CLEAR MINES LTD.

400-905 W.Pender St., Vancouver, B.C V6C 1L6 Phone: 669-6731

March 16, 1982

Indian and Northern Affairs Canada
Box 249
Dawson City, Yukon

Attention: B.J. Proudfoot

Dear Ms. Proudfoot,

Enclosed is the additional information you requested on the Hammer Seismic Refraction Survey that was performed on the Company's Placer Lease, 5889. Please forgive me for the delay in providing you with this information as the Company's Consultant was very difficult to contact.

Yours truly,

Matthew W. Jones
Contoller

MWJ:jvb
encl.

120050
Part A.

GEOPHYSICAL REPORT

ON

PLACER LEASE #5889

FOR

CLEAR MINES LIMITED
400-905 WEST PENDER STREET
VANCOUVER, BRITISH COLUMBIA

BY

F.J.R. SYBERG
22313 124th AVENUE
MAPLE RIDGE, BRITISH COLUMBIA.

GEOPHYSICAL INTERPRETATION

SUMMARY

This report represents the results of the interpretation of a preliminary test refraction survey conducted over the placer leasse #5889 during 1981.

The depth of workable gravels are less than 30 meters. Poor sampling of overburden velocities have negated computation of more detailed relief of bedrock .

A high resolution signal enhancement refraction survey for a maximum detection depth of 30 meters is recommended. Further, the details of such a survey are recommended to facilitate wavefront reconstruction interpretation.

Respectfully submitted,

F.J.R. Syberg

Fred J.R. Syberg, B.Sc.
Geophysicist.

October 22,1981.

Location, Date of Work, Crew, Instrument.

Location : Placer lease #5889

NTS : 115-O-12

63 deg.32 min. N Lat. by 139 deg.55 min. E Long.

Date of Work :

Field work : Sept. 20 - Sept. 21, 1981

Interpretation : October 14 - October 15, 1981.

Field Crew :

S. Young	-	Geophysical Operator.
A. Johnngard	-	Field Assistant.
R. Babchuck	-	Field Assistant.

Instrument : GeoMetrics Nimbus 125 with hammer.

Length of Survey: 2.24 line km.

F.J.R.S.

INTRODUCTION

Persuant to an agreement between Clear Mines Ltd. and Donegal Development Ltd. refraction seismic surveying was conducted on a series of test lines during 1981.

The nature of the survey has been targeted towards detecting workable gravels above a bedrock interface below 30 meters in depth. In this respect the spread intervals were preset at 10 meters.

The survey procedure consisted of instrument set-up with signal generation being accomplished by striking a steel plate with a sledge hammer one or more times. A first arrival T-X curve was collected by moving the hammer source in a step-out fashion.

Each line was "shot" unilaterally due to cost-efficiency and only where deemed necessary were the spreads "shot" bilaterally.

The recording method consisted of presetting instrument gain and time delay. The first break, gain and delay time were noted for each step-out.

DATA REDUCTION

The reduction of field observations consisted of:

1) Delay time adjustment.

2) Dealiase of T-X curve on a computer.

F.J.R.S.

INTERPRETATION :

The targeted detection depth of plus 30 meters has shown to be too deep everywhere. These findings, therefore, permit the specification of a detailed refraction survey.

None of the T-X curves indicated gravel velocities in the order of 2500 to 3000 meters per second. In general, these curves depicted for the most part higher refractor velocities.

RECOMMENDATIONS :

A detailed series of refraction seismic survey lines are recommended to be scheduled.

One survey line paralleling the creek approximately at the centre of workable gravels should be shot using a hammer source for short step-outs and electric blasting caps or light 75% Forcite explosive charges at longer step-outs. The spreads should be 180 meters in length and shot bilaterally. The survey of this line should be conducted with half-spread overlaps, 90 meters. The source locations are recommended to be located at the following distances from the instrument:

1.25 m., 2.5 m., 3.75 m., 5 m., 7.5 m., 10 m.
then every 5 meters.

