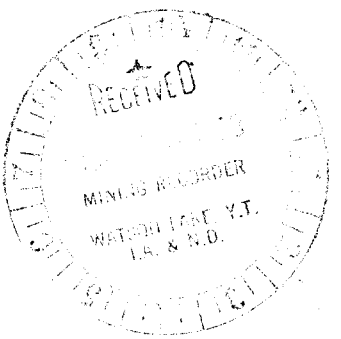
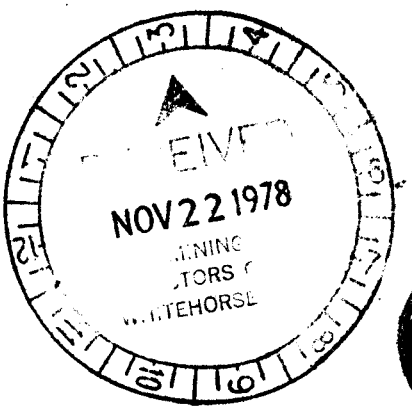
GEOPHYSICAL REPORT
On A
PULSE ELECTROMAGNETOMETER SURVEY
On Behalf Of
NEW FRONTIER EXPLORATION INC.

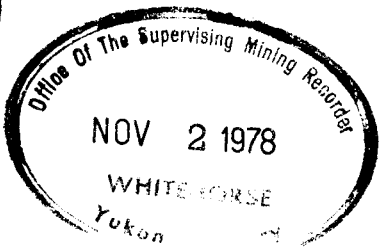
Barb Mineral Claims, Frances Lake area,
Watson Lake Mining Division, Yukon.
Lat. 61°27'40"N, Long. 129°25'W, N.T.S. 105 H/6

AUTHOR: Glen E. White, P. Eng., Geophysicist
DATE OF WORK: July 14 - August 3, 1978
DATE OF REPORT: August 31, 1978

090398







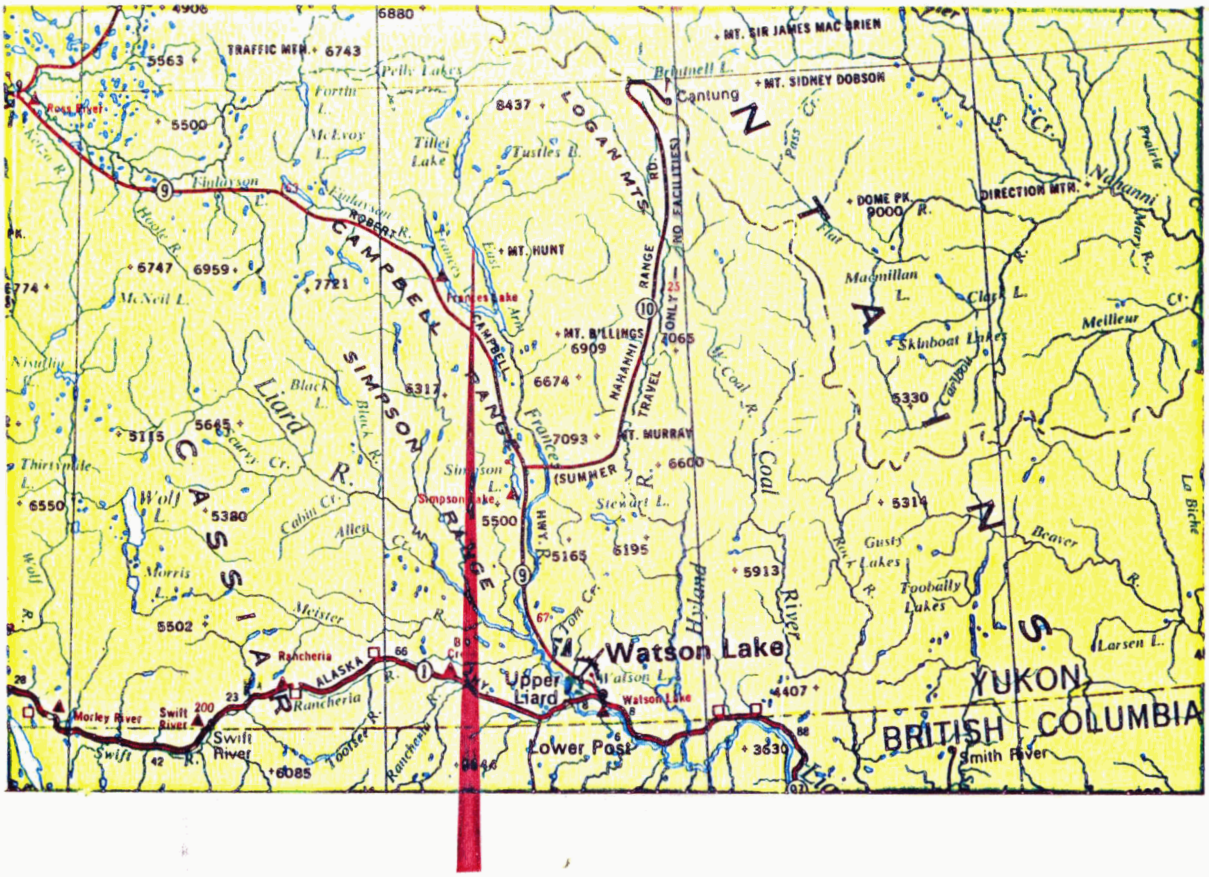
This [illegible] by the Geolo[illegible] recommended [illegible] amount of $3,400.00

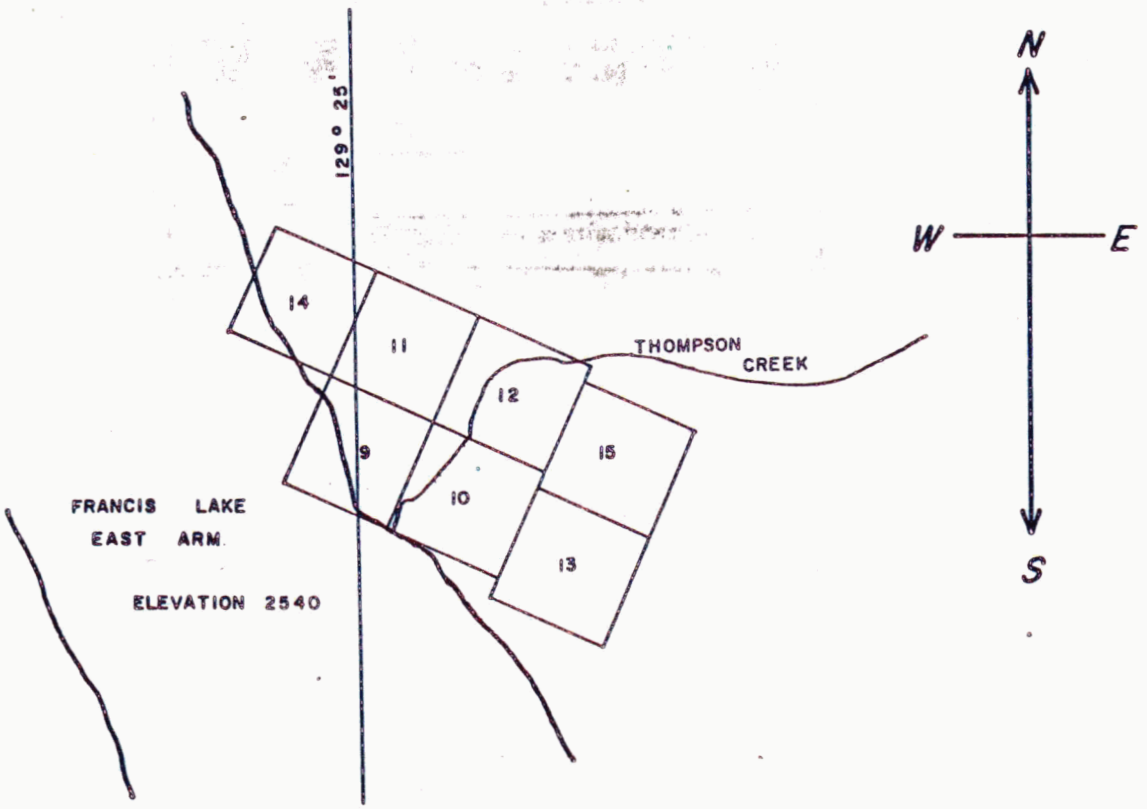
[illegible]
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act

K. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory





NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

LOCATION & CLAIM MAP

61° 27 1/2'

Glen E. Wade
geophysical consulting
& services ltd

CONTENTS

	PAGE
Introduction	1
Property	1
Location and Access	1 - 2
General Geology	2
Survey Specifications	
(1) Survey Grid	2 - 3
(2) Pulse Electromagnetometer Survey	3 - 4
Discussion of Results	4 - 6
Conclusions and Recommendations	6 - 7
Instrument Specifications	8 - 10
~~Statement of Qualifications~~	~~11~~
~~Cost Breakdown~~	~~12~~

Illustrations

Plate 1 - Location and Claims Map

Figure 1 - VEM Loop and Conductor Map

Figures 2 - 16 - Horizontal PEM Profiles

Figures 17 - 58, Vector PEM Profiles

INTRODUCTION

The Barb mineral claims cover an occurrence of lead-zinc mineralization on the east shore of Frances Lake known as the Matt-Berry prospect. The mineral zone is considered to be possibly strata-bound with a gentle dip of some 35 - 45° to the northeast.

A pulse electromagnetometer survey was conducted during the period July 14, 1978 - August 3, 1978 utilizing the horizontal and vector modes to try and detect any shallow or deep electromagnetic responses. The survey was conducted by Glen E. White Geophysical Consulting & Services Ltd. on behalf of New Frontier Explorations Inc.

PROPERTY

The property surveyed consists of the Barb 9 - 15 mineral claims as illustrated on Plate 1.

LOCATION AND ACCESS

The mineral claims are located on the east arm of Frances Lake, on Thompson Creek, approximate co-ordinates - Latitude 61°27'40"N, Longitude 129°25'W, N.T.S. 105 H/6, Watson Lake Mining Division, Yukon.

Facile access is by float plane from Watson Lake some 100 miles to the south or by highway to Frances Lake and some 35 miles by boat to the Thompson Creek campsite.

GENERAL GEOLOGY

The geology of the region is shown on G.S.C. Map 6-1966, Frances Lake, N.T.S.105H , at a scale of 1" = 4 miles. The underlying rocks consist of a series of phyllites, quartz-sericite schists, hornfels and calc-phyllites of probable Devonian/Mississippian age which have been intruded to the west by granitic intrusions of possible Cretaceous age.

The mineralization, consisting of galena-sphalerite, is reported to be strata-bound and is associated with a phyllite unit referred to as the Matt-Berry formation. For further reference see "Report on Barb 9 - 15 and Zinc 1 - 62 Mineral Claims, Watson Lake M. D., Yukon Territory" by Charles K. Ikona, P. Eng., Dec. 2, 1977.

SURVEY SPECIFICATIONS

Survey Grid

A previous survey grid was re-established by New Frontier Exploration Inc. personnel. The lines are orientated N24°E from a S66°E baseline and are spaced

at 200 foot intervals.

Pulse Electromagnetometer Survey

The PEM system is used primarily in the horizontal loop configuration. The transmitter consists of a transmit loop 6 meters in diameter that is laid out horizontally on the ground. The loop is energized by a pulse of 15 to 20 amps at 24 volts. The current is turned off by a special ramp circuit. The on-off time is 10.8 ms. The receive coil is generally spaced 25 - 100 meters from the transmit loop. The signal on the receive coil is sampled, averaged and then stored during the reading interval.. One sample is taken of the primary pulse and eight samples are taken of the secondary field during the off time. Time synchronization is by radio link or cable.

The eight channels of secondary field information are equivalent to a wide spectrum of frequency information from approximately 2 KH_Z to 16 H_Z which allows for determination of overburden effects and penetration of conductive overburden. Since the secondary field is measured directly during the primary field off time, the pulse method is free of geometrical restrictions between the transmit and receive coil positions, such as topography interference and coil alignment.

Vector EM is a deep penetrating electromagnetic survey technique which has evolved from the use of the pulse electromagnetometer system, PEM.

Vector EM consists of determining the horizontal and vertical componenets of the secondary electromagnetic field and thus the resultant vector which points to the eddy current position. The primary field is obtained from a small turam type loop of 500 feet/side which is energized with a current of some 22 amps at 24 volts and allows survey coverage of an area of approximately 2500 feet x 2000 feet on each side of the loop.

DISCUSSION OF RESULTS

Samples of galena mineralization and galena-sphalerite mineralization in the trenches around the baseline at 8 to 10S show conductivities with an ohm-meter which should yield electromagnetic conductors. However, the horizontal loop pulse electromagnetometer data, Figures 2 - 16, show no significant conductors. The survey was conducted over a limited area with a 100 foot separation to see if any of the surface lenses of mineralization would respond electromagnetically. Figure 8, Line 8S at 2W shows a small easterly dipping conductor.

The vector EM data Figures 17 - 58, showed a

number of changes in vector angle from line to line which usually indicates a change in lithology. These vector angle changes are illustrated on Figure 1 as possible contacts. A perusal of the data shows that loops B and C tend to f m dome-like vector patterns. This occurs with slightly conductive flat-lying lithology and is known as a formational response. Should there have been any significant conductors, the vectors should have focused on these rather than following the formational eddy currents. Figures 33 - 36 show the inferred mineral zone at the 2600 foot level as described in the report by Mr. Ikona, P. Eng. This mineralization was not detected by the horizontal or vector pulse electromagnetometer modes.

However, commencing on Line 26S, Figure 46, both loops B and C show a deep focus trend at 10W which extends to Line 40S - 15W. This trend does not appear to be associated with a typical dome-like formational response since it occurs in the same place for loops B and C which are asymmetrically positioned with respect to the anomaly. The electromagnetic responses are only in channels 1 and 2, the highest frequencies. Thus, the cause is likely to be lithologic. A possible interpretation is that the phyllites become graphic at depth or possibly grade into graphic argillite or shale.

This zone appears to start around 26S at a depth of some 400 - 600 feet and plunges southeasterly to Line 40S where it has an apparent depth of approximately 1000 feet.

