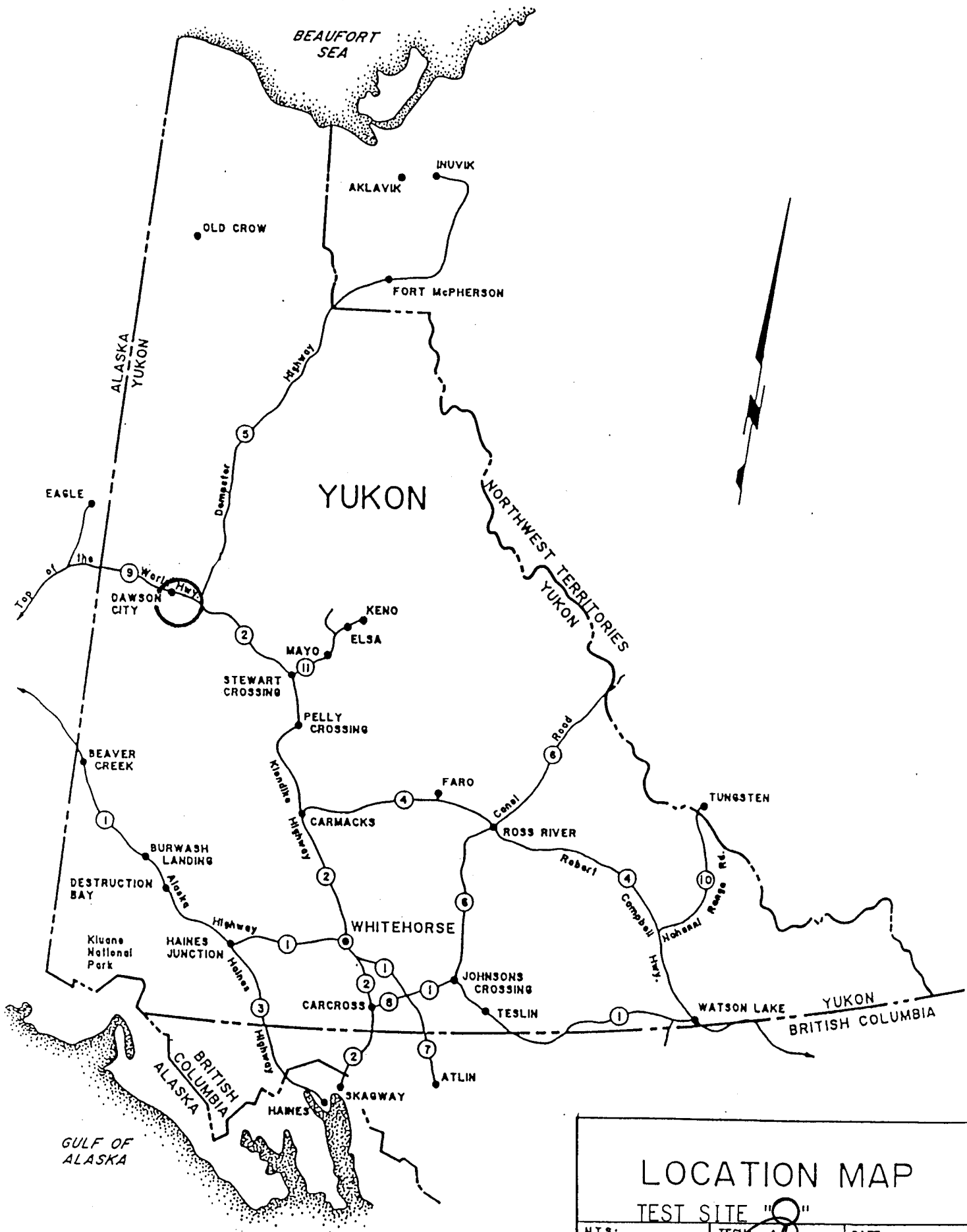
On July 9, 1991 a seismic survey was conducted on Placer Gold Bluf Claim P7255 for the owner Betty Purington by fieldsman Scott Cone.

Scott Cone using a compass and hip chain, located four (4) test sites on P7255.

Test locations were marked with flagging and labelled (See Fig.C)

Shots are spaced 200 feet from each other.

The seismic consultant, Ted Sandor, processed field recordings and interpreted the data received.



# LOCATION MAP

TEST SITE "O"

|                           |                             |                           |
|---------------------------|-----------------------------|---------------------------|
| N.T.S.:<br><b>116 B/3</b> | TECH:<br><i>(Signature)</i> | DATE:<br><b>JULY 9/91</b> |
| SCALE:<br>1"=12.5ml.      | DRAFTING:<br>HANDESIGN      | FIGURE:<br><b>A</b>       |

# DAWSON YUKON TERRITORY

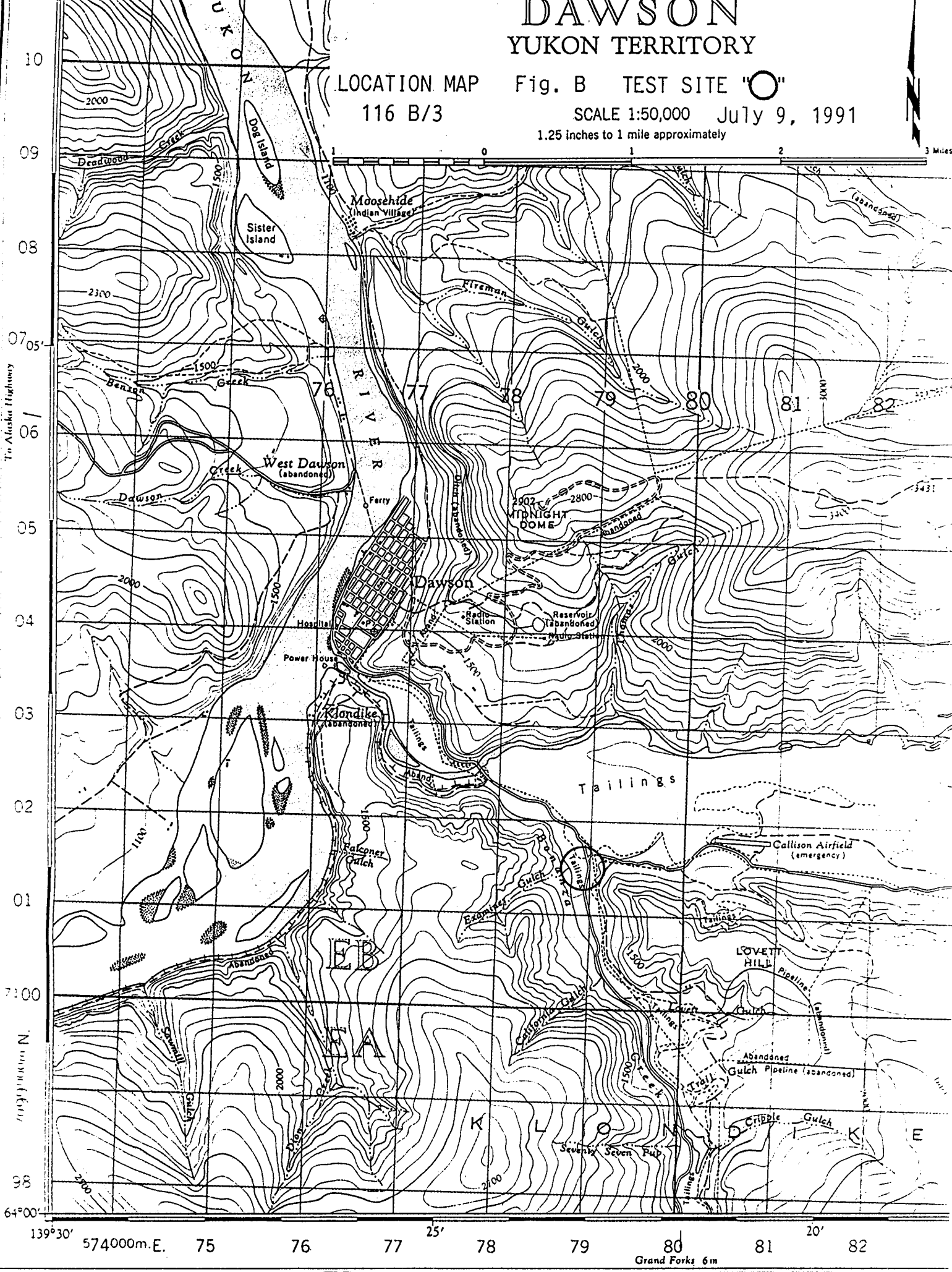
LOCATION MAP

Fig. B TEST SITE "O"