At the end of every second spread, every 180 meters, detail spreads perdendicular to the above line should be shot bilaterally within boundaries of workable gravels. The data gathered in this manner is recommended to be interpreted using the wavefront reconstruction method. This method automatically adjusts for migration. The detail cross-section lines will provide for dip adjustment in the computation of true depth.

The cost of the above work on site is estimated at approximately $1,200.00 per line km., not including mobilization/demobilization of field crews.

F.J.R.S.

CERTIFICATE OF QUALIFICATIONS

I, Fred J.R. Syberg, do hereby certify that:

1) I am a practising geophysicist with offices at 22313 124th Avenue, Maple Ridge, B.C., Canada V2X 4J6.

2) I am a graduate of the University of British Columbia where I obtained my B.Sc.(Geophysics) in 1967.

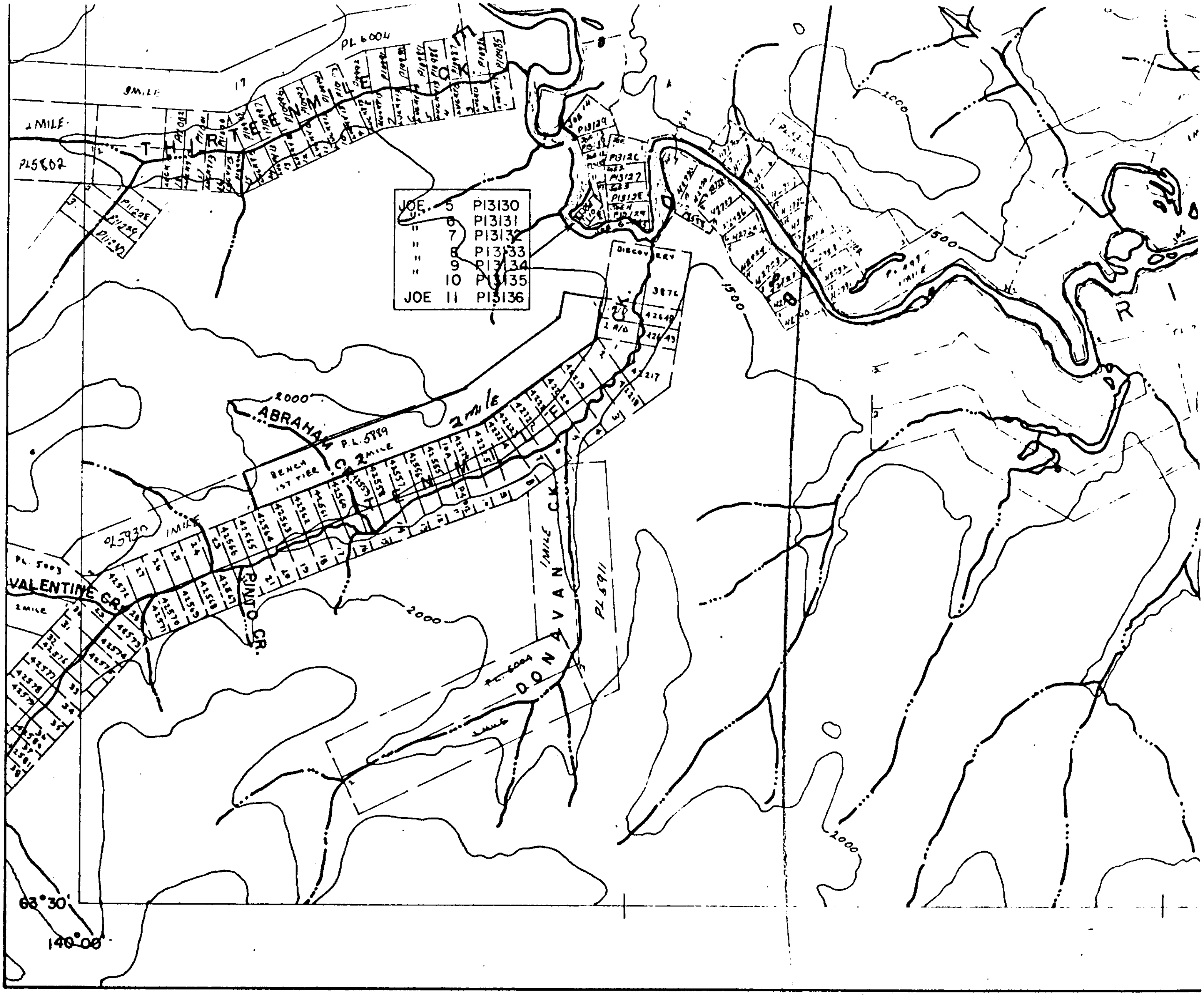
3) I am a member in good standing of:
The Society of Exploration Geophysicists.