CONCLUSION AND RECOMMENDATIONS

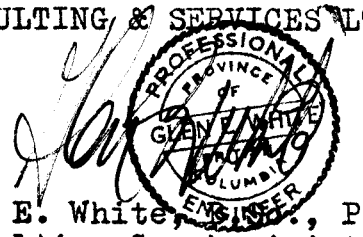
During the month of July 1978 to early August 1978, a program of horizontal and vector pulse electromagnetometer surveying was conducted over the Barb mineral claims, Frances Lake area, Watson Lake Mining Division, Yukon.

Some five miles of horizontal and fourteen miles of vector pulse electromagnetometer surveying were conducted over the known mineral showings and their projected extension.

The mineral showings, though selected hand samples were conductive, did not respond to this electromagnetic method. Figure 1 illustrates a number of linear changes in vector angle which usually reflect lithologic contacts. These trends correlate well with the known geological strike of the phyllites. A deep conductor focus of weak conductivity was detected in the southeast corner of the survey grid between lines 26S and 40S.

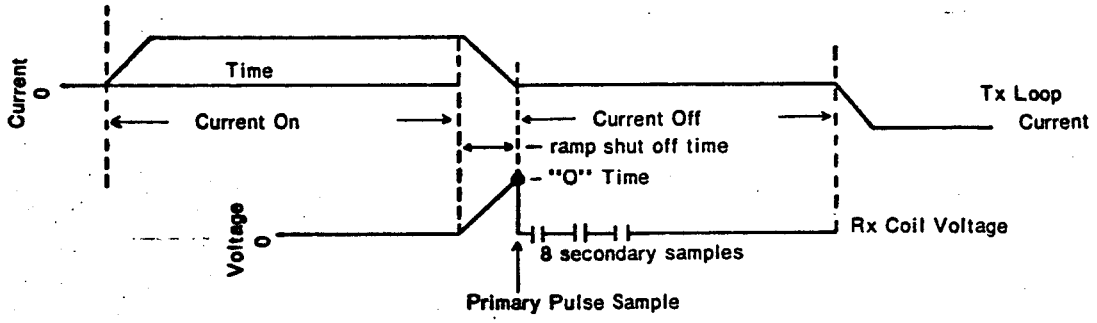
This zone may possibly relate to a graphite-bearing lithologic unit. Its investigation will have to depend upon the minerogenetic model being investigated since the vector focus detected is not indicative of a conductive massive sulphide target.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.



Glen E. White, B.Sc., P. Eng.
Consulting Geophysicist

PEM SPECIFICATIONS



Current Off time: 9.4 ms
Current on time: 10.8 ms
Current shut off (ramp) time: 1.4 ms
Sample times (zero to centre of sample): .15ms, .45ms, .85ms, 1.45ms, 2.45ms, 3.75ms, 5.85ms, 8.85ms.

Sample width: 100 μs
Zero time set at drop off point of primary pulse

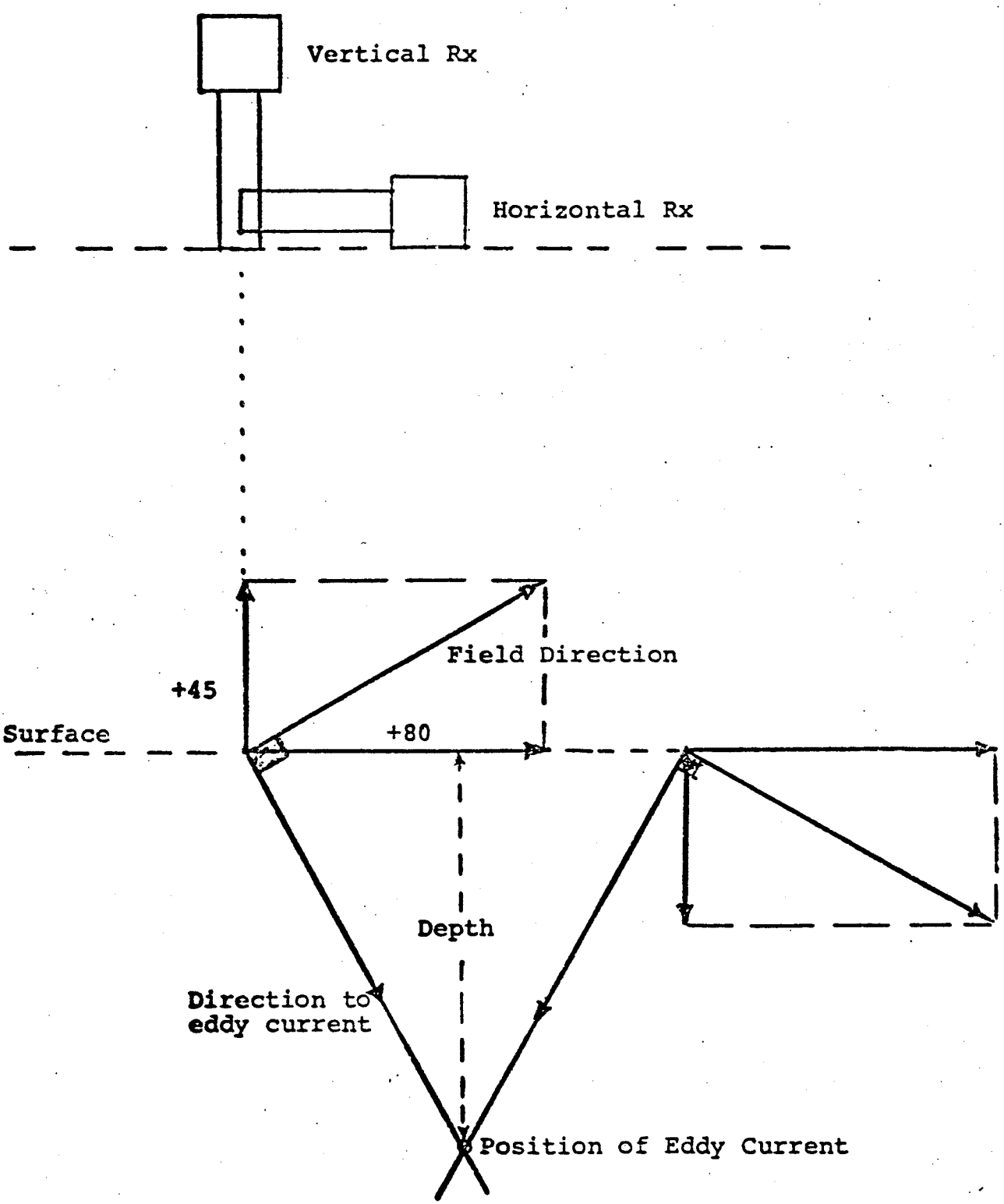
TRANSMITTER – Transmitter power and loop size may be increased to obtain increased penetration. Weight, portability and power capabilities of the control instrument are the limiting factors. The standard transmitter is designed to be carried by two men.

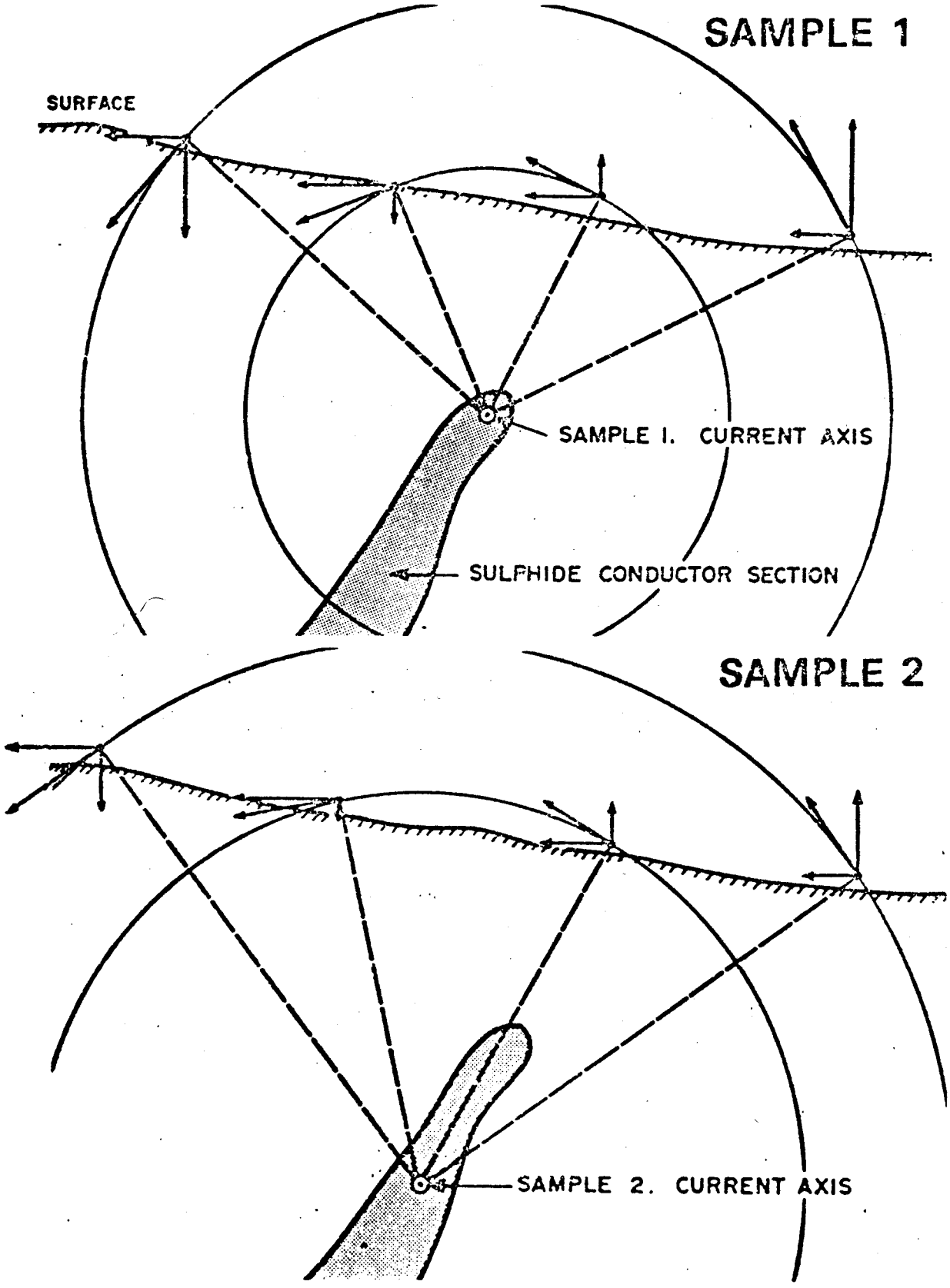
Loop diameter	– minimum 4 meters (13 feet)
Loop current	– 15 to 20 amps
Loop applied voltage	– 24 volts
Loop output	– minimum 4500 amps x meter ^{2}
Loop weight	– 11.8 kilos (26 lb)
Control unit weight	– 10 kilos (22 lb)
Control unit dimensions	– 20.5cm x 25.5cm x 36.5cm (8" x 10" x 14.5")
Battery supply weight	– 18.1 kilos (40 lb)
Battery supply	– 2 of 12 volt, 14 to 20 ampere hour

Timing control by radio synchronization

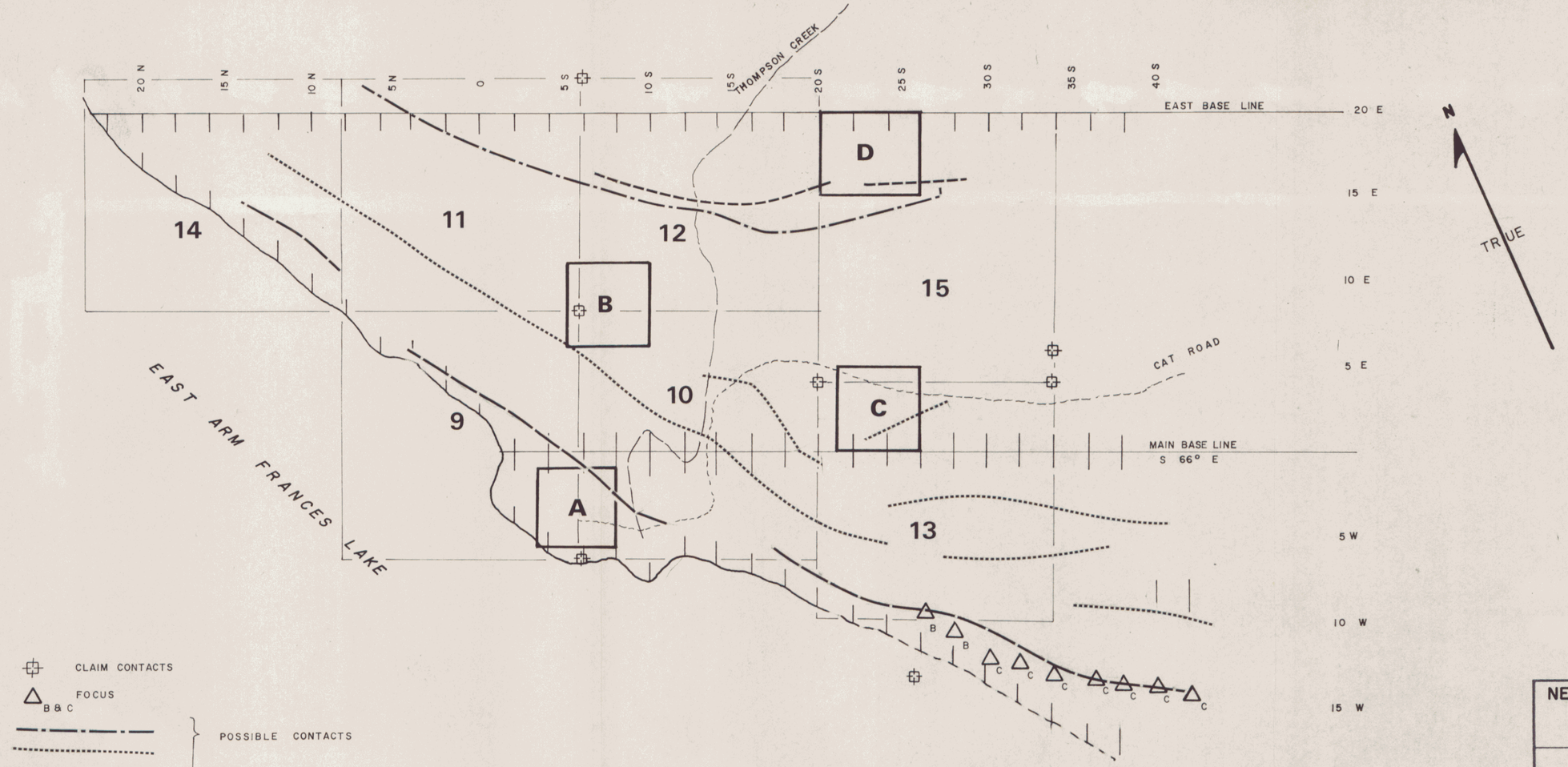
RECEIVER

- Receive coil dimensions: 55cm x 15cm (22" x 6")
- Receive coil weight: 4.5 kilos (10 lb)
- Preamplifier in coil
- Preamplifier batteries: 2 of 9 volt
- Receive coil tripod mounted
- Receiver measuring instrument dimensions: 28cm x 18cm x 21.5cm (11" x 7" x 9")
- Receiver measuring instrument weight: 6.3 kilos (14 lb)
- Timing control by radio synchronization
- Primary sample width: 100 μs
- Primary sample can be swept through primary pulse by means of a time calibrated pot
- Zero time set at primary pulse drop-off
- Secondary samples (eight of them) width: 100 μs
- Secondary samples time (zero to middle of sample): (1) .15ms (2) .45ms (3) .85ms (4) 1.45ms (5) 2.45ms (6) 3.75ms (7) 5.85ms (8) 8.85ms
- Automatic sampling for 5 seconds then all samples automatically stored
- Sample read out by means of meter
- Continuous sampling possible by switching function switch to "Continuous"
- Noise can be monitored by switching function switch to "Noise"
- Battery supply: 24 volt rechargeable, 2 of 12 volt Gel GC 12-15