116 B/3

SCALE 1:50,000 July 9, 1991

1.25 inches to 1 mile approximately



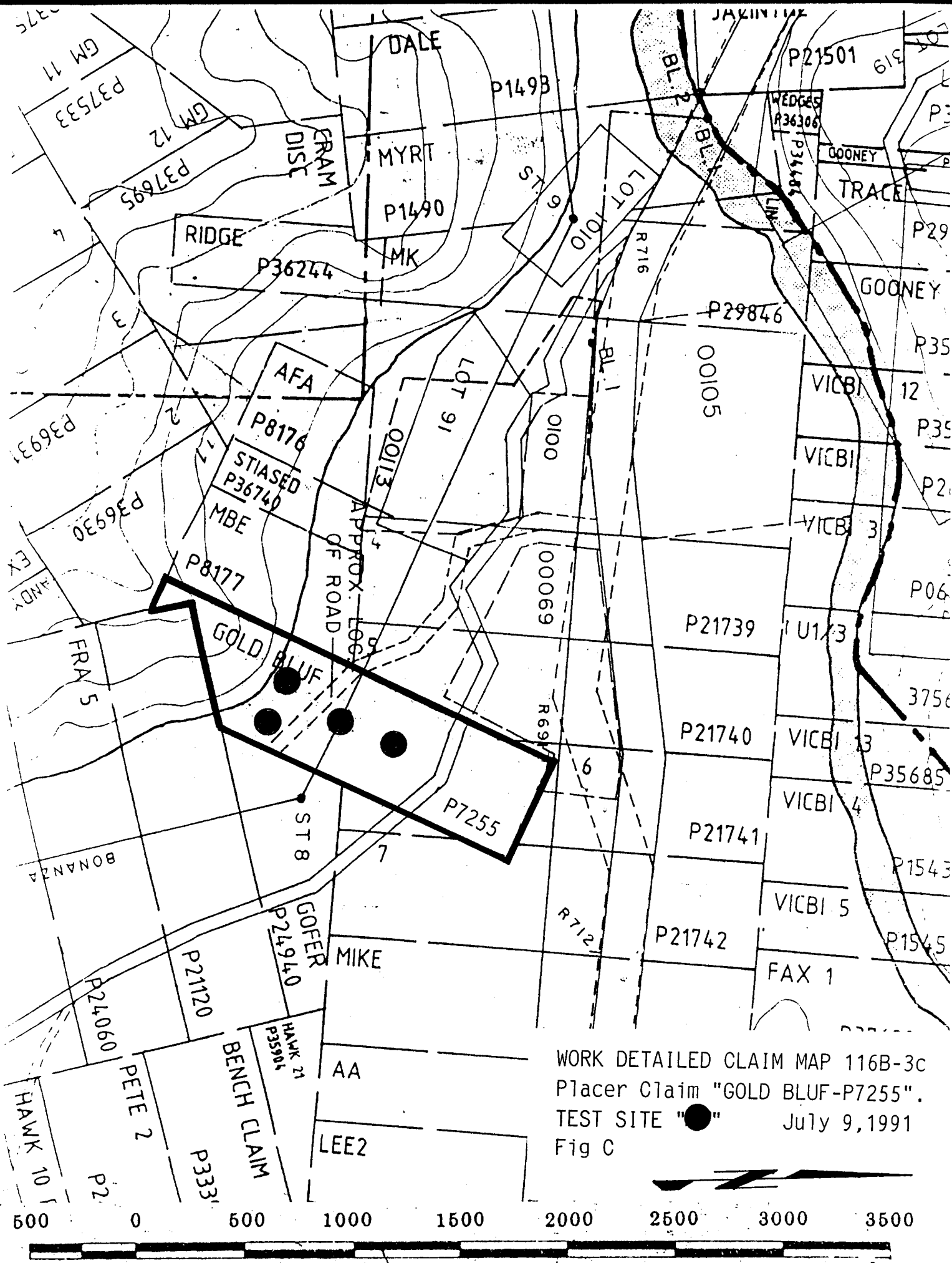
To Alaska Highway

Longitude N.

64°00'

139°30' 574000m. E. 75 76 77 25' 78 79 80 81 20' 82

Grand Forks 6m



WORK DETAILED CLAIM MAP 116B-3C  
 Placer Claim "GOLD BLUF-P7255".  
 TEST SITE "●" July 9, 1991  
 Fig C



500 0 500 1000 1500 2000 2500 3000 3500

FEET

FEET

## 2. SURVEY

### 2.1 Location and Access

The Placer Gold Bluf Claim P7255 is 2km. southeast of Dawson City on Bonanza Creek.

Access to the test site was by 4x4 pickup on road. Testing was done on foot (See Access Map Fig. B)

### 2.2 Claim Information

| <u>Name</u> | <u>Placer Claim Number</u> | <u>Owner</u>     |
|-------------|----------------------------|------------------|
| Gold Bluf   | P7255                      | Betty Purlington |

### **3. PERSONNEL**

Scott Cone surveyed, marked, measured, expedited and carried out the field work.

Ted Sandor supervised the quality, directed the data processing and prepared the report.

#### 4. GEOLOGY

Unconsolidated glacial and alluvial deposits. No visible outcrop. The Klondike River does have a history of being gold bearing. The river in the past has been extensively worked mostly by dredges. There are still good prospects in many places in this area. Further investigation could be worthwhile.

## 5. INSTRUMENTATION

Directional Electret Microphone  
800 OHMS 30 - 18,000 Hz Response

Panasonic Magnetic Tape Recorder Model #RQ-L335  
Frequency Range: 180 - 7,000 Hz  
Tape Speed: 4.8 cm/s (1-7/8 I.P.S.)  
Track System: 2-track monaural, recording and playback  
16 ga. shotgun, 1-1/8 oz. shot, #7-1/2 shot

Software:

Sound Filler St. Visual Sample Editor  
Requires TOS in ROM

This manual and the software described herein were copyrighted in 1987  
by Drumware Inc., Los Angeles, California, with all rights reserved.

Akai Professional S700 Digital Sampler  
12-Bit Sampling

Sampling Frequency: 4KHZ - 40 KHZ  
Sampling Time: 8 Sec. - 08 Sec.

Frequency Response: 25 Hz - 16 KHz  
Atari 520 St. Computer

Processor: MC6800, 32 Bit Internal,  
16-Bit External Architecture  
8 MHz clock frequency.

Memory: 524,288 Bytes of RAM; 196,608 Bytes of ROM

Keyboard: 94-key Intelligent keyboard, using 6301 Microprocessor

Storage Medium: 3-1/2 inch, Microfloppy disk;  
Single-Side, Double Density;  
135 Tracks per inch

Data Transfer

Speed: 250 Kilobits per second

Atari Sc. 1224 RGB Colour Monitor

Seikosha SP-1600 Dot Matrix Printer

Printing Method: Impact Dot Matrix Bidirectional Logic  
Seeking Printing

Print Head: 9 Pins

## 6. THEORY

This report is intended as a guide to the application of seismic refraction and reflection techniques to shallow, subsurface exploration of engineering sites. Many civil engineers and geologists have some acquaintance with this basic geophysical tool, but few apply it frequently. The primary purpose of the report is to provide the reader with a working knowledge of the method, with a convenient reference, and further, with a basis to judge the applicability of the method and the results to his particular exploration problem.

Solid state electronics have improved the portability of engineering-type refraction and reflection instruments, but they operate fundamentally in the same way they did 50 years ago. The basic field practices and methods of interpreting the data have not changed with time, although specialized interpretational techniques have been proposed and developed for some difficult cases.

The conduct of refraction and reflection surveys and the interpretation of the data are well-established and reasonably straight forward, although they are not invariant. The user can change the field layout of his equipment and apply judgement and imagination in his handling of the raw data. In common with other indirect methods of subsurface exploration, there are no rigid inflexible approaches to making sense of the data, nor are there any handbooks that infallibly direct the engineer, geologist or geophysicist to the correct answer. The general case will require thought and care: ambiguities and uncertainties are not uncommon. Some foreknowledge of the site conditions and an understanding of what is geologically plausible will always assist in resolving the raw data into meaningful information.

Figure 1 shows a refraction survey. This method could be quite costly and require complicated data processing should multiple layers of soil and gravels be encountered.