4) I have been engaged in the study, teaching and practice of exploration geophysics continuosly for 14 years. I have worked as a consulting geophysicist on numerous projects internationally since 1969.

5) The geophysical field work of this report was done by Mr. S. Young, Donegal Development Ltd., 715-475 Howe Street, Vancouver, B.C., and at my recommendation. The interpretation of the results was done by the undersigned.

F.J.R. Syberg

Fred J.R. Syberg, B.Sc.
Geophysicist.



JOE 5 P13130
" 6 P13131
" 7 P13132
" 8 P13133
" 9 P13134
" 10 P13135
JOE 11 P13136
THIRTEEN MILE CK.
PL 6004
PL5802
2 MILE
DISCOVERY
ABRAHAM CR.
P.L. 5899
BENCH 1ST TIER
VALENTINE CR.
PINTO CR.
DONOVAN CK.
PL 5911
PL 5930
P.L. 5003
2000
1500
63°30'
140°00'

CLEAR MINES LTD.

400 - 905 W. Pender Street
Vancouver, B.C.

HAMMER SEISMIC

REFRACTION SURVEY

DATA

on

Placer Lease: 5889

0+32

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.5	2.5
20	3.7	4.1
30	5.5	5.8
40	8.0	7.7
50	10.3	9.7

Estimated Refractor Velocity : 5820.
1st Layer Velocity : N/A

0+40

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.6	1.6
20	3.6	3.6
30	5.4	5.5
40	7.1	7.4
50	8.2	9.1

Estimated Refractor Velocity : 5051.
1st Layer Velocity : N/A

0+48

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.7	2.7
20	3.8	4.3
30	5.9	6.2
40	9.8	8.7
50	8.3	9.5

Estimated Refractor Velocity : 5436.
1st Layer Velocity : N/A

0+56

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.0	2.0
20	3.6	3.8
30	6.9	6.2
40	9.3	8.2
50	9.3	9.6

Estimated Refractor Velocity : 5190.
1st Layer Velocity : N/A

0+64

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.2	2.2
20	3.2	3.7
30	5.8	5.6
40	6.6	7.0
50	7.5	8.5

Estimated Refractor Velocity : 5971.
1st Layer Velocity : N/A

0+72

Off-set in meters	Observation +Delay msec.	Dealiased Oservation msec.
10	2.2	2.2
20	3.9	4.1
30	6.9	6.3
40	8.6	8.2
50	8.1	9.4

Estimated Refractor Velocity : 5170.
1st Layer Velocity : N/A

0+80

Off-set in meters	Observation +Delay msec.	Dealiased Oservation msec.
10	2.5	2.5
20	4.0	4.3
30	5.2	6.1
40	9.6	8.8
50	10.9	10.6

Estimated Refractor Velocity : 5059.
1st Layer Velocity : N/A

0+00

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.3	2.3
20	4.2	4.0
30	6.5	5.9
40	6.6	7.1
50	10.7	9.6