Vertical Rx
Horizontal Rx
Field Direction
+45
Surface
+80
Depth
Direction to
eddy current
Position of Eddy Current



Location of the Current Path in the Conductor



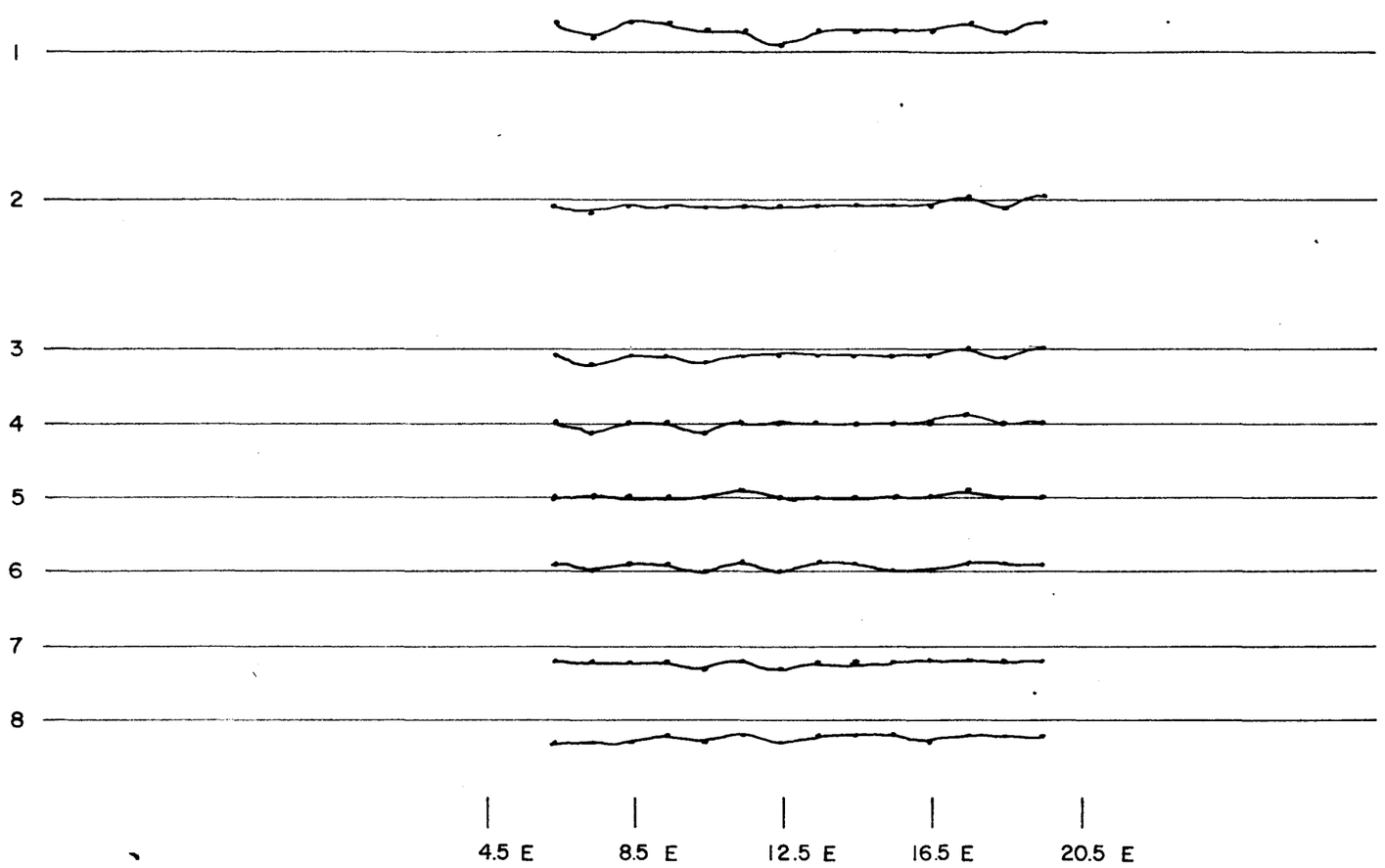
To Accompany Geophysical Report on
WATSON LAKE MINING DIVISION
Date _____
By GLEN E WHITE - B Sc _____ GEOPHYSICIST

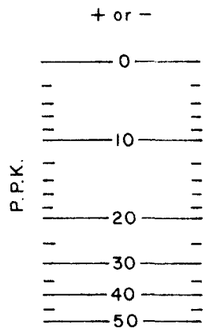
NEW FRONTIER EXPLORATION INC.
BARB CLAIMS
WATSON LAKE MINING DIVISION YUKON

VEM LOOP & CONDUCTOR MAP

Glen E. White
geophysical consulting
& services ltd.

INTERPRETED BY:	G.E.W.
DRAWN BY:	P.M.
CHECKED BY:	
DATE:	MARCH, 1978
FIG No.:	1





Scale

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

FEET

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

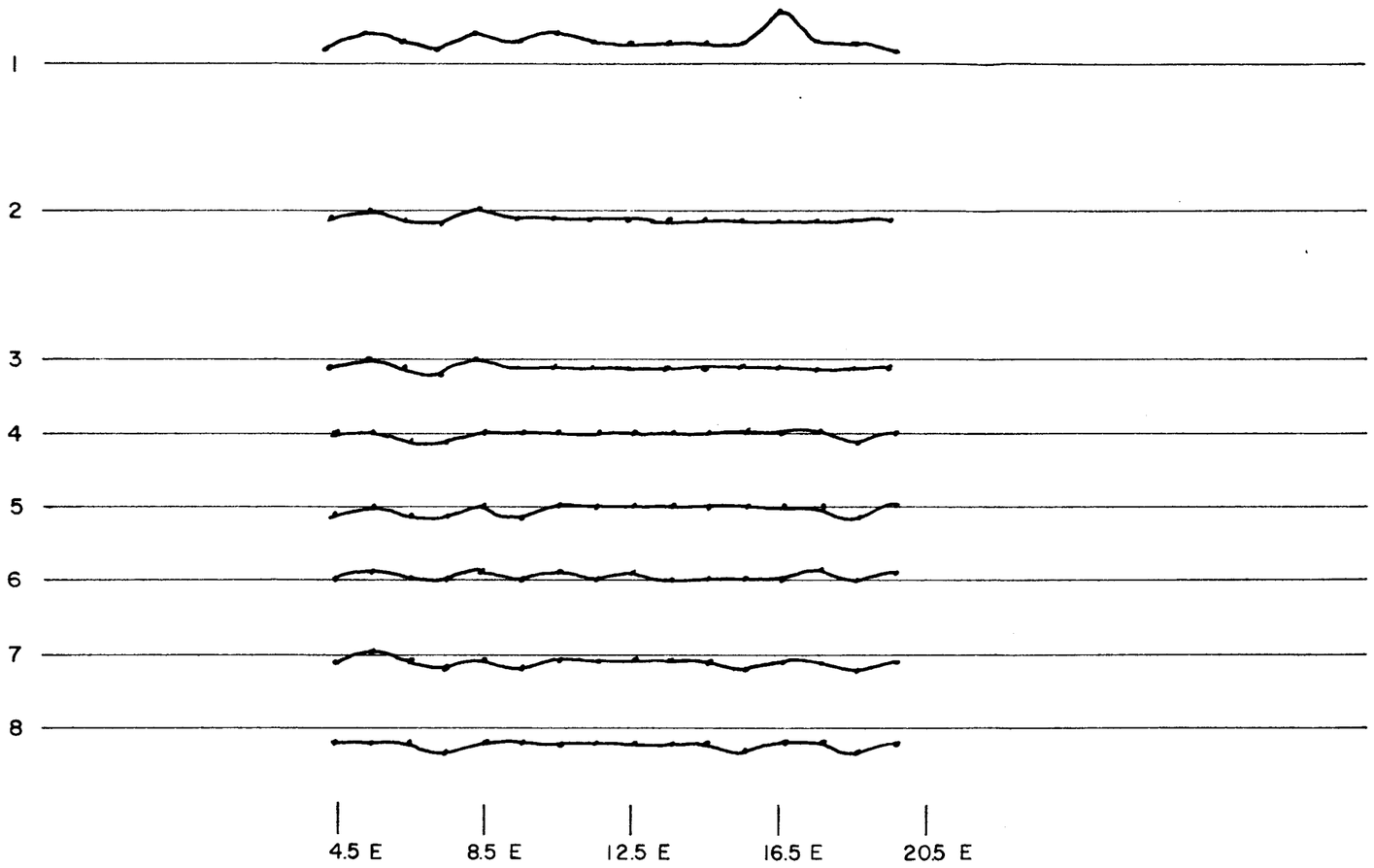
WATSON LAKE MINING DIVISION

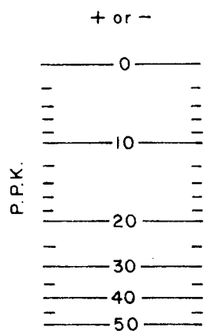
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 4N

Glen E. White geophysical consulting services ltd.

INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE :	
FIG. No : 2	





Scale

INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

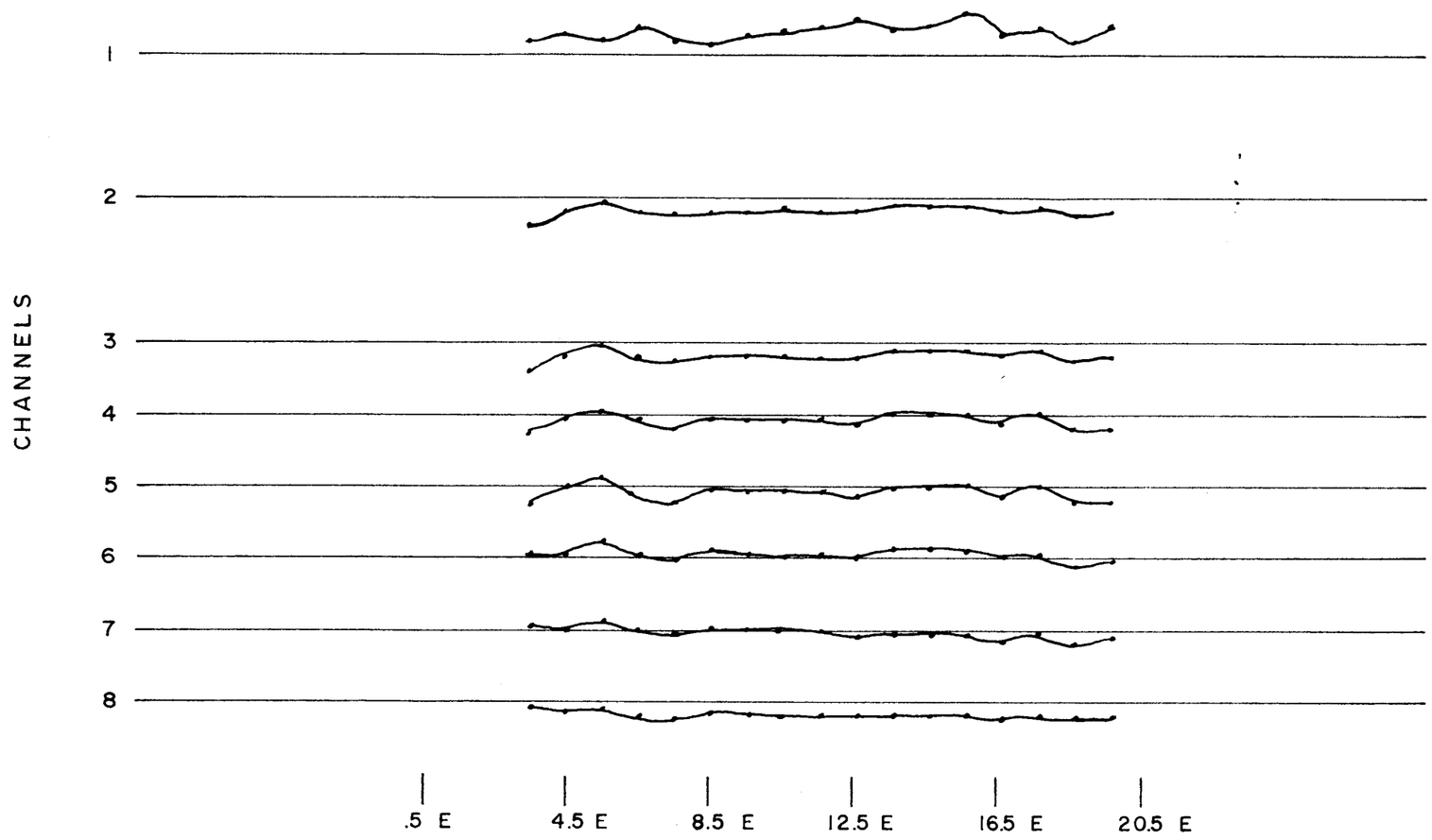
WATSON LAKE MINING DIVISION

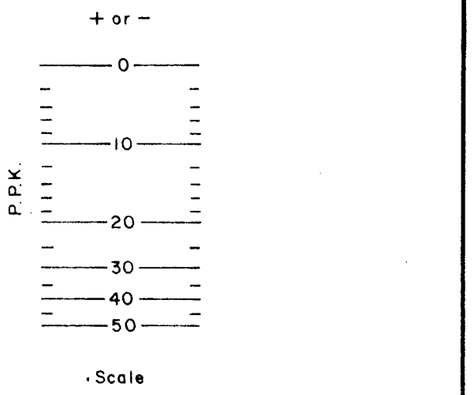
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 2N