## 6. THEORY CONTINUED

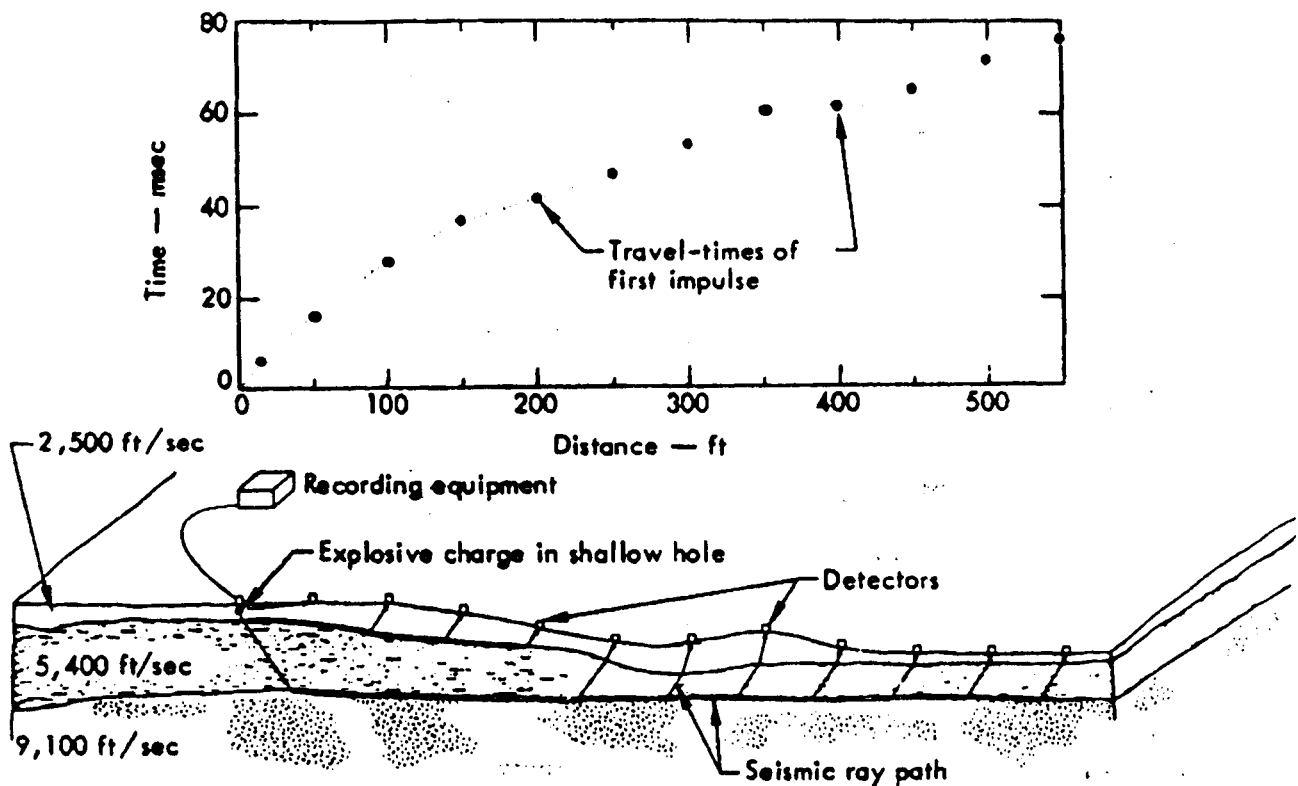


Figure 1. Schematic of Seismic Refraction Survey

There is a definite relation between reflected and refracted energy which could be observed in Figure 2B. Using this principle and Tables A1 and A2 calculation is simplified, for the sound in a reflected survey only has to go down, turn around at point of geophone or microphone without going along the higher velocity layers and then back up. Seismic waves will bounce off of most surface with a lot of amplitude but not necessarily with a wide range of frequencies. The reflected seismic waves returning to the geophone with the strongest amplitude and frequencies should come from the layer with the highest velocity change which, in most cases, should be bedrock (solid rock) or from a gravel layer directly beneath an organic surface cover.

## 6. THEORY CONTINUED

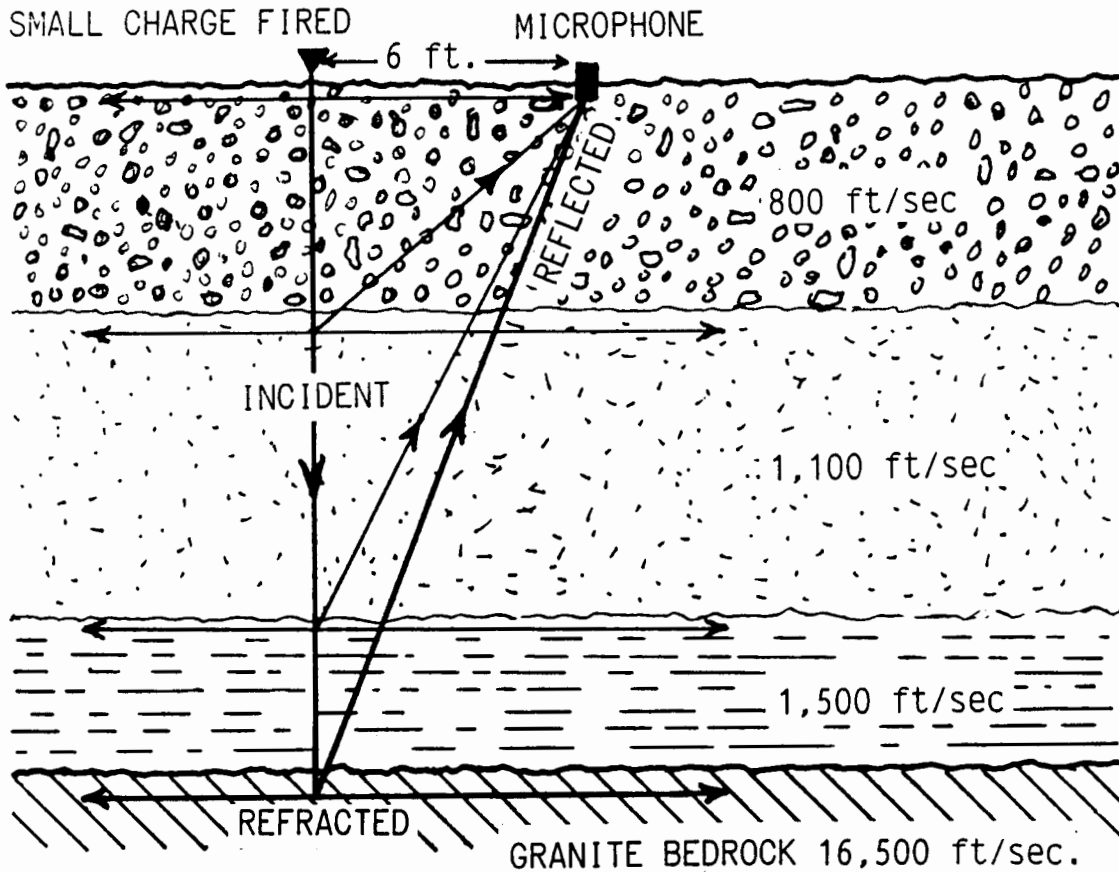


Figure 2. Schematic of Seismic Reflection Survey

The thicker line representing the reflected seismic wave from the bedrock to the microphone should be the wave with the highest amplitudes and the widest range of frequencies in Figure 2. The six foot distance from microphone to charge is to prevent damage to the delicate recording equipment. The error of this footage can usually be made up by averaging the total of the velocities a little higher to simplify interpretation. In this case "1,200 ft/sec." will be close enough.

6. THEORY CONTINUED

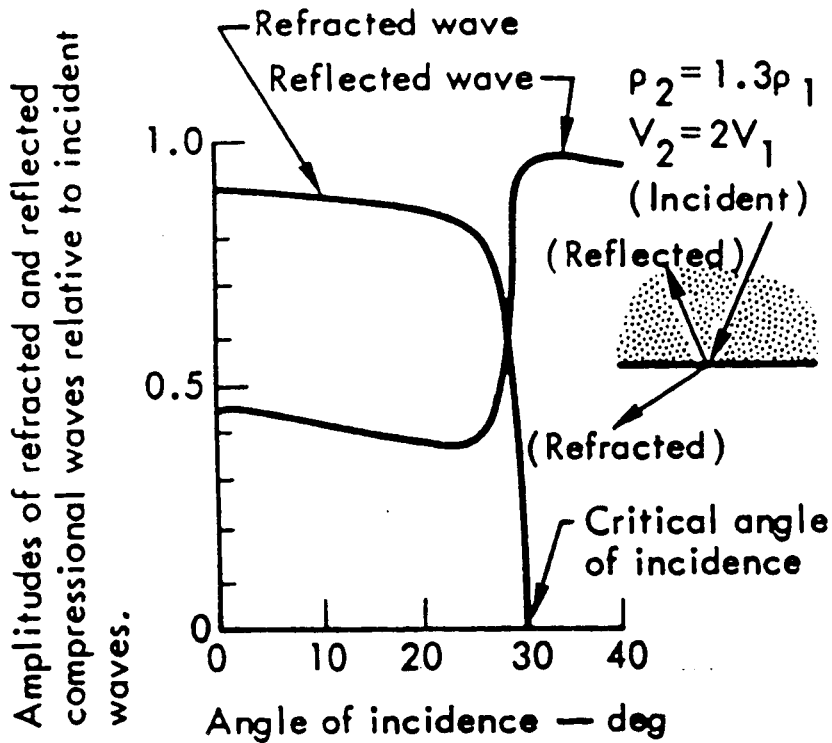


Fig. 2b. Amplitudes of reflected and refracted compressional waves relative to incident waves as a function of angle of incidence.

Figure 2b Amplitudes of Reflected/  
Refracted Compressional Waves

It may seem anomalous in Figure 2b that the sum of the amplitudes of the reflected and refracted pulses is greater than that of the incident wave (i.e., greater than 1.0). However, the energy of a pulse is proportional to the square of its amplitude, and the sum of the energies of the reflected and refracted waves is equal to the energy of the incident wave.