Estimated Refractor Velocity : 5925.
1st Layer Velocity : N/A

0+08

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.0	2.0
20	3.4	3.7
30	6.4	5.9
40	6.5	7.2
50	9.2	9.3

Estimated Refractor Velocity : 5422.
1st Layer Velocity : N/A

0+16

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.1	2.1
20	4.4	4.0
30	6.1	5.8
40	7.1	7.4
50	8.7	9.1

Estimated Refractor Velocity : 5602.
1st Layer Velocity : N/A

0+24

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.9	2.9
20	4.1	4.6
30	6.8	6.8
40	8.6	8.7
50	8.9	10.2

Estimated Refractor Velocity : 5125.
1st Layer Velocity : N/A

0+88

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.8	1.8
20	4.1	3.7
30	4.6	5.0
40	8.1	7.2
50	10.1	9.0

Estimated Refractor Velocity : 5920.
1st Layer Velocity : N/A

0+96

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.5	1.5
20	3.0	3.3
30	5.7	5.5
40	6.0	7.0
50	10.0	9.6

Estimated Refractor Velocity : 5026.
1st Layer Velocity : N/A

0+104

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.5	2.5
20	3.6	4.1
30	6.4	6.1
40	7.4	7.7
50	8.4	9.2

Estimated Refractor Velocity : 5667.
1st Layer Velocity : N/A

0+112

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.6	1.6
20	3.7	3.4
30	5.7	5.2
40	7.7	7.0
50	8.5	8.4

Estimated Refractor Velocity : 5878.
1st Layer Velocity : N/A

0+120

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.9	1.9
20	4.5	4.1
30	5.9	6.0
40	7.0	7.7
50	10.3	10.1

Estimated Refractor Velocity : 4922.
1st Layer Velocity : N/A

0+128

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.5	2.5
20	5.2	4.7
30	6.3	6.5
40	6.9	8.0
50	9.1	10.1

Estimated Refractor Velocity : 4988.
1st Layer Velocity : N/A

0+136

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.7	2.7
20	5.2	4.7
30	5.5	6.0
40	8.8	8.3
50	9.3	9.6

Estimated Refractor Velocity : 5643.
1st Layer Velocity : N/A

0+144

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.8	2.8
20	4.5	4.5
30	5.8	6.1
40	9.4	8.4
50	7.8	9.1

Estimated Refractor Velocity : 5806.
1st Layer Velocity : N/A

0+152

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.8	2.8
20	3.9	4.3
30	6.4	6.2
40	8.8	8.2
50	10.1	9.7

Estimated Refractor Velocity : 5911.
1st Layer Velocity : N/A

0+160

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.9	2.9
20	5.0	4.9
30	7.9	7.2
40	10.1	9.2
50	8.6	10.1

Estimated Refractor Velocity : 5110.
1st Layer Velocity : N/A

0+168

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.3	2.3
20	3.7	4.0
30	6.7	6.3
40	8.8	8.2
50	11.4	10.4

Estimated Refractor Velocity : 5254.
1st Layer Velocity : N/A

0+176

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.4	2.4
20	3.4	3.9
30	5.1	5.6
40	6.9	7.3
50	9.1	9.1

Estimated Refractor Velocity : 5934.
1st Layer Velocity : N/A

0+184

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.8	2.8
20	5.5	5.0
30	6.7	6.7
40	9.8	9.0
50	8.9	10.1

Estimated Refractor Velocity : 5122.
1st Layer Velocity : N/A

0+192

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.1	2.1
20	3.0	3.6
30	6.1	5.7
40	6.6	7.0
50	7.8	8.5

Estimated Refractor Velocity : 5919.
1st Layer Velocity : N/A

0+200

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.1	2.1
20	3.2	3.7
30	5.2	5.6
40	6.5	7.2
50	9.4	9.3