Glen E. White
geophysical consulting
&
services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG. No. : 3





INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

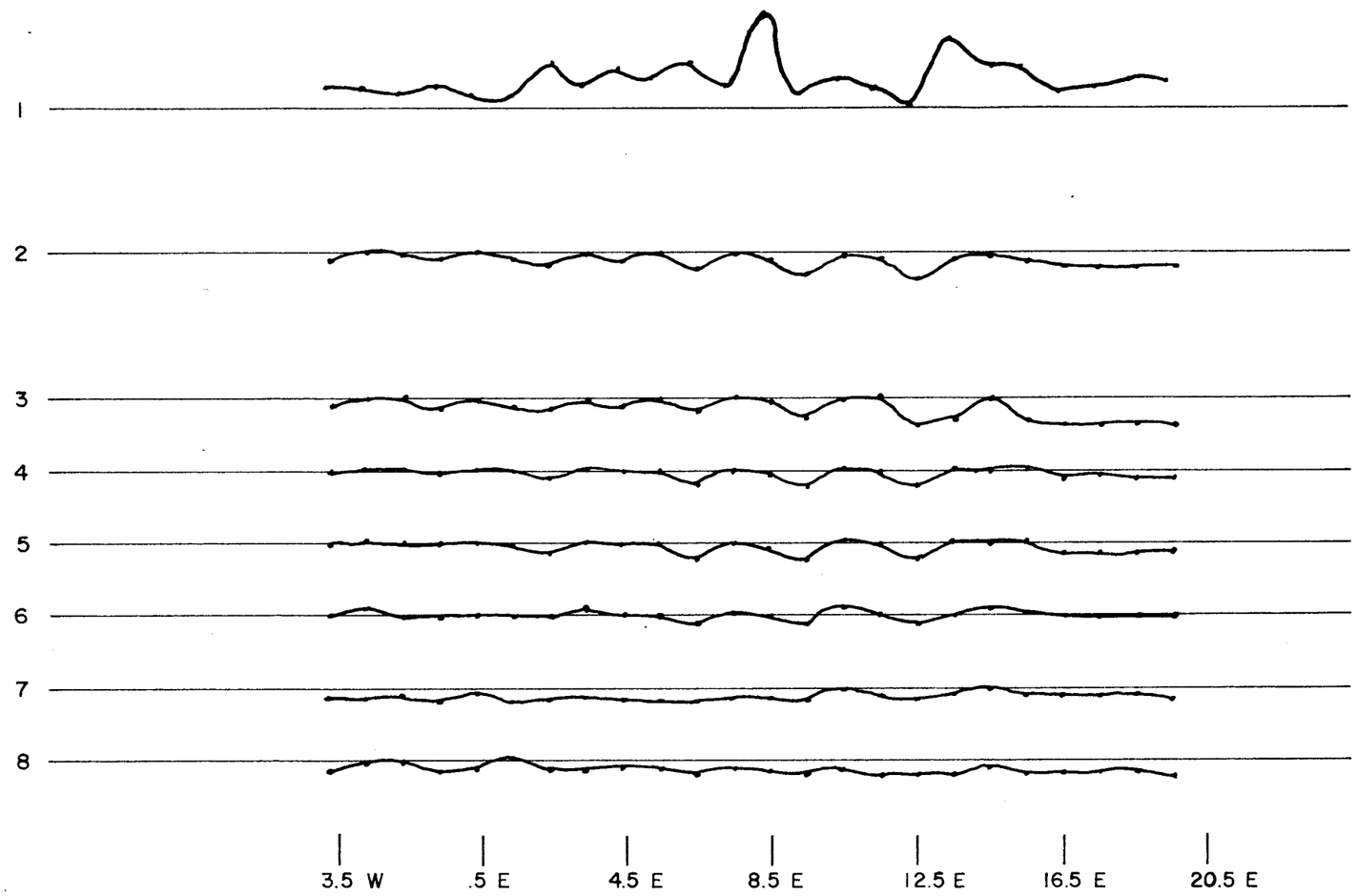
WATSON LAKE MINING DIVISION

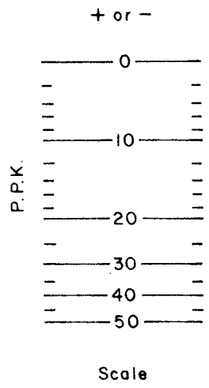
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 0

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG. No. : 4





INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600
FEET

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

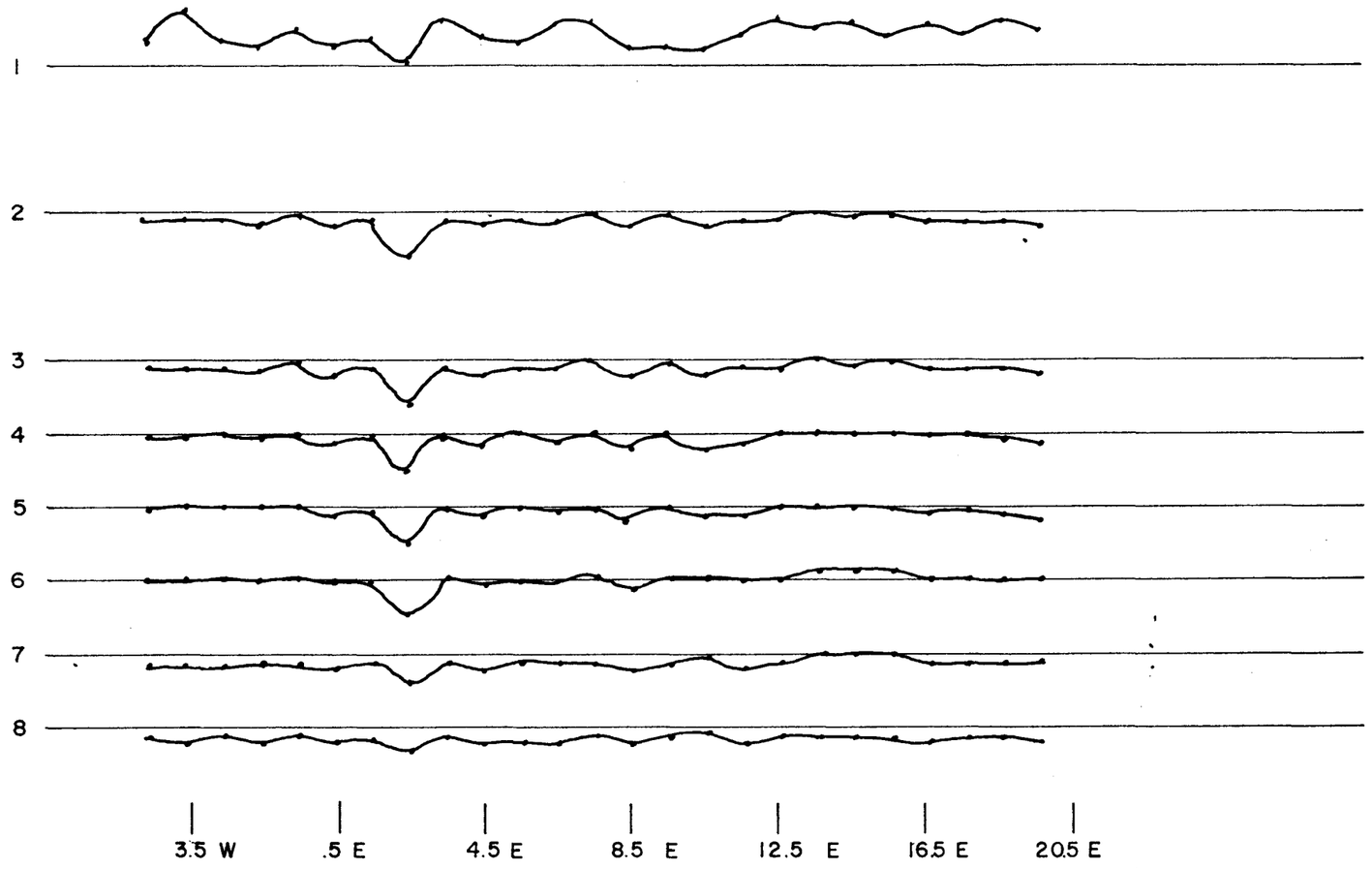
BARB MINERAL CLAIMS

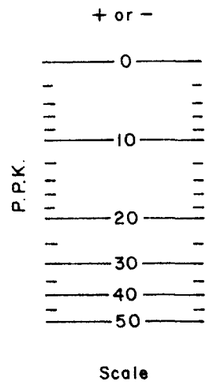
PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.

LINE 2S

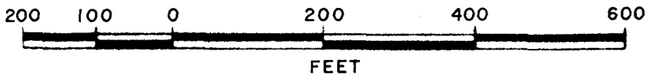
Glen E. White
geophysical consulting & services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG. No : 5





INSTRUMENT : CRONE P.E.M.



N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

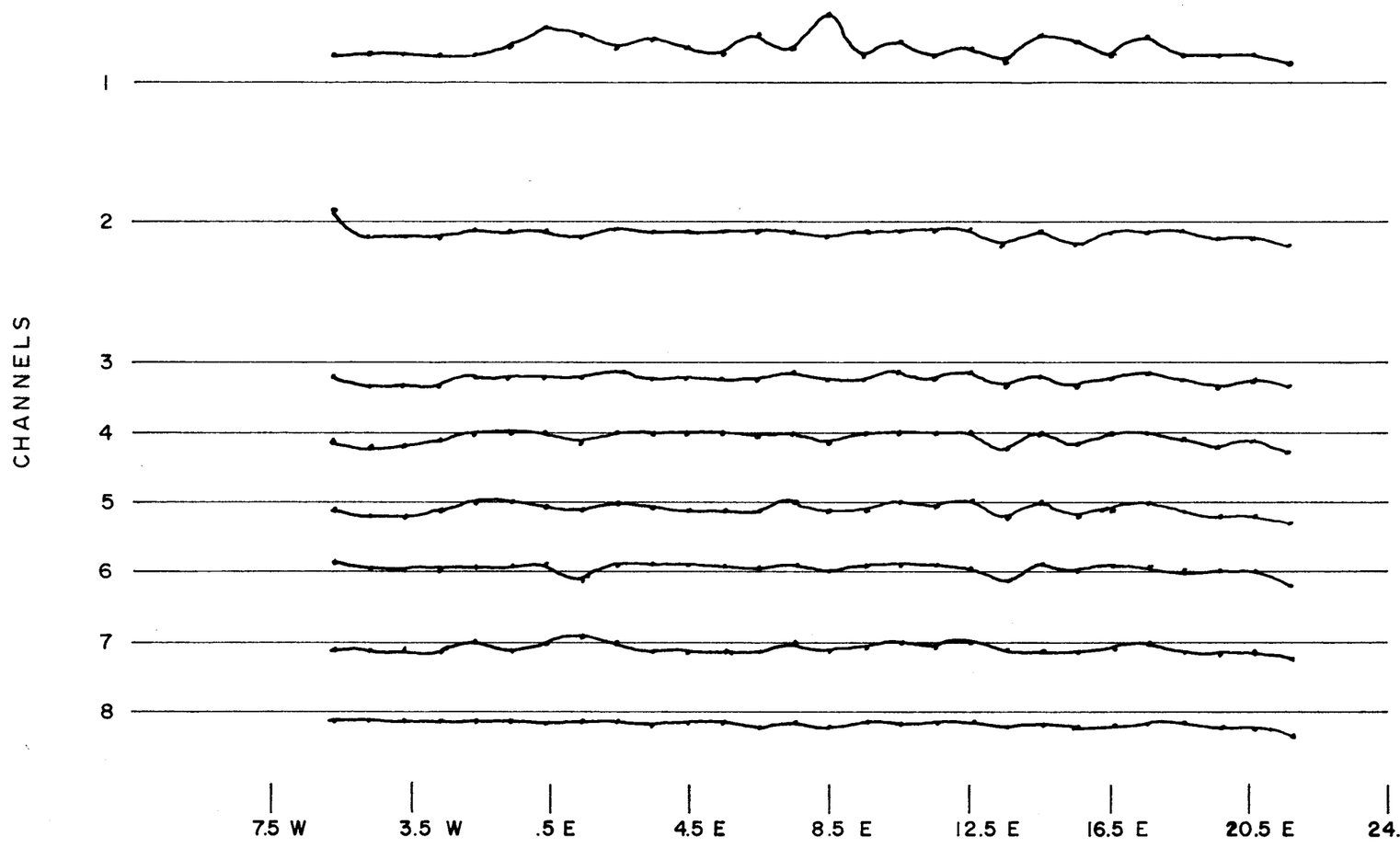
BARB MINERAL CLAIMS

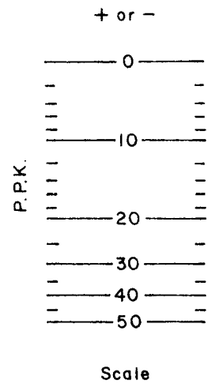
PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.