Table A1. Speed of propagation of seismic waves in subsurface materials.

| MATERIALS                                                | FEET PER SECOND  | MATERIALS                                                                                                                                                                                                                     | FEET PER SECOND  |
|----------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>TOP SOILS:</b>                                        |                  | <b>GRANITE:</b>                                                                                                                                                                                                               |                  |
| LIGHT AND DRY                                            | 600 TO 900       | SIERRA NEVADA RANGE, CALIFORNIA (IN ROAD CUTS)                                                                                                                                                                                |                  |
| MOIST, LOAMY OR SILTY CLAYEY                             | 1,000 TO 1,300   | FRIABLE AND HIGHLY DECOMPOSED                                                                                                                                                                                                 | 1,540            |
| RED CLAY IN COLORADO (A)                                 | 1,300 TO 2,000   | BADLY FRACTURED AND PARTLY DECOMPOSED                                                                                                                                                                                         | 2,200            |
| SEMI-CONSOLIDATED SANDY CLAY (B)                         | 1,250 TO 2,150   | SOFTENED AND PARTLY DECOMPOSED BUT SLIGHTLY SEAMED                                                                                                                                                                            | 10,500           |
| WET LOAM (B)                                             | 2,500            | SOLID AND MONOLITHIC 70 FEET DEEP                                                                                                                                                                                             | 18,500           |
| CLAY, DENSE AND WET - DEPENDING ON DEPTH                 | 3,000 TO 5,900   | NEW HAMPSHIRE (C) (COMPARISON OF VELOCITIES WITH DRILLING LOGS)                                                                                                                                                               |                  |
| RUBBLE, OR GRAVEL (B)                                    | 1,970 TO 2,600   | BADLY BROKEN AND WEATHERED: FREQUENTLY ONLY CHIPS AND FRAGMENTS RECOVERED. SEGMENTS OF CORE LONGER, BUT WEATHERING HAD PENETRATED ABOUT 1/4 INCH ON EACH SIDE OF THE JOINT PLANES ON WHICH A FILM OF RESIDUAL CLAY HAD FORMED | 3,000 TO 8,000   |
| CEMENTED SAND (B)                                        | 2,800 TO 3,200   | JOINT PLANES SHOW BUT LITTLE SIGN OF WEATHERING, EVEN THOUGH THEY ARE OPEN                                                                                                                                                    | 10,000 TO 13,000 |
| SAND CLAY (B)                                            | 3,200 TO 3,800   | ENTIRELY UNWEATHERED AND UNSEAMED                                                                                                                                                                                             | 16,000 TO 20,000 |
| CEMENTED SAND CLAY (B)                                   | 3,800 TO 4,200   | GRANODIORITE (B)                                                                                                                                                                                                              | 15,000           |
| WATER SATURATED SAND (B)                                 | 4,600            | BASALT-CANAL ZONE-WEATHERED AND FRACTURED                                                                                                                                                                                     | 9,000 TO 14,000  |
| SAND (B)                                                 | 4,600 TO 8,400   | LIMESTONE, DOLOMITE, METAMORPHIC ROCKS, MASSIVE ROCKS (B)                                                                                                                                                                     | 16,400 TO 20,200 |
| CLAY, CLAYEY SANDSTONE (B)                               | 5,900            | DIABASE, IN BED OF BROAD RIVER, SOUTH CAROLINA                                                                                                                                                                                | 19,700           |
| GLACIAL TILL UPPER SUSQUEHANNA (C)                       | 5,600 TO 7,400   | GREENSTONE, TIGHT SEAMED-CALIFORNIA (A)                                                                                                                                                                                       | 16,100           |
| GLACIAL MORaine DEPOSIT, DRY-CALIFORNIA (A)              | 2,500 TO 5,000   | GREENSTONE, SLIGHTLY SEAMED-CALIFORNIA                                                                                                                                                                                        | 13,300           |
| GLACIAL MORaine DEPOSIT, SATURATED-CALIFORNIA            | 5,000 TO 7,000   |                                                                                                                                                                                                                               |                  |
| CEMENTED LAVA AGGLOMERATE, CALIFORNIA (A)                | 5,000 TO 6,000   |                                                                                                                                                                                                                               |                  |
| LOOSE ROCK-TALUS                                         | 1,250 TO 2,500   |                                                                                                                                                                                                                               |                  |
| WEATHERED AND FRACTURED ROCK                             | 1,500 TO 10,000  |                                                                                                                                                                                                                               |                  |
| <b>SHALES:</b>                                           |                  |                                                                                                                                                                                                                               |                  |
| OLENTANGY RIVER, OHIO                                    | 9,000 TO 11,000  |                                                                                                                                                                                                                               |                  |
| UPPER SUSQUEHANNA (C)                                    | 10,200 TO 12,800 |                                                                                                                                                                                                                               |                  |
| PANAMA CANAL ZONE                                        | 7,000 TO 8,000   |                                                                                                                                                                                                                               |                  |
| MANCOS, COLORADO (A)                                     | 2,600 TO 2,900   |                                                                                                                                                                                                                               |                  |
| ROMNEY SHALE-SHENNANDOAH RIVER - WEATHERED               | 4,000 TO 6,500   |                                                                                                                                                                                                                               |                  |
| ROMNEY SHALE-SHENNANDOAH RIVER - GOOD                    | 12,000           |                                                                                                                                                                                                                               |                  |
| JOHN MARSHALL DAM SITE                                   | 2,900 TO 4,250   |                                                                                                                                                                                                                               |                  |
| PHYLITE-YORK, PA. (D)                                    | 10,000 TO 11,000 |                                                                                                                                                                                                                               |                  |
| SANDSTONE: (B)                                           | 7,200 TO 7,900   |                                                                                                                                                                                                                               |                  |
| DEVONIAN-UPPER SUSQUEHANNA (C)                           | 14,000           |                                                                                                                                                                                                                               |                  |
| CANAL ZONE, PACIFIC END                                  | 7,000 TO 9,000   |                                                                                                                                                                                                                               |                  |
| COLORADO, DENSE, HARD, AND CONTINUOUS WITH FEW SEAMS (A) | 7,250            |                                                                                                                                                                                                                               |                  |
| COLORADO, CONTAINING WEATHERED SEAMS AND SOFT AREAS. (A) | 4,725            |                                                                                                                                                                                                                               |                  |
| SMOKY HILL RIVER KANSAS SANDSTONE CONGLOMERATE (B)       | 6,000 TO 7,500   |                                                                                                                                                                                                                               |                  |
|                                                          | 8,000            |                                                                                                                                                                                                                               |                  |
| <b>CHALK:</b>                                            |                  |                                                                                                                                                                                                                               |                  |
| FORT RANDALL DAMSITE - ABOVE WATER TABLE                 | 6,300 TO 7,000   |                                                                                                                                                                                                                               |                  |
| FORT RANDALL DAMSITE - BELOW WATER TABLE                 | 8,000            |                                                                                                                                                                                                                               |                  |
|                                                          |                  | <b>NOTE:</b>                                                                                                                                                                                                                  |                  |
|                                                          |                  | (A) Reported by G. H. Williams, U. S. Bureau of Public Roads                                                                                                                                                                  |                  |
|                                                          |                  | (B) From Report of Imperial Geophysical Experimental Survey in Australia                                                                                                                                                      |                  |
|                                                          |                  | (C) Reported by A. E. Wood, Corps of Engineers                                                                                                                                                                                |                  |
|                                                          |                  | (D) Reported by L. T. Abele, Corps of Engineers                                                                                                                                                                               |                  |

Table A2. Approximate range of velocities of longitudinal waves for representative materials found in the earth's crust.<sup>a</sup>

| <i>A. Classification According to Material</i>          |                  |                |       |
|---------------------------------------------------------|------------------|----------------|-------|
| <i>Material</i>                                         | <i>Velocity*</i> |                |       |
|                                                         | <i>Ft./Sec.</i>  | <i>M./Sec.</i> |       |
| Weathered surface material .....                        | 1,000—2,000      | 305—           | 610   |
| Gravel, rubble, or sand (dry) .....                     | 1,500—3,000      | 468—           | 915   |
| Sand (wet) .....                                        | 2,000—6,000      | 610—           | 1,830 |
| Clay .....                                              | 3,000—9,000      | 915—           | 2,750 |
| Water (depending on temperature and salt content) ..... | 4,700—5,500      | 1,430—         | 1,680 |
| Sea water .....                                         | 4,800—5,000      | 1,460—         | 1,530 |
| Sandstone .....                                         | 6,000—13,000     | 1,830—         | 3,970 |
| Shale .....                                             | 9,000—14,000     | 2,750—         | 4,270 |
| Chalk .....                                             | 6,000—13,000     | 1,830—         | 3,970 |
| Limestone .....                                         | 7,000—20,000     | 2,140—         | 6,100 |
| Salt .....                                              | 14,000—17,000    | 4,270—         | 5,190 |
| Granite .....                                           | 15,000—19,000    | 4,580—         | 5,800 |
| Metamorphic rocks .....                                 | 10,000—23,000    | 3,050—         | 7,020 |
| Ice .....                                               | 12,050           |                |       |

| <i>B. Classification According to Geologic Age</i> |                                                    |                 |                |
|----------------------------------------------------|----------------------------------------------------|-----------------|----------------|
| <i>Age</i>                                         | <i>Type of Rock</i>                                | <i>Velocity</i> |                |
|                                                    |                                                    | <i>Ft./Sec.</i> | <i>M./Sec.</i> |
| Quaternary                                         | Sediments (various degrees of consolidation) ..... | 1,000—7,500     | 305—2,290      |
| Tertiary                                           | Consolidated Sediments ..                          | 5,000—14,000    | 1,530—4,270    |
| Mesozoic                                           | Consolidated Sediments ..                          | 6,000—19,500    | 1,830—5,950    |
| Paleozoic                                          | Consolidated Sediments ..                          | 6,500—19,500    | 1,980—5,950    |
| Archeozoic                                         | Various .....                                      | 12,500—23,000   | 3,810—7,020    |

| <i>C. Classification According to Depth †</i> |                          |                               |                                |
|-----------------------------------------------|--------------------------|-------------------------------|--------------------------------|
|                                               | 0—2000 ft.<br>(0—600 M.) | 2000—3000 ft.<br>(600—900 M.) | 3000—4000 ft.<br>(900—1200 M.) |
|                                               | <i>Ft./Sec.</i>          | <i>Ft./Sec.</i>               | <i>Ft./Sec.</i>                |
| Devonian .....                                | 13,300                   | 13,400                        | 13,500                         |
| Pennsylvanian .....                           | 9,500                    | 11,200                        | 11,700                         |
| Permian .....                                 | 8,500                    | 10,000                        | .....                          |
| Cretaceous .....                              | 7,400                    | 9,300                         | 10,700                         |
| Eocene .....                                  | 7,100                    | 9,000                         | 10,100                         |
| Pleistocene-to-Oligocene                      | 6,500                    | 7,200                         | 8,100                          |

\*The higher values in a given range are usually obtained at depth.