Estimated Refractor Velocity : 5535.
1st Layer Velocity : N/A

0+208

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.0	2.0
20	3.3	3.6
30	6.6	5.9
40	8.2	7.6
50	7.5	8.7

Estimated Refractor Velocity : 5536.
1st Layer Velocity : N/A

0+216

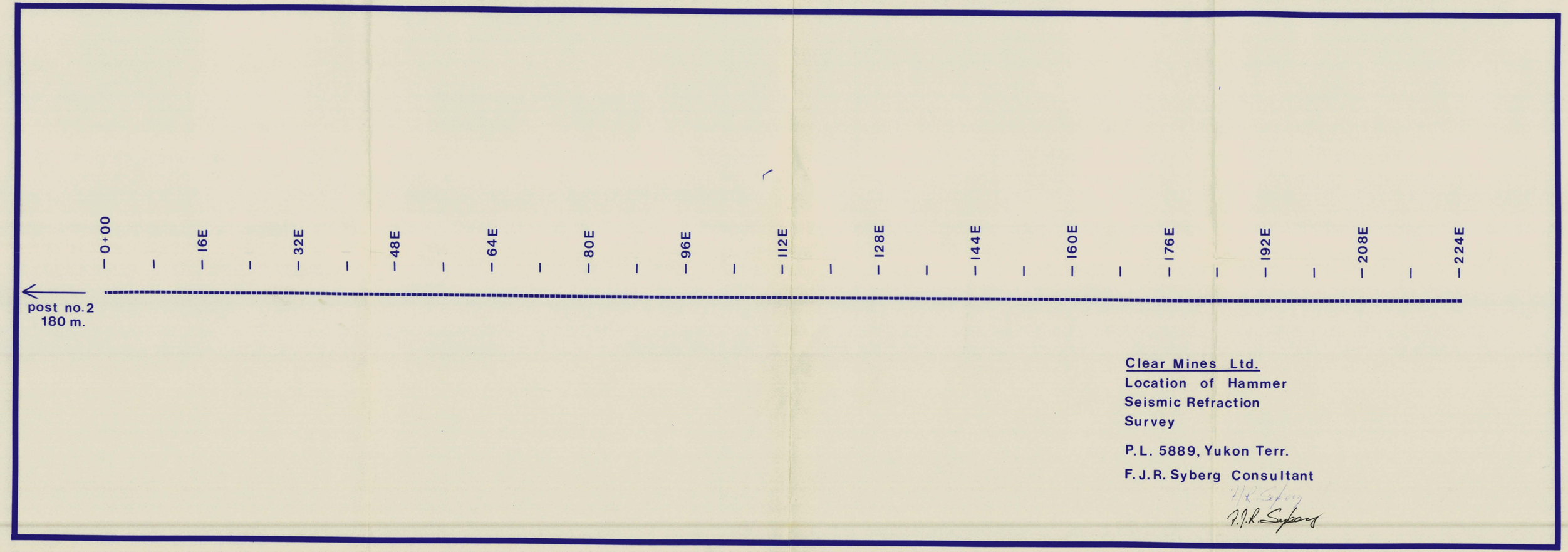
Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	2.1	2.1
20	4.0	3.8
30	6.0	5.6
40	6.8	7.0
50	7.9	8.5

Estimated Refractor Velocity : 5958.
1st Layer Velocity : N/A

0+224

Off-set in meters	Observation +Delay msec.	Dealiased Observation msec.
10	1.6	1.6
20	4.0	3.6
30	4.2	4.9
40	8.2	7.4
50	8.5	8.7

Estimated Refractor Velocity : 5531.
1st Layer Velocity : N/A



Clear Mines Ltd.
Location of Hammer
Seismic Refraction
Survey

P.L. 5889, Yukon Terr.

F.J.R. Syberg Consultant

F.J.R. Syberg

(PART B)
(120050) (2)