LINE 4S

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG. No.: 6





INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600
FEET

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE · B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

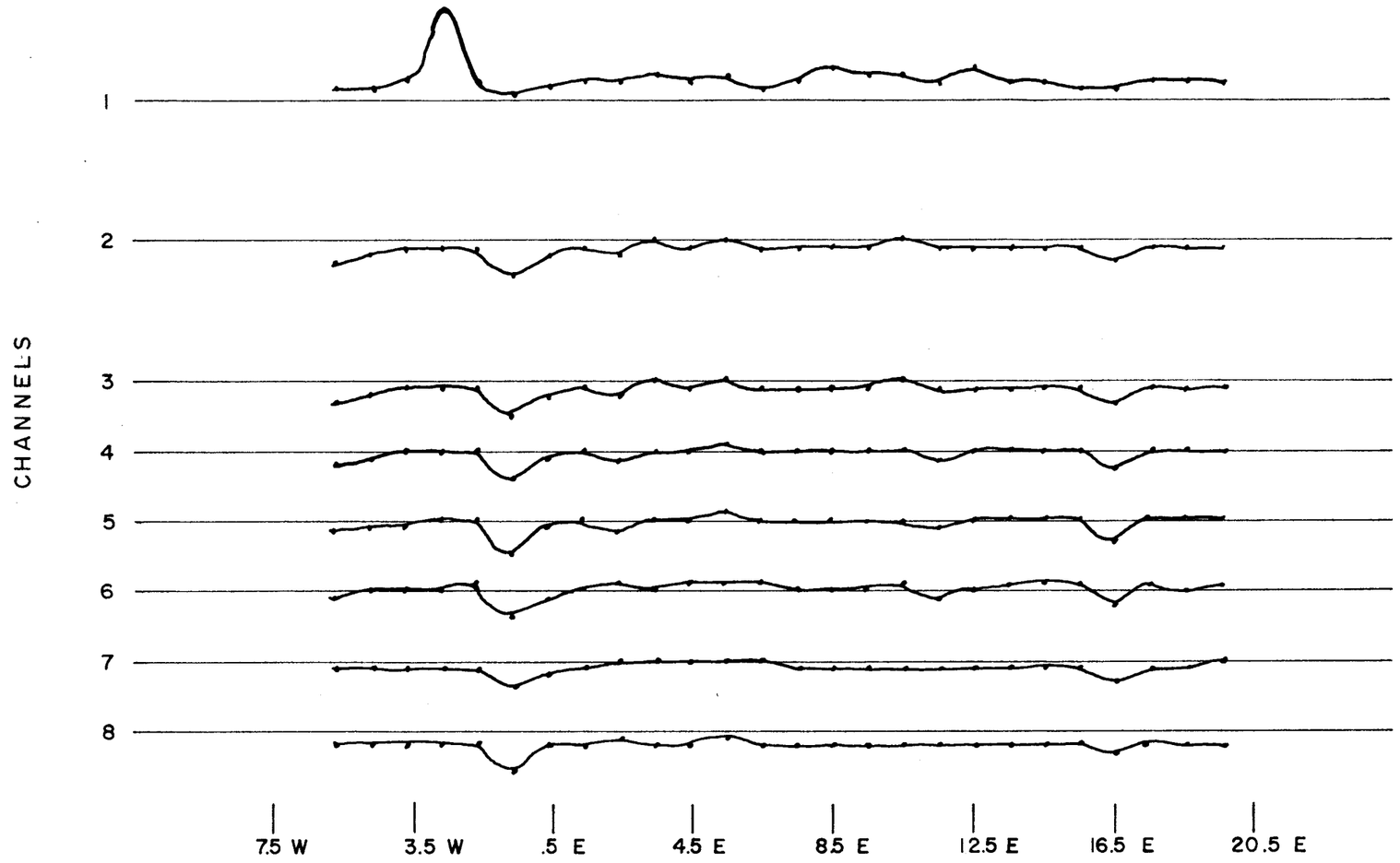
WATSON LAKE MINING DIVISION

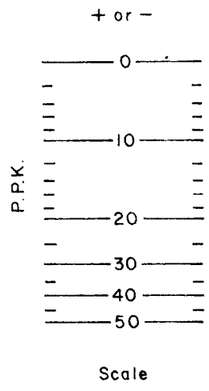
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 6S

Glen E. White
geophysical consulting & services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG. No : 7





INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

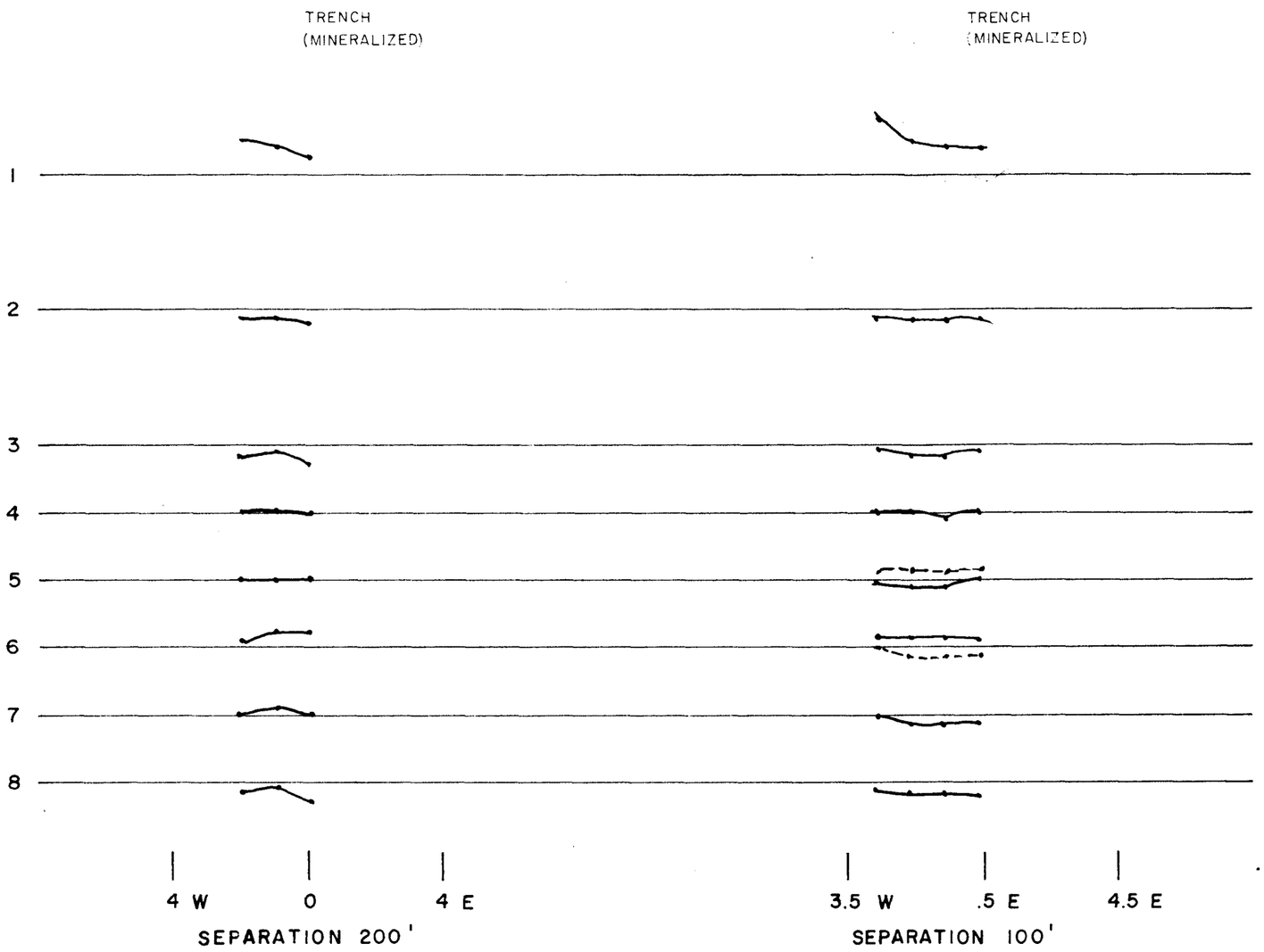
WATSON LAKE MINING DIVISION

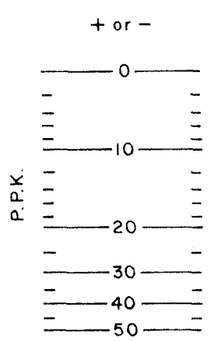
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 8S

Glen E. White
geophysical consulting
services ltd.

INTERPRETED BY :	G.E.W.
DRAWN BY :	T.M.
CHECKED BY :	
DATE :	
FIG. No :	8





INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

FEET

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

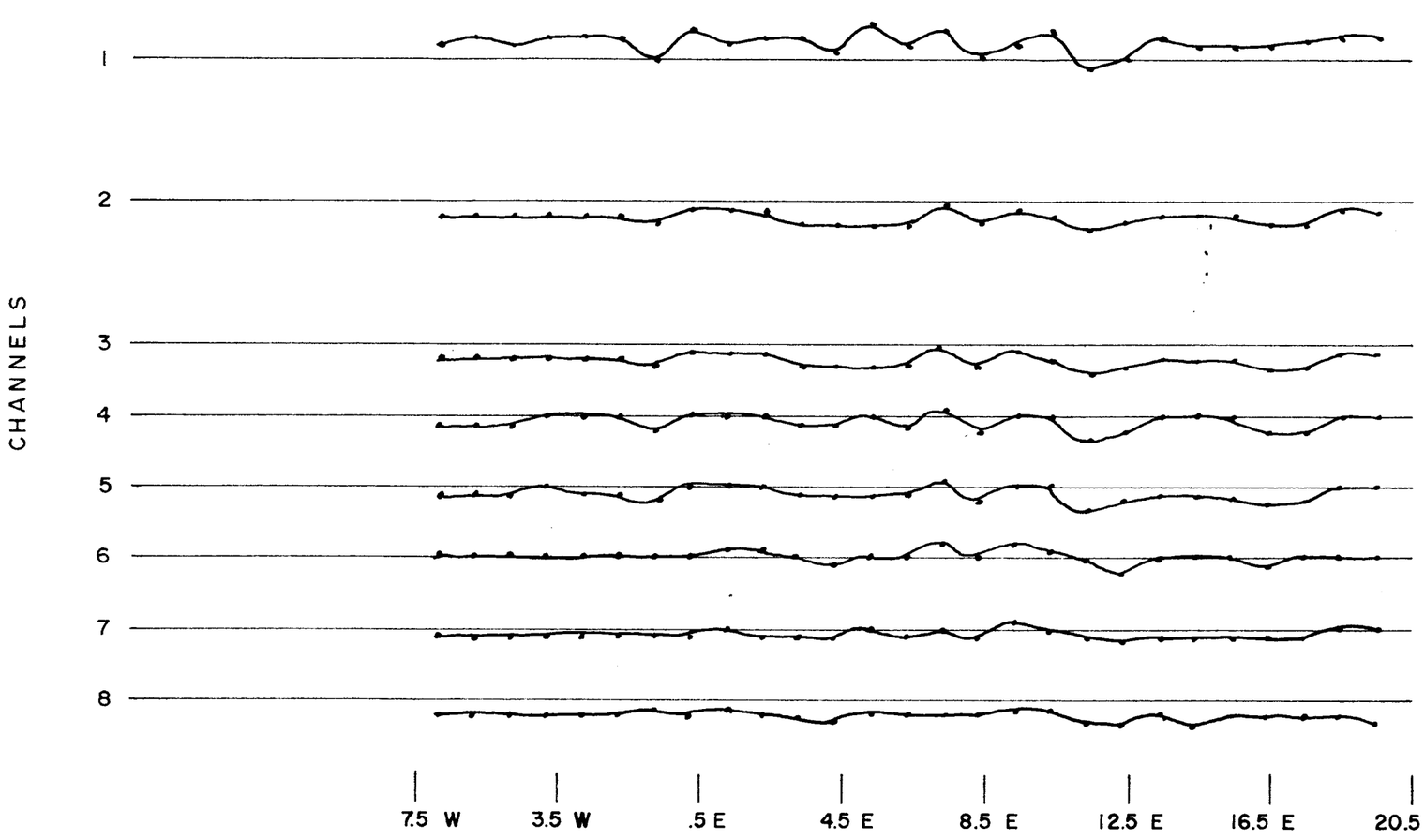
WATSON LAKE MINING DIVISION

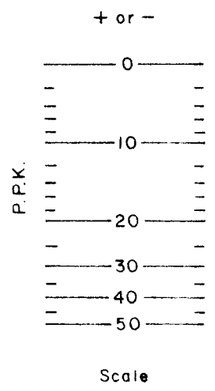
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 9+50 S

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG No : 9





Scale

INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE : B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

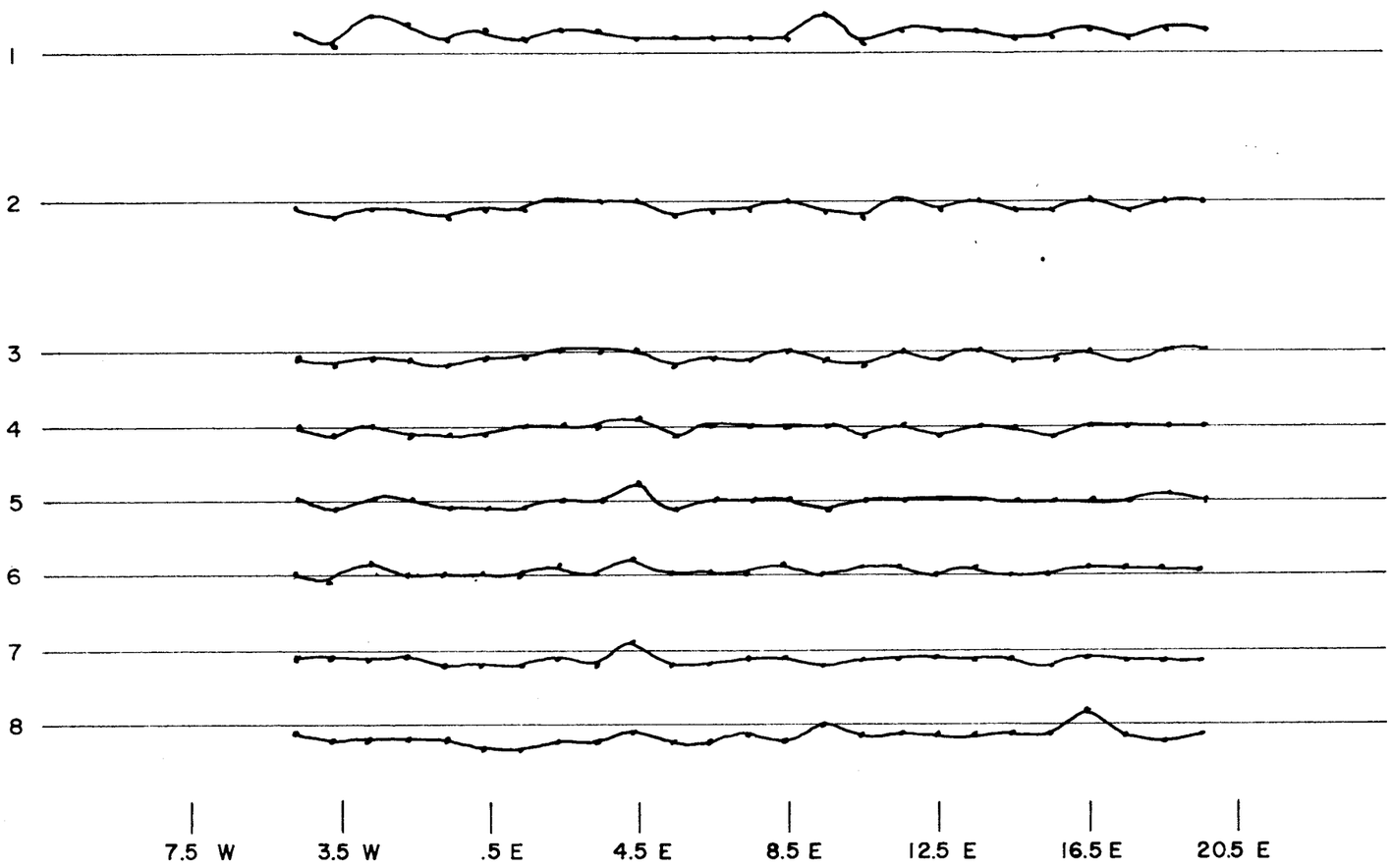
WATSON LAKE MINING DIVISION

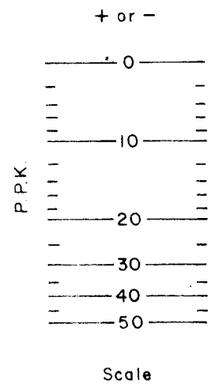
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 10S

Glen E. White
geophysical consulting
&
services ltd.

INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE :	
FIG No :	10





INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

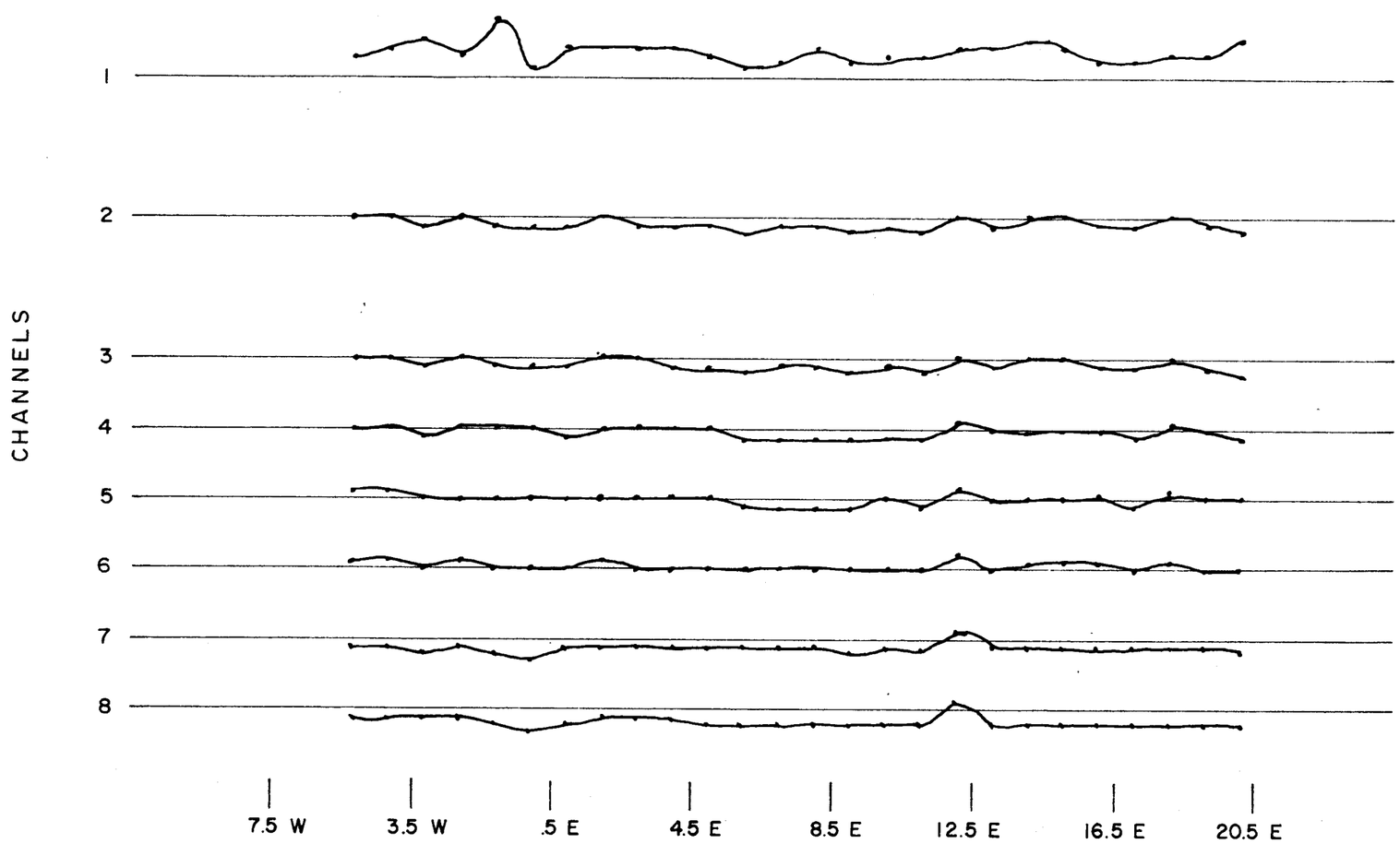
WATSON LAKE MINING DIVISION

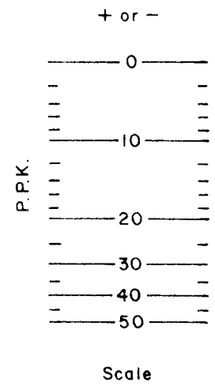
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 12 S

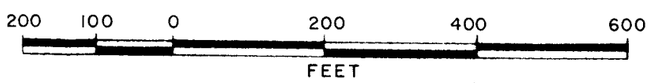
Glen E. White
geophysical consulting
&
services ltd.

INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE :	
FIG. No : 11	





INSTRUMENT : CRONE P.E.M.



N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

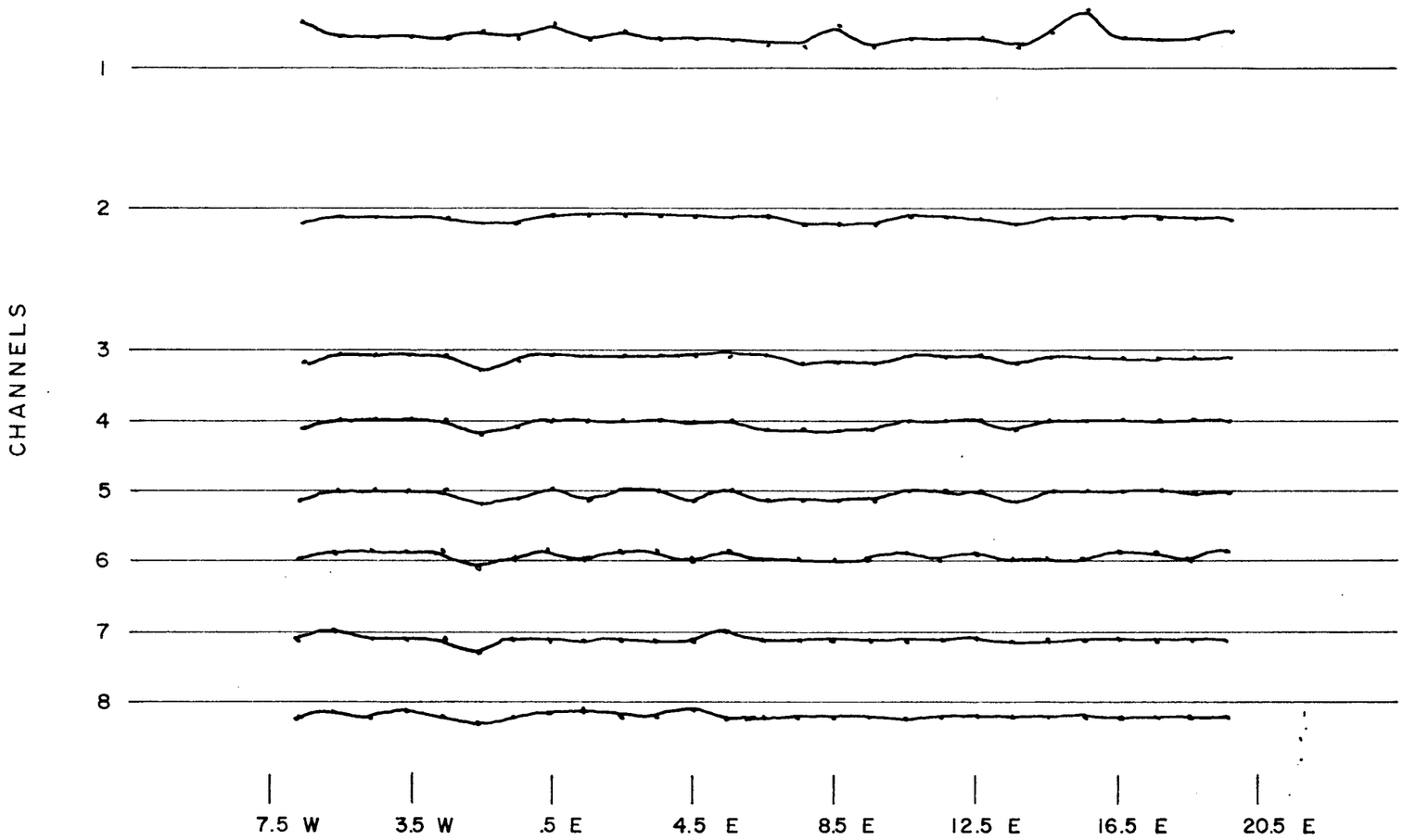
BARB MINERAL CLAIMS

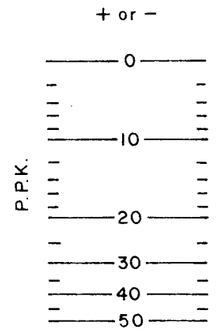
PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.

LINE 14 S

Glen E. White
geophysical consulting
& services ltd.

INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE :	
FIG. No. : 12	





INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

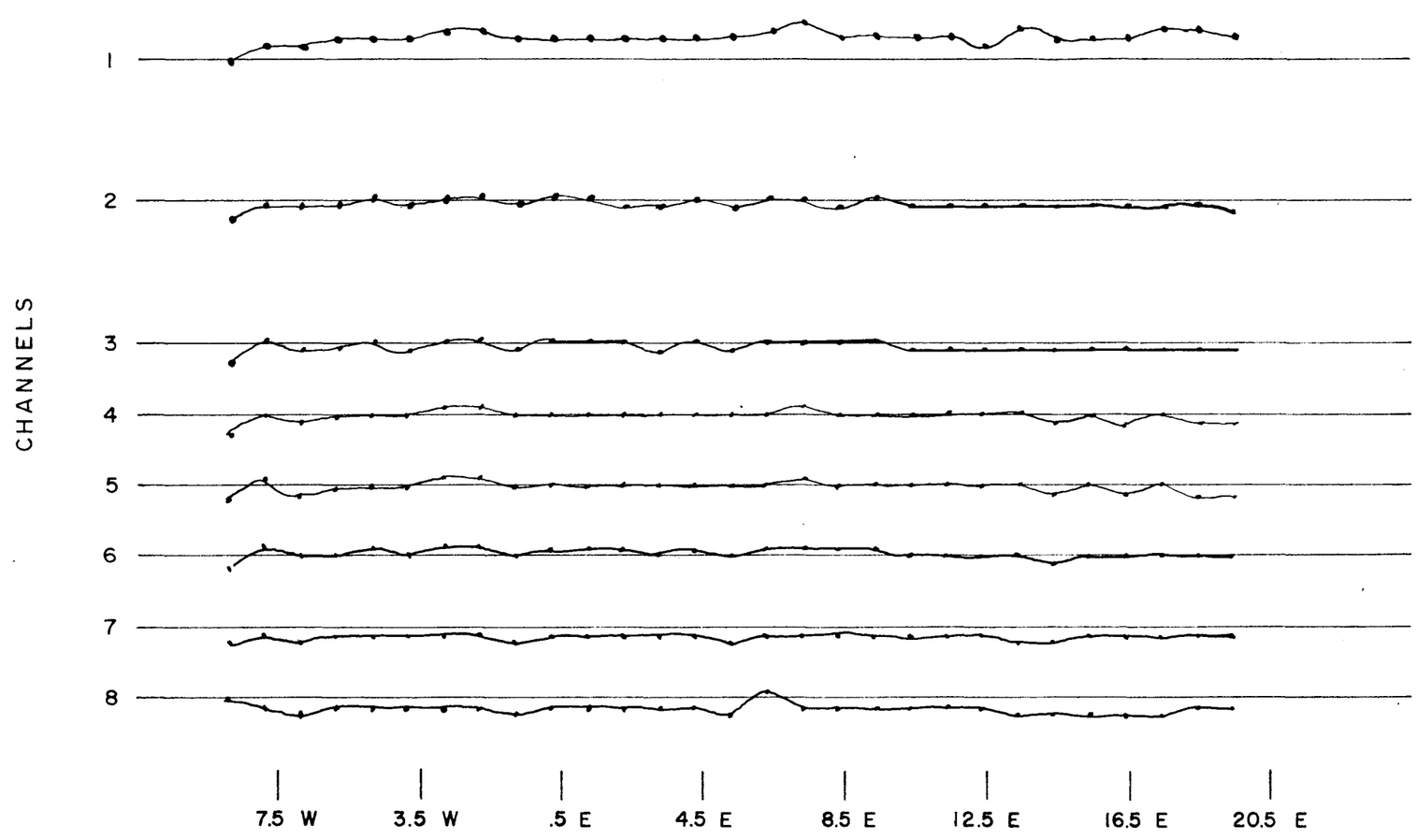
WATSON LAKE MINING DIVISION

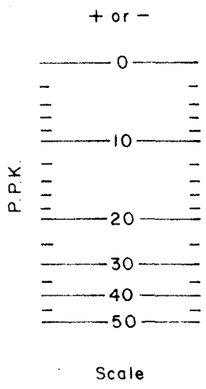
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 16S

Glen E. White
geophysical consulting
&
services ltd.