†Data from B. B. Weatherby and L. Y. Faust, *Bull. Amer. Assoc. Petrol. Geologists*, 10 (1926) 1.

<sup>a</sup>Reprinted from pg. 660 of Jakosky<sup>2</sup>.

## 7. METHOD

After the grid pattern is established on a given claim by the owner or party in charge, we mark each test with flagging. We clean loose debris to allow firm soil contact with the microphone. We then cover the microphone to lessen the surface noise. A small charge is fired (usually a 16 gauge shotgun) to generate a seismic wave six feet from the microphone. The wave going into the ground and the reflected signal coming out is recorded on a magnetic tape recorder. We also do a field test on a nearby area with similar conditions where bedrock depth is known by drilling or excavation to determine the velocity of the gravels.

## **8. DATA PROCESSING AND PRESENTATION**

The recording is sent back to base camp and is transferred into the Akai S700 Digital Sampler by means of a coaxial cable with 6.3 mm phone plug jack. The Akai is coupled with the Atari 520 St. computer with Midi Interface. Other peripherals are connected with various other interface connections.

The seismic recording is now analyzed in various formats and then the best choice is printed out on a Seikosha SP-1600 Dot Matrix Printer. A report on the testing and the interpretation of the data is made out to finalize the survey, along with copies of the original Fourier Transform for 3-D wave form analysis.

## 9. INTERPRETATION

In tests conducted in the past on Hunker Creek and the Klondike River, we determined that those frozen gravels had a velocity of 1500 ft/sec. (1.5 ft/ms). Based on this calculation the following formula is used:

Reflected milliseconds x 1.5 divided by 2 = feet to bedrock or the layer of interest.

### TEST 1

30 milliseconds show the broadest frequency range. Bedrock should be 23 feet deep.

### TEST 2

46 milliseconds indicates bedrock at 35 feet deep.

### TEST 3

26 milliseconds show the broadest frequency range. Bedrock should be 20 feet deep.

### TEST 4

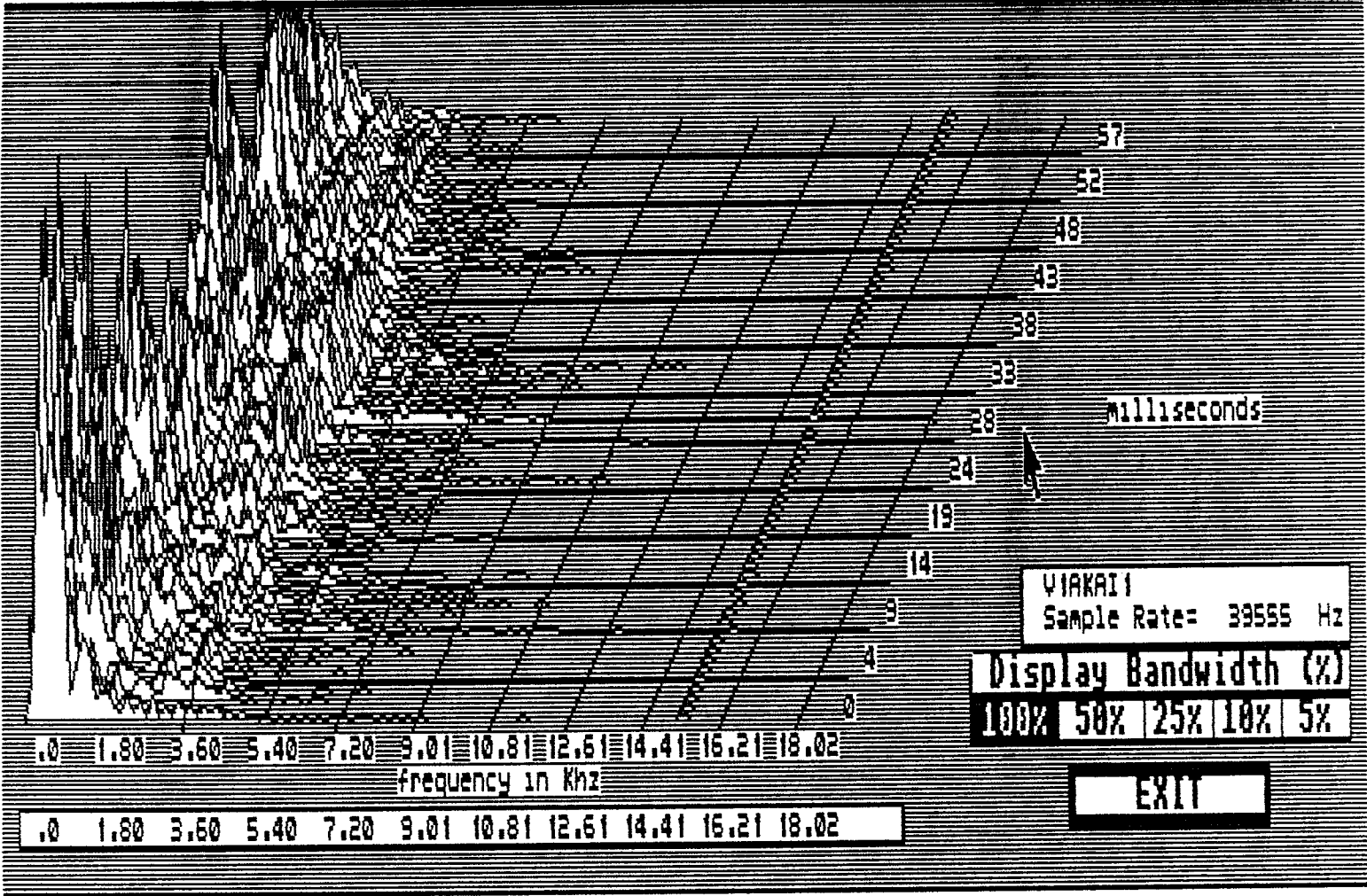
29 milliseconds show the broadest frequency range. Bedrock should be 22 feet deep.

## 10. CONCLUSION

For the many varying soil conditions in different geographical locations could alter the final results. For this fact, an actual excavation on one of the test sites is strongly recommended. The most shallow reading test site is the best suited for this purpose. More accurate results can be achieved in this manner.