INTERPRETED BY :	G.E.W.
DRAWN BY :	T.M.
CHECKED BY :	
DATE :	
FIG No. :	13





INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC

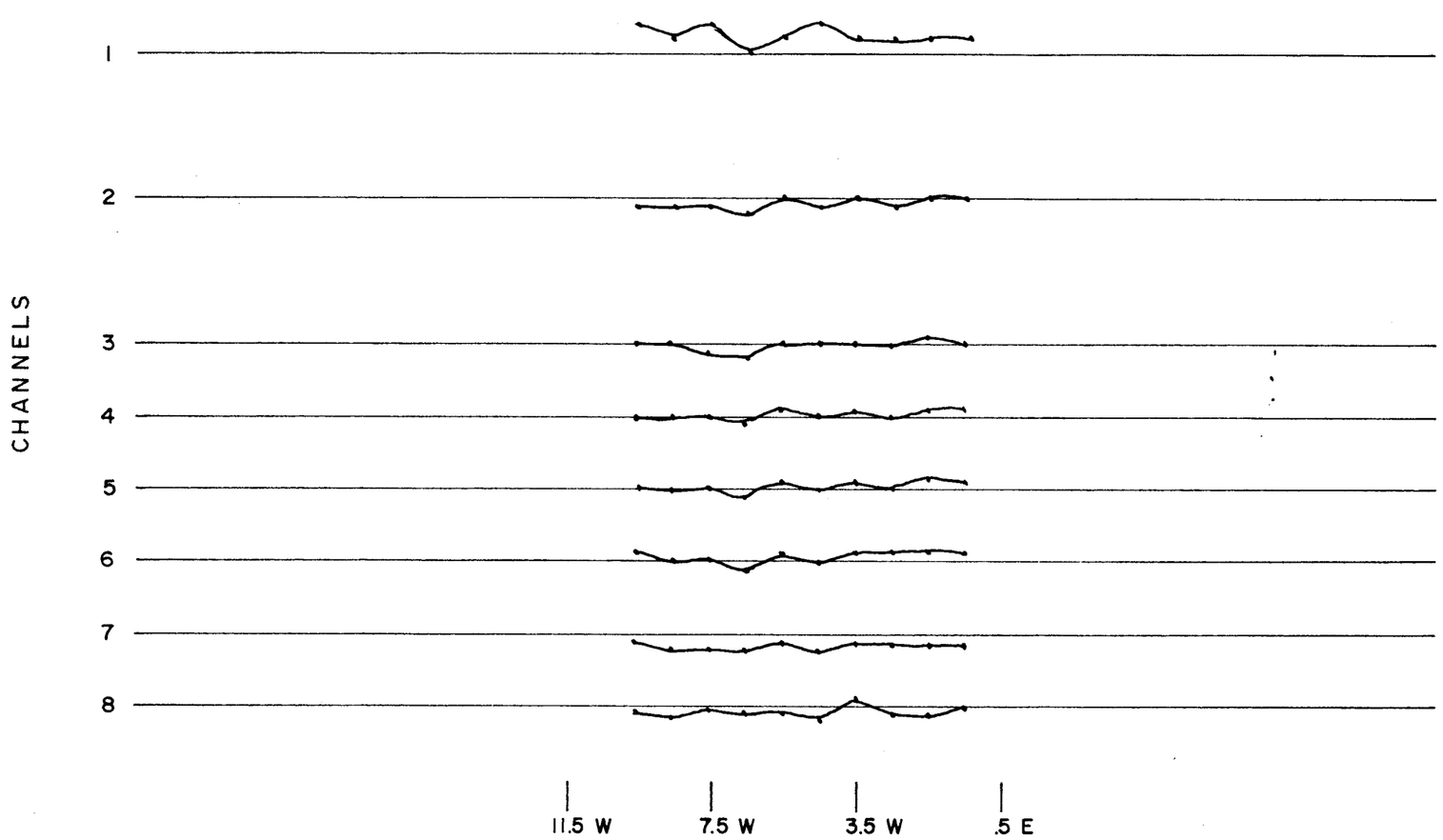
WATSON LAKE MINING DIVISION

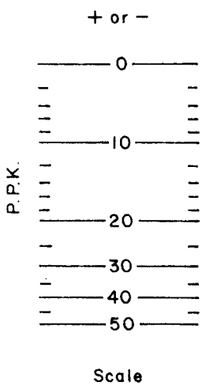
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 18 S

Glen E. White
geophysical consulting
&
services ltd.

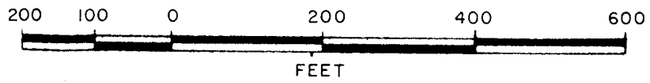
INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE :	
FIG No : 14	





Scale

INSTRUMENT : CRONE P.E.M.



N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

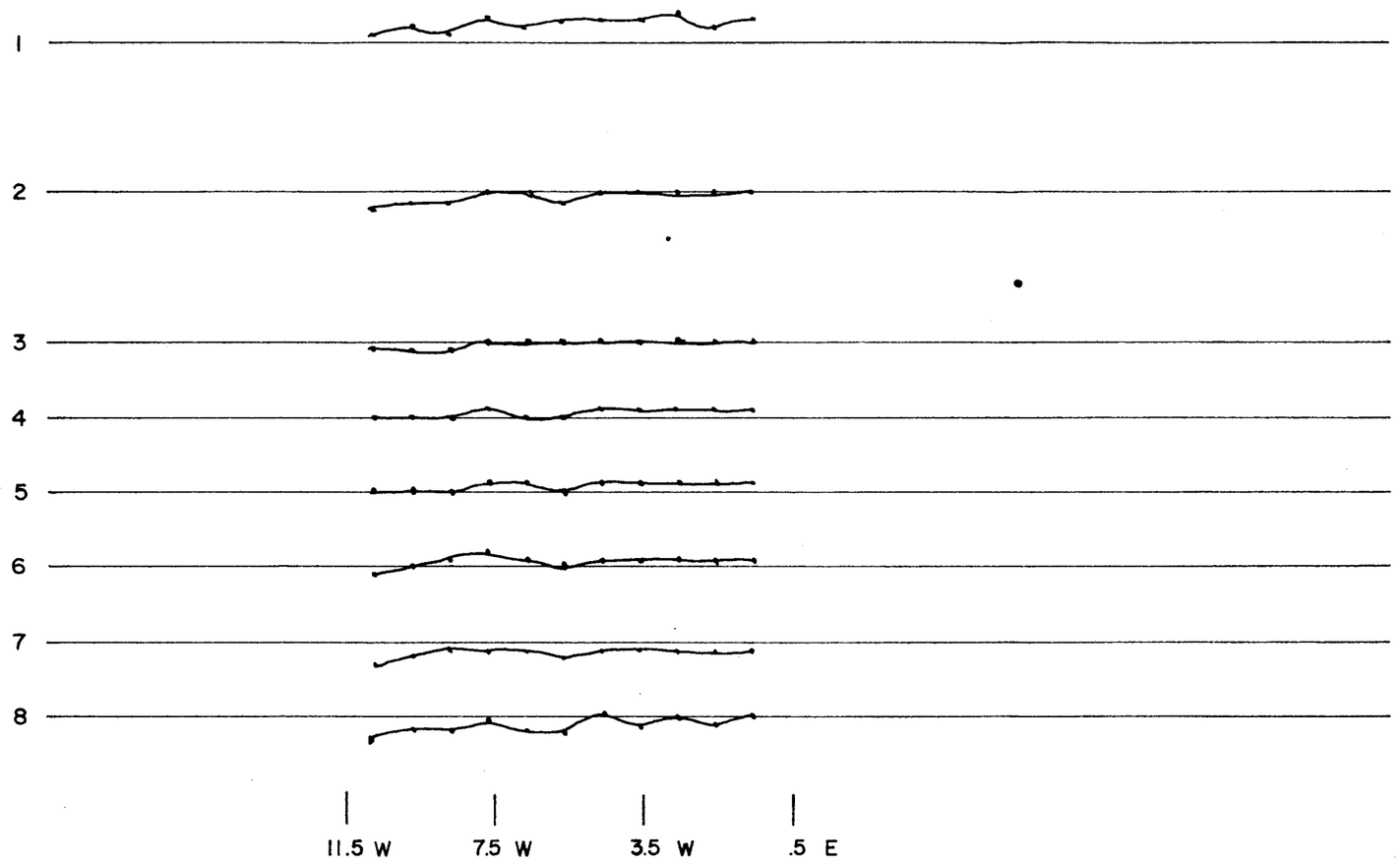
WATSON LAKE MINING DIVISION

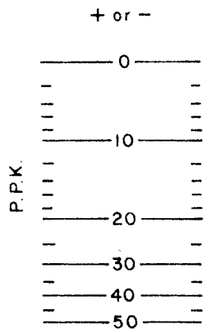
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 20 S

Glen E. White
geophysical consulting
services ltd.

INTERPRETED BY :	G.E.W.
DRAWN BY :	T.M.
CHECKED BY :	
DATE :	
FIG. No. :	15





Scale

INSTRUMENT : CRONE P.E.M.

N.T.S.

To Accompany Geophysical Report on

Date _____

By GLEN E WHITE - B Sc _____ GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

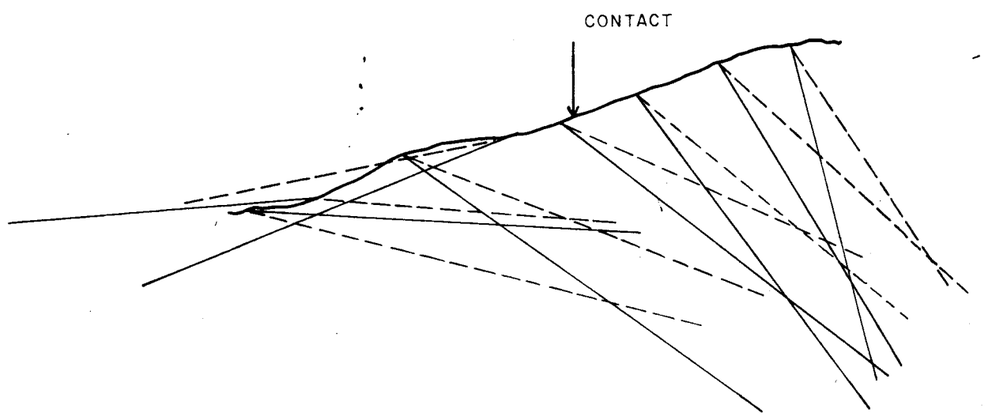
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
SEPARATION 100 FT.
LINE 22 S

Glen E. White
geophysical consulting
services ltd.

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE :
FIG No. : 16

12 E 14 E 16 E 18 E 20 E



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

LOOP B

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PE M

Feet

N.T.S. 105 H/6

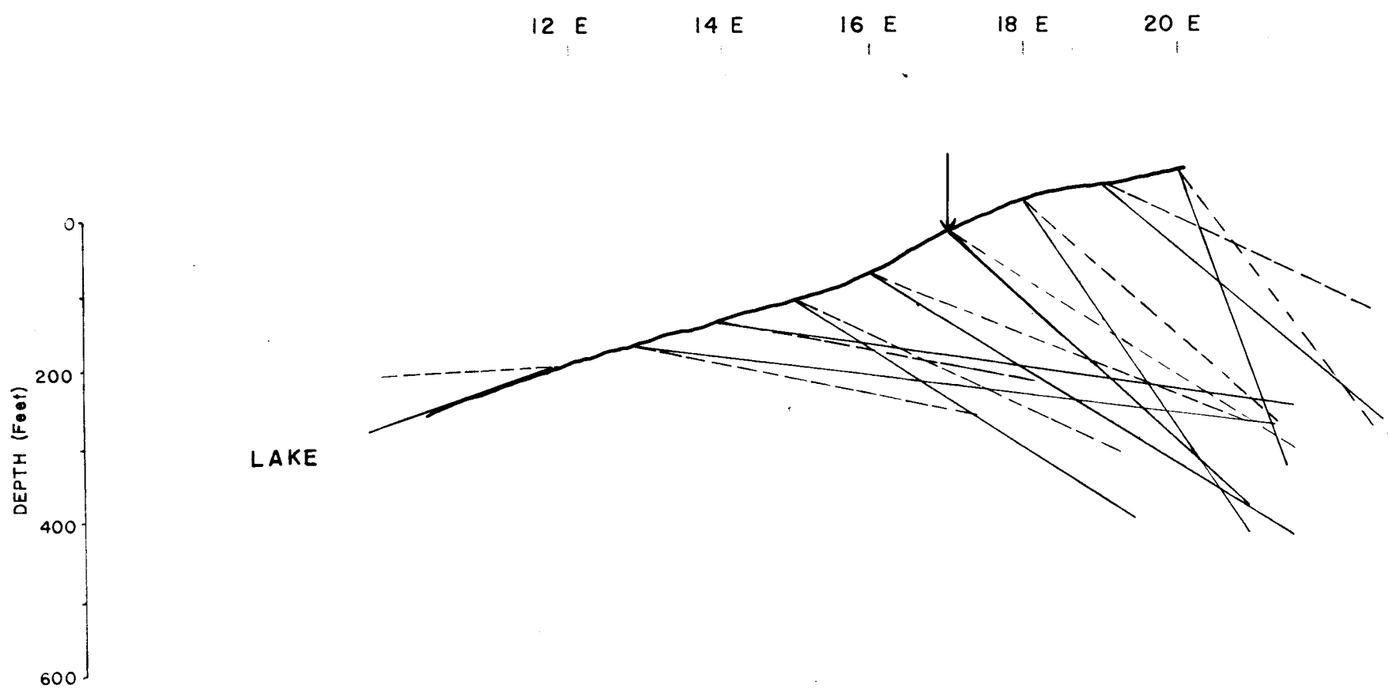
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 14 N

Geophysical Consulting	INTERPRETED BY G E W
	DRAWN BY T M
	CHECKED BY
	DATE MARCH, 1978
	FIG No 17