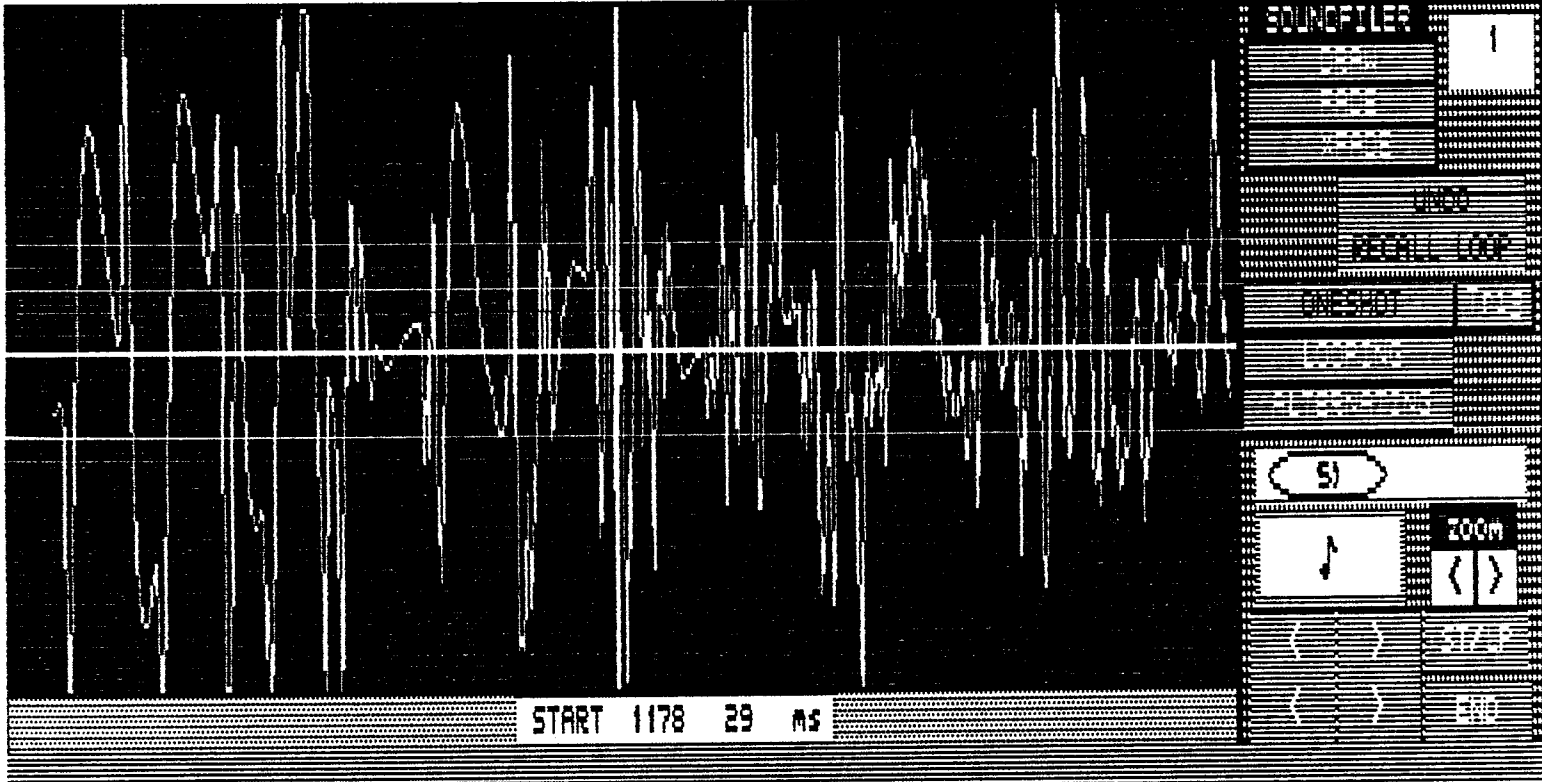
## 11. RECOMMENDATION

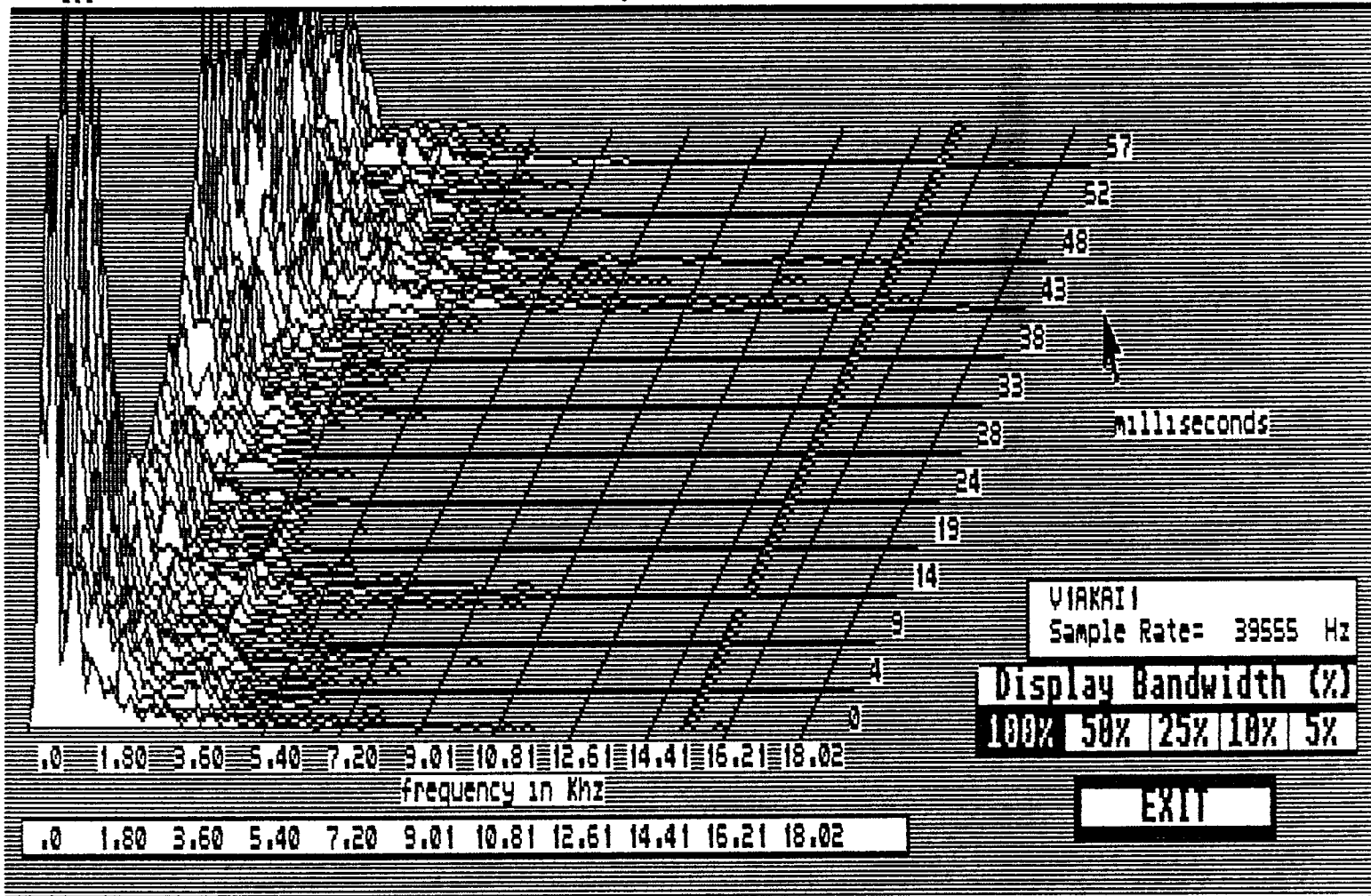
This type of reflected seismic testing is ideal in shallow placer ground. Without drilling or excavating near the test sites to establish velocity, the contour of the subsurface profile could still be charted in a cross test of a given valley. Old stream beds are possible to locate this way, giving a target area for a drill. A re-analysis of the seismic data after a drill log can make these tests surprisingly accurate. A tighter grid pattern in the future may be of great value in a drilling or mining strategy program.



A File Akai Voice Wave J

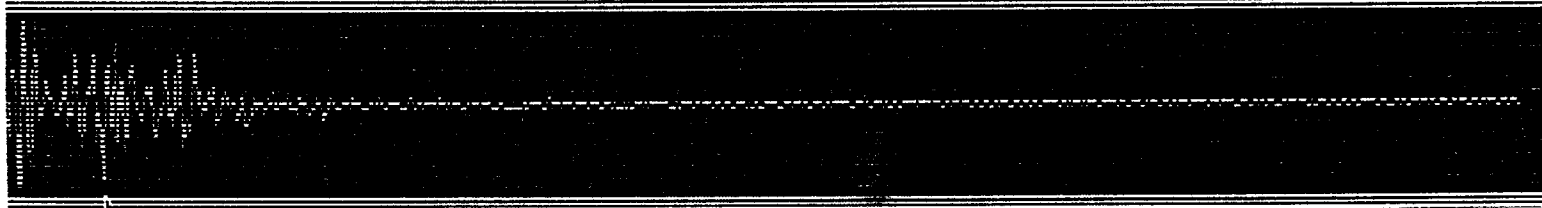
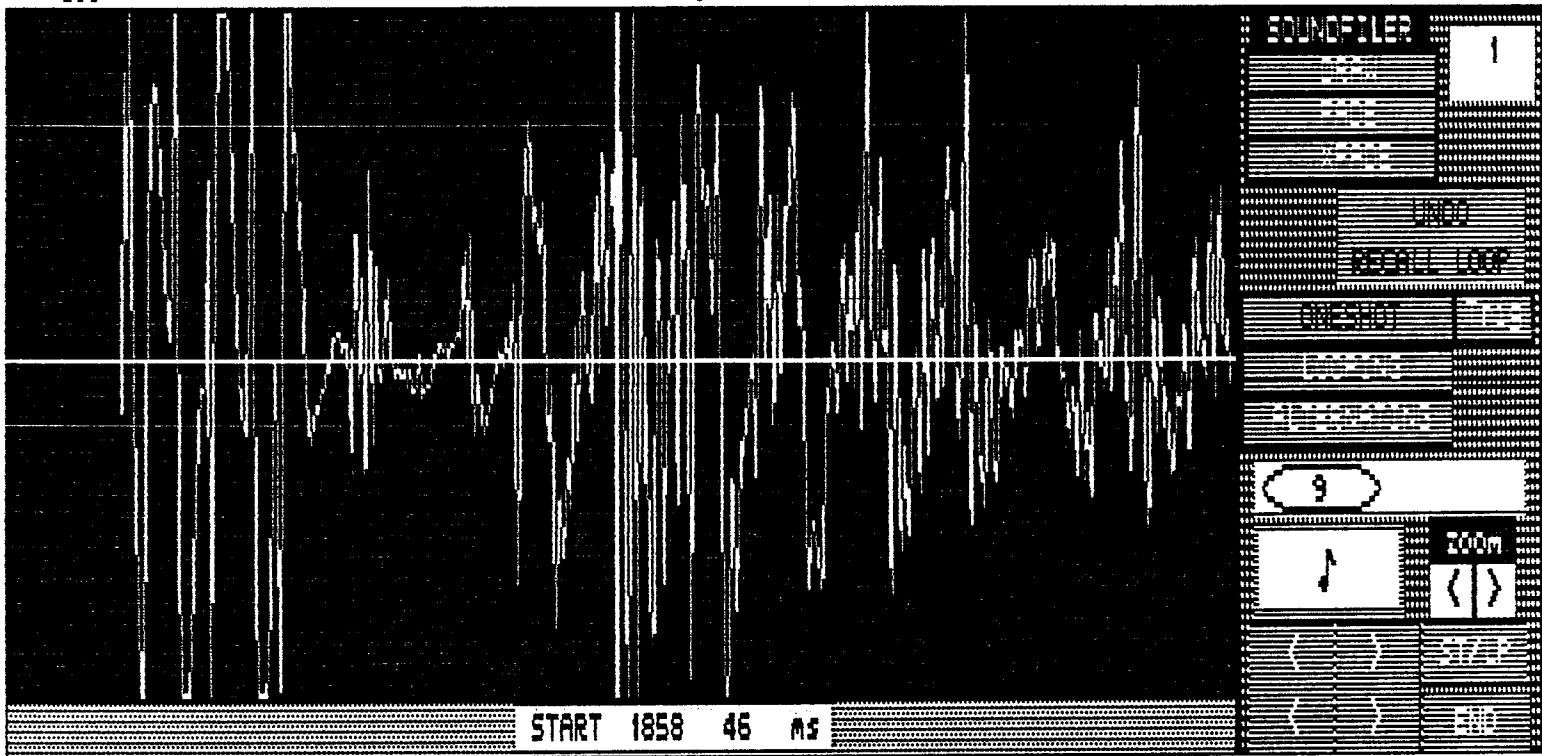
1

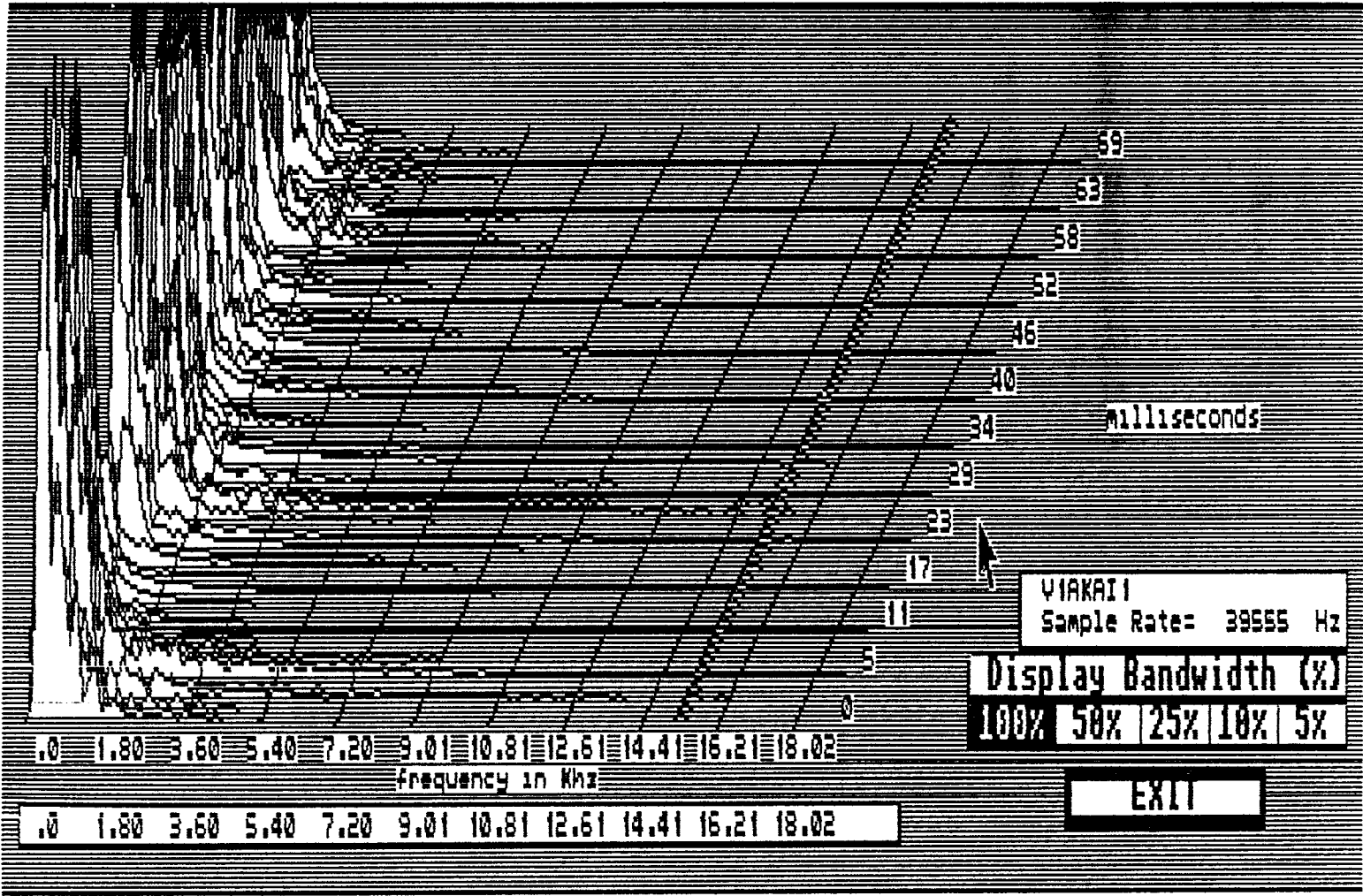




File Akai Voice Wave

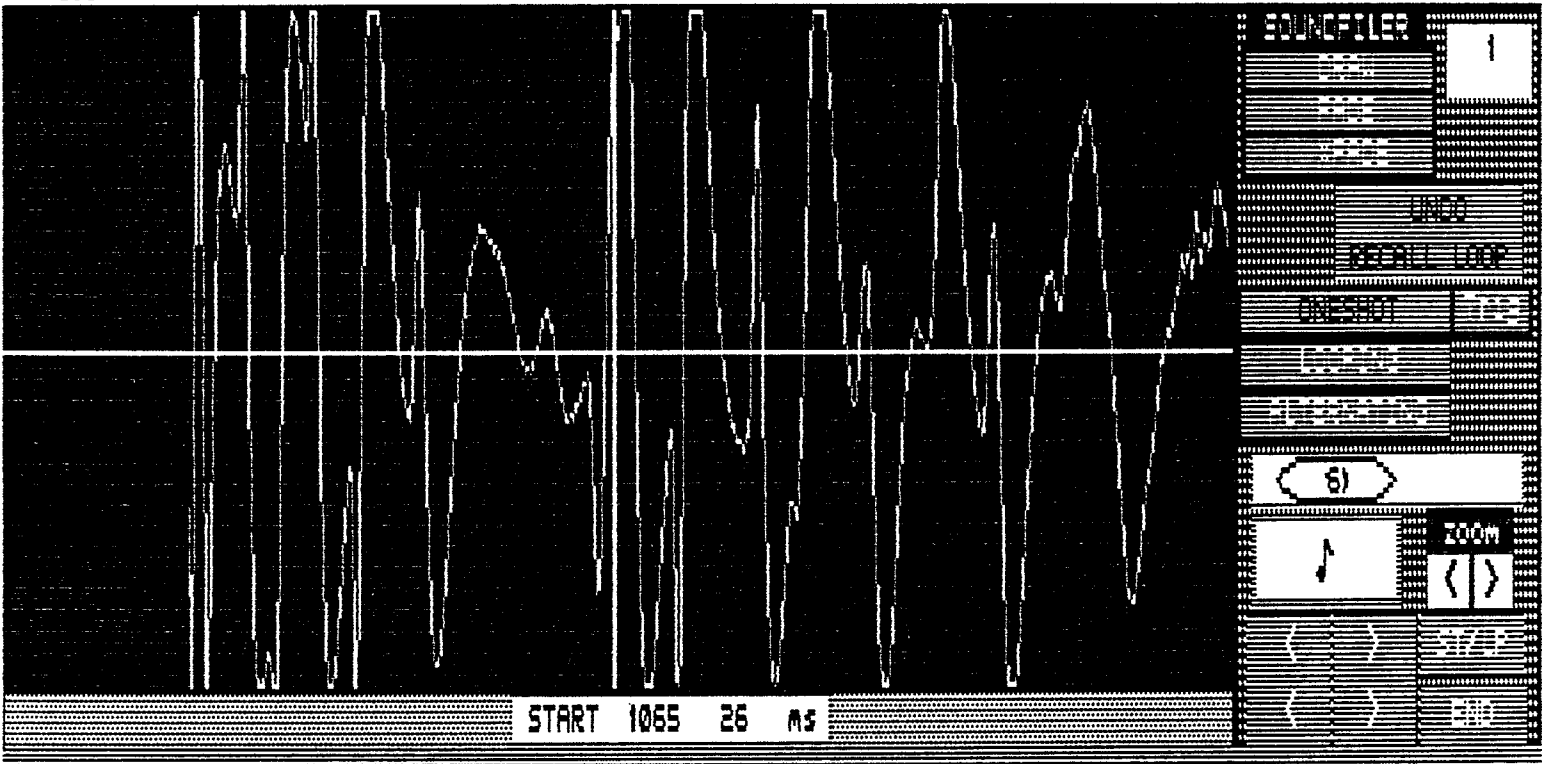
2

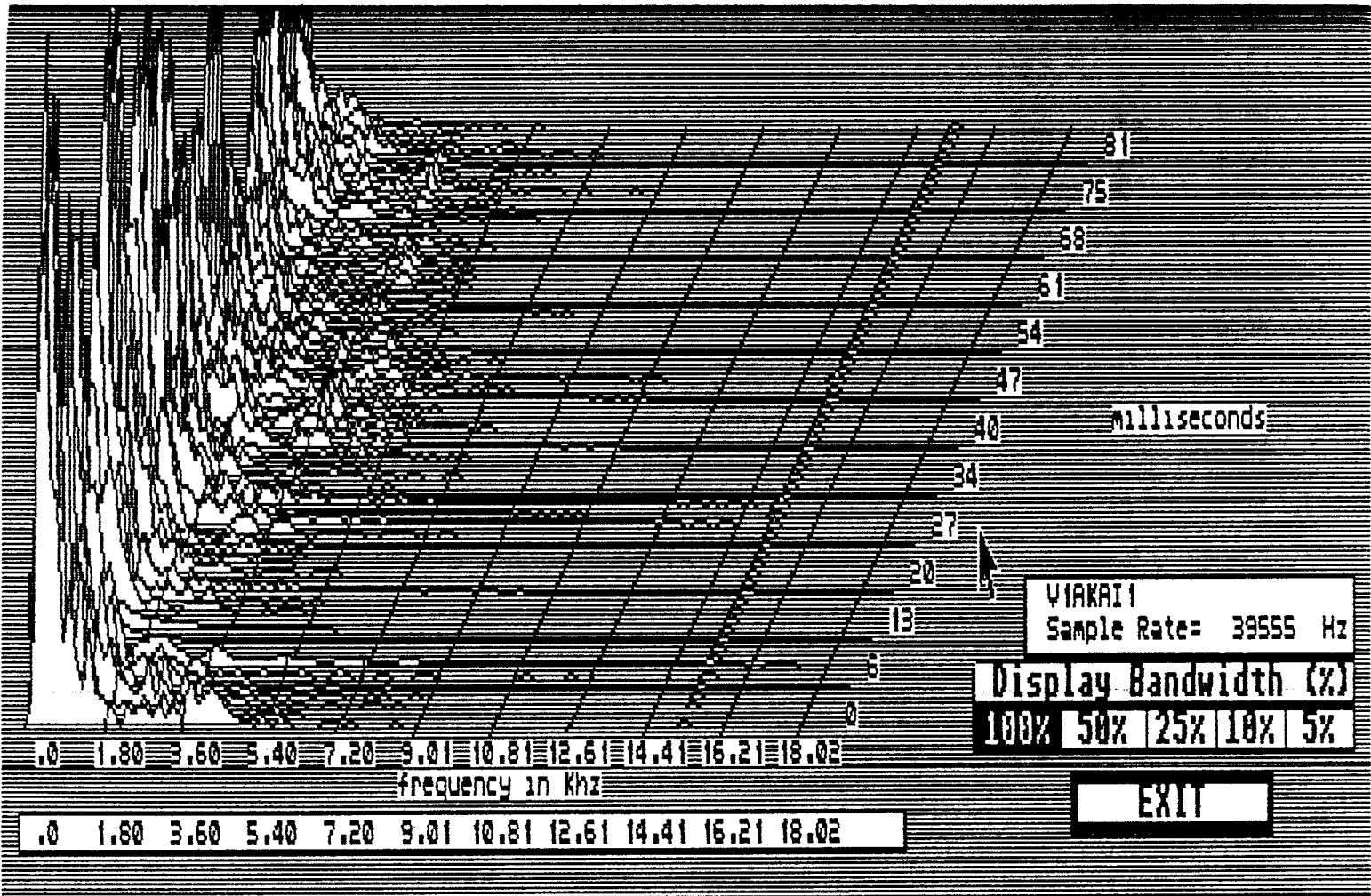




File Akai Voice Wave

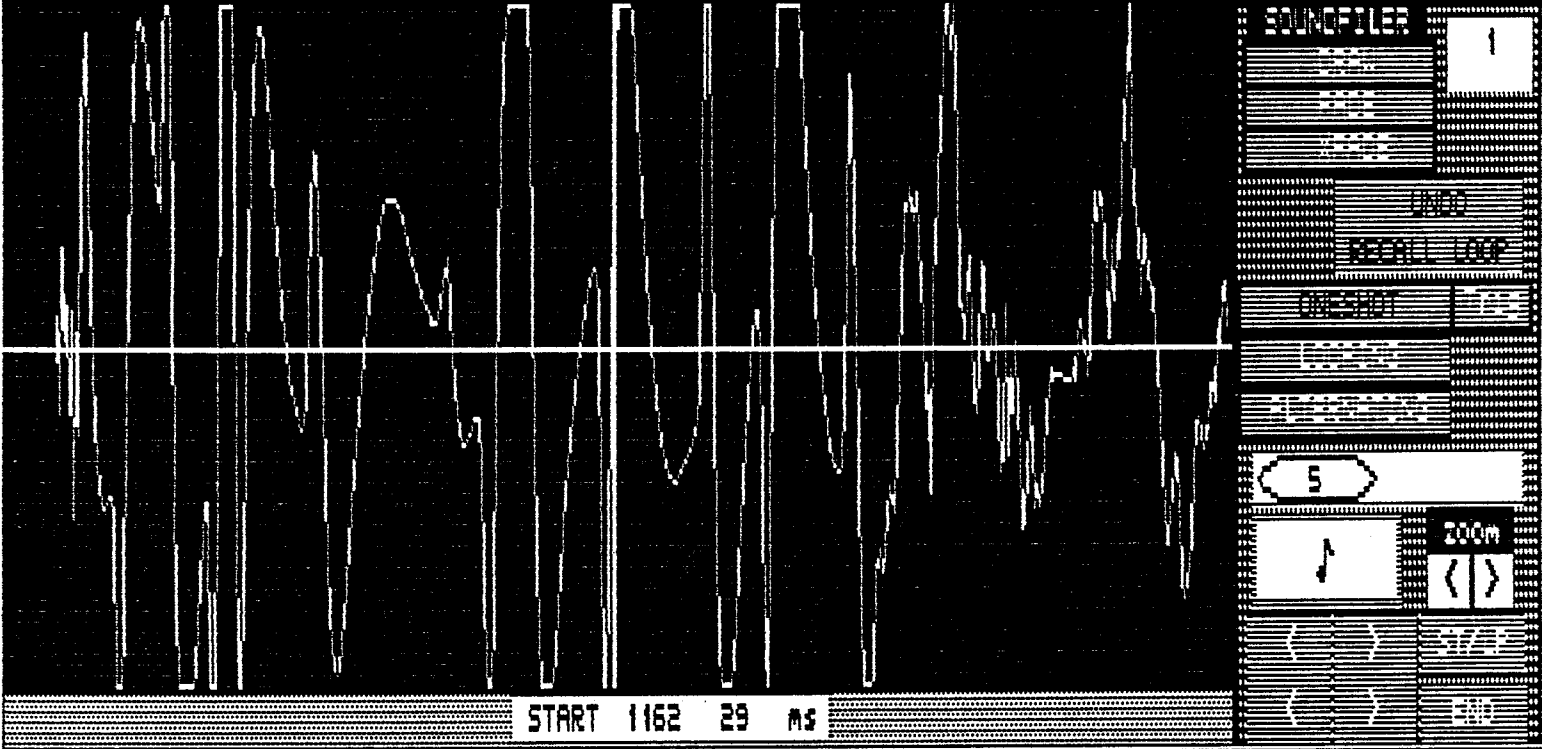
3





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4



## 12. STATEMENT OF ASSESSMENT COSTS

For seismic survey conducted on Placer Gold Bluf Claim #P7255.

### Seismic Test

\$250 per test x 4 shots = \$1000

Includes:

Seismic consultant  
Assistant for field and expediting  
Computer and printer time  
Computer and program time  
Computer down-loading (off-loading/data dumping)  
Seismic interpretation  
Equipment - ATV, axe, hip chain with thread,  
flagging tape, marker etc.  
Transportation  
Food and camping supplies  
Accommodations (hotel, tent or camper)  
Test shots where applicable (for calibration)

### Report Preparation

Report writing, drafting,  
map and figure preparation,  
photocopying and binding = 400

Total Cost = \$1400

## CERTIFICATION

I, Ted Sandor, of Whitehorse, Yukon Territory certify that:

1. I hold a Gas and Arc Welding diploma from Northern Alberta Institute of Technology, Edmonton, Alberta, and have been practising continuously since mid seventies in ArdcO Industries on oil field and seismic related equipment.
2. I am a journeyman welder, licensed to practise in Alberta. The geophysical technology came from extensive field work in the oil patch, and the very need to satisfy my own mining strategy since 1978.
3. The geophysical field work was conducted with assistance that may change from test to test. The report preparation and interpretation is done by me personally to keep up the highest quality of this report.
4. I have based conclusions and recommendations contained in this report on my knowledge of geophysics, my previous experience and the results of the field work conducted on the property.
5. Directly or indirectly I hold no interest in this property other than professional fees, nor do I expect any interest in the property or any other of the owner's holdings.
6. The accuracy of the final results depends more on the calibration of the recording device and the computers than on the qualification of the operator.

Whitehorse, Yukon Territory  
July 9, 1991

  
Ted Sandor, Seismic Consultant

### 13. REFERENCES

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2. J.J. Jakosky, Exploration Geophysics.  
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3. Technical Report E-73-4 Seismic Refraction Exploration for  
Engineering Site Investigations. Bruce B. Redpath (May, 1973)
4. 1984 Open File, R.L. Debicki, Bedrock Geology and Mineralization  
of the Klondike Area (West), 1150/14,15 and 116B/2,3.
5. J.K. Mortensen, Geochemistry of the Klondike District, West Central  
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