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

LOOP B

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PEM

400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

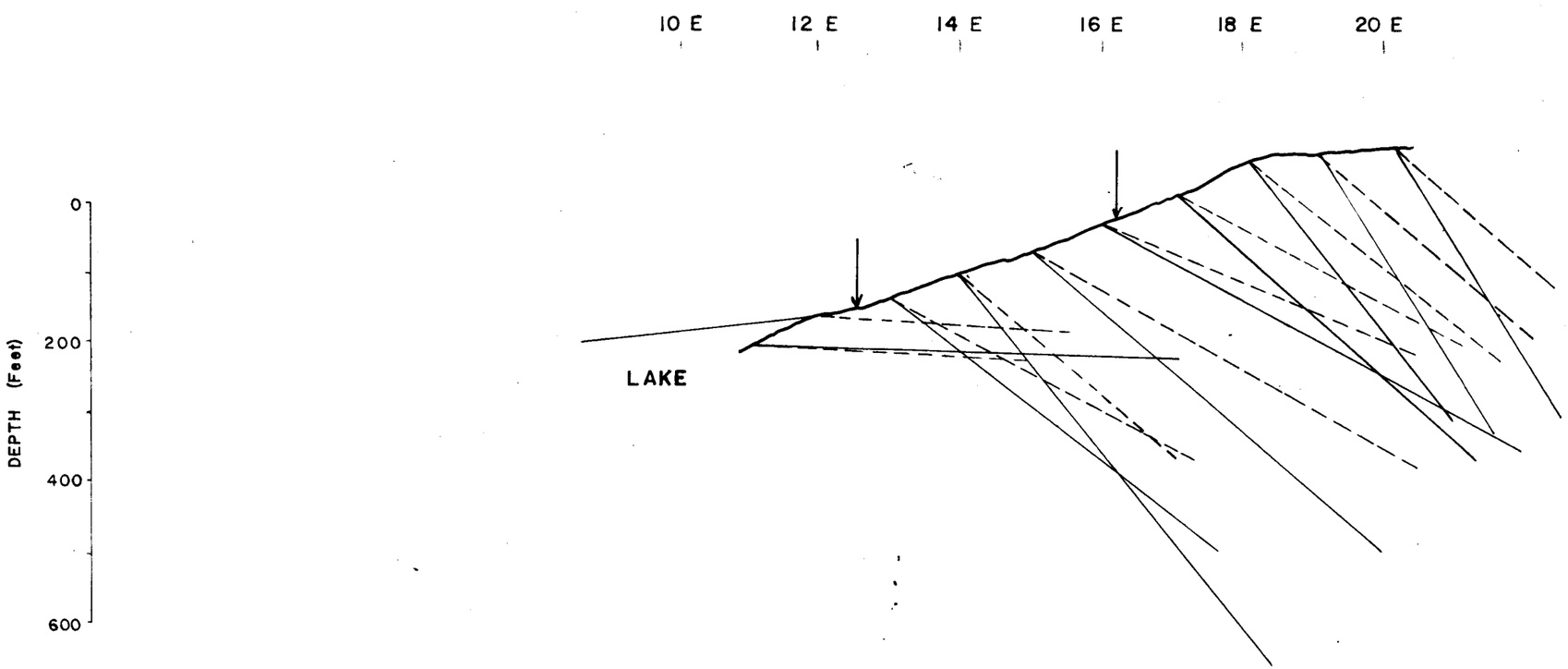
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 12 N

Gerald E. Walker
geophysical consulting
services ltd

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No: 18



LOOP B

-VECTORS-
CHANNEL 1 ——
CHANNEL 2 — —

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PEM

400 600
Feet

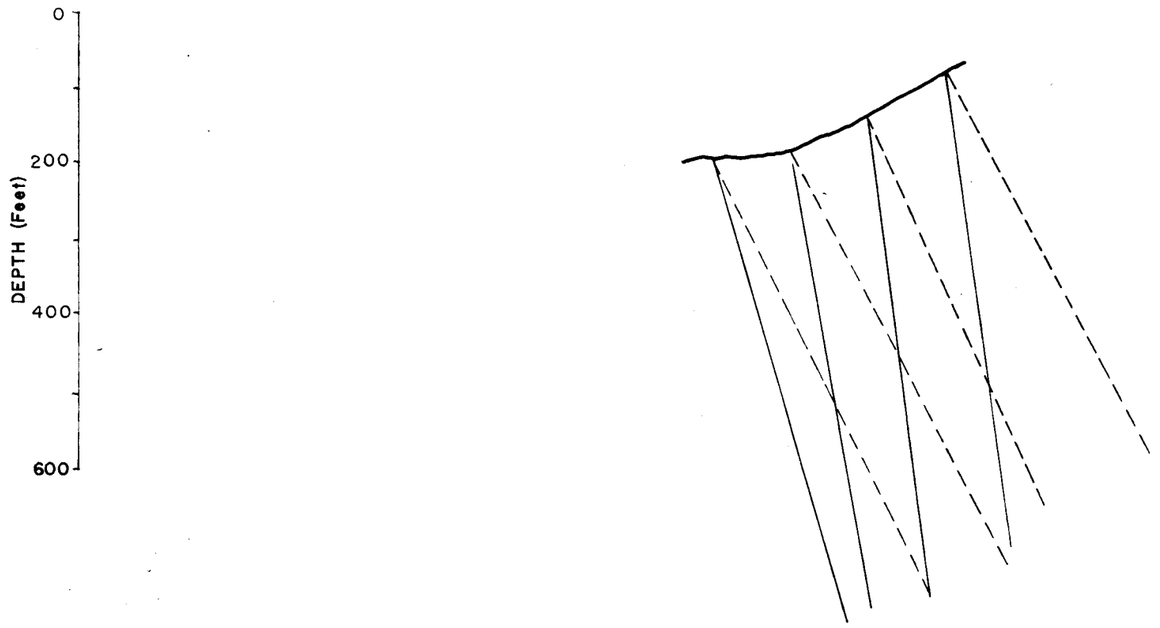
N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 10 N

	INTERPRETED BY G.E.W.
	DRAWN BY T.M.
	CHECKED BY
	DATE MARCH, 1978
	F.G. No. 19

9 E 11 E 13 E



LOOP A

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PEM

Feet

N.T.S. 105 H/6

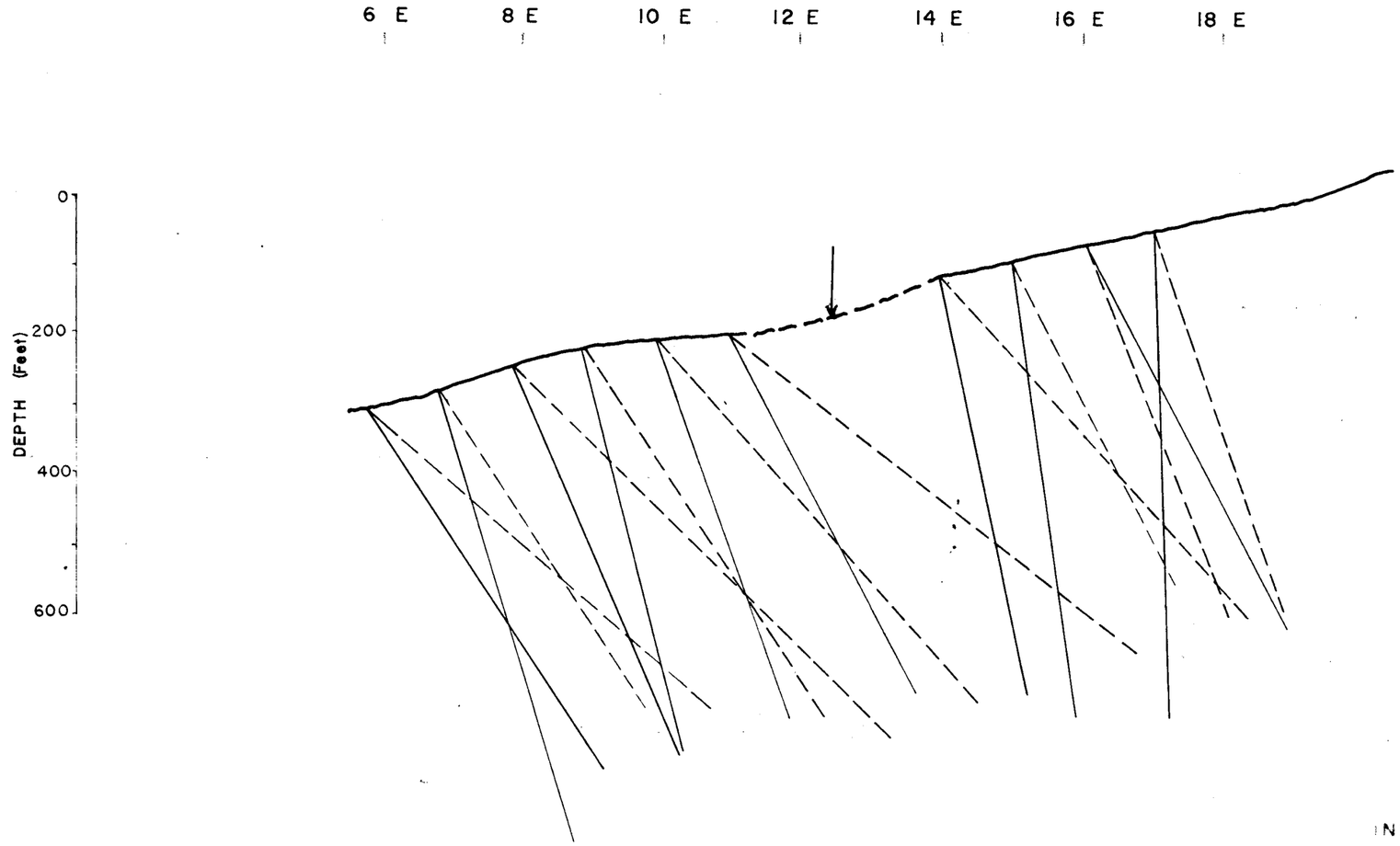
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 8 N

Grant Hall geophysical consulting ltd	INTERPRETED BY G.E.W.
	DRAWN BY T.M.
	CHECKED BY
	DATE MARCH, 1978
	FIG. No. 20



INSTRUMENT CRONE PE M

400 600

Feet

N.T.S. 105 H/6.

LOOP A

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

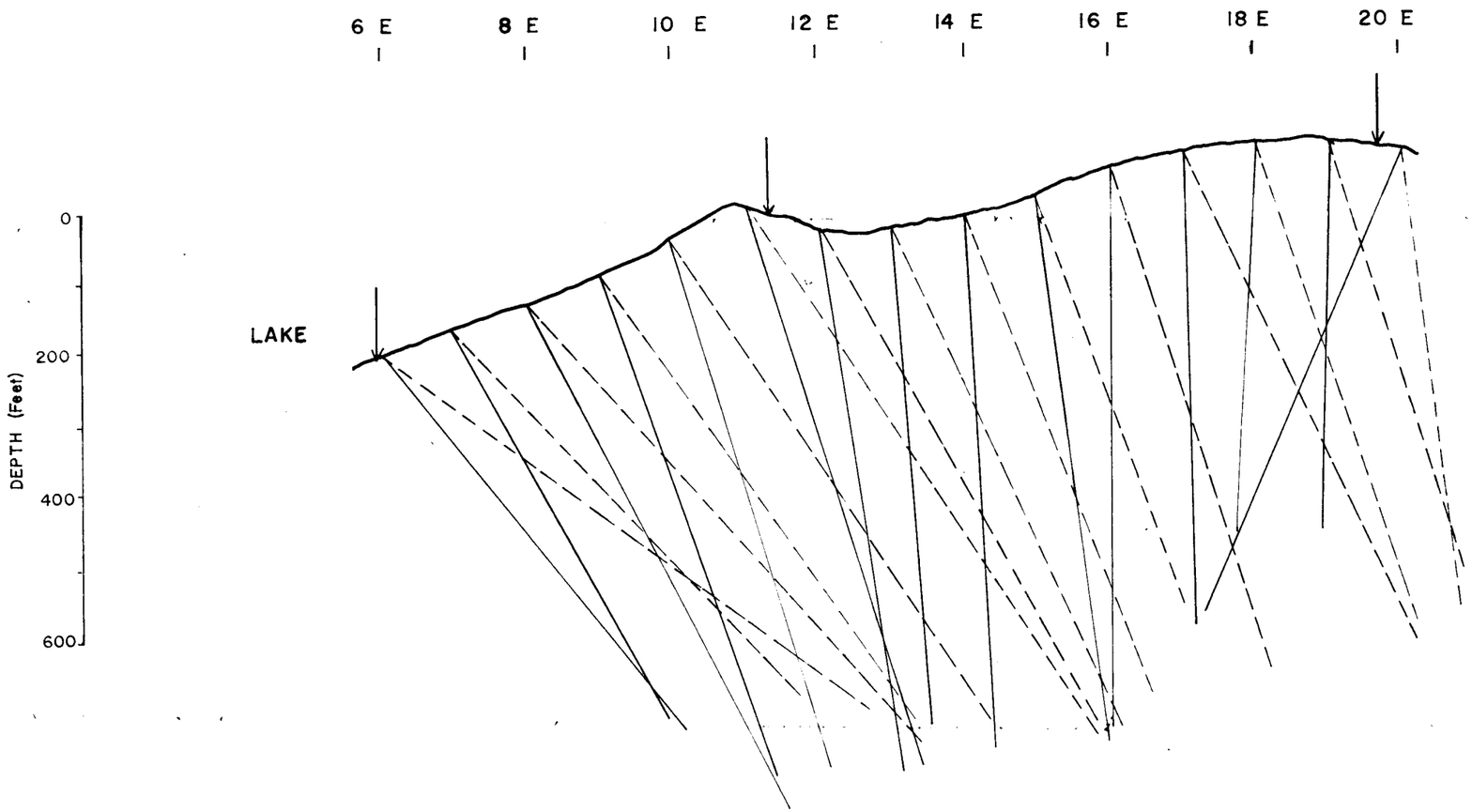
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 6 N

Grant Mack
geophysical consulting
Vancouver B.C.

INTERPRETED BY G.E.W.
DRAWN BY T.M.
CHECKED BY
DATE MARCH, 1978
F.G. No. 21



INSTRUMENT CRONE PEM

0 400 600

Feet

N.T.S. 105 H/6

LOOP A

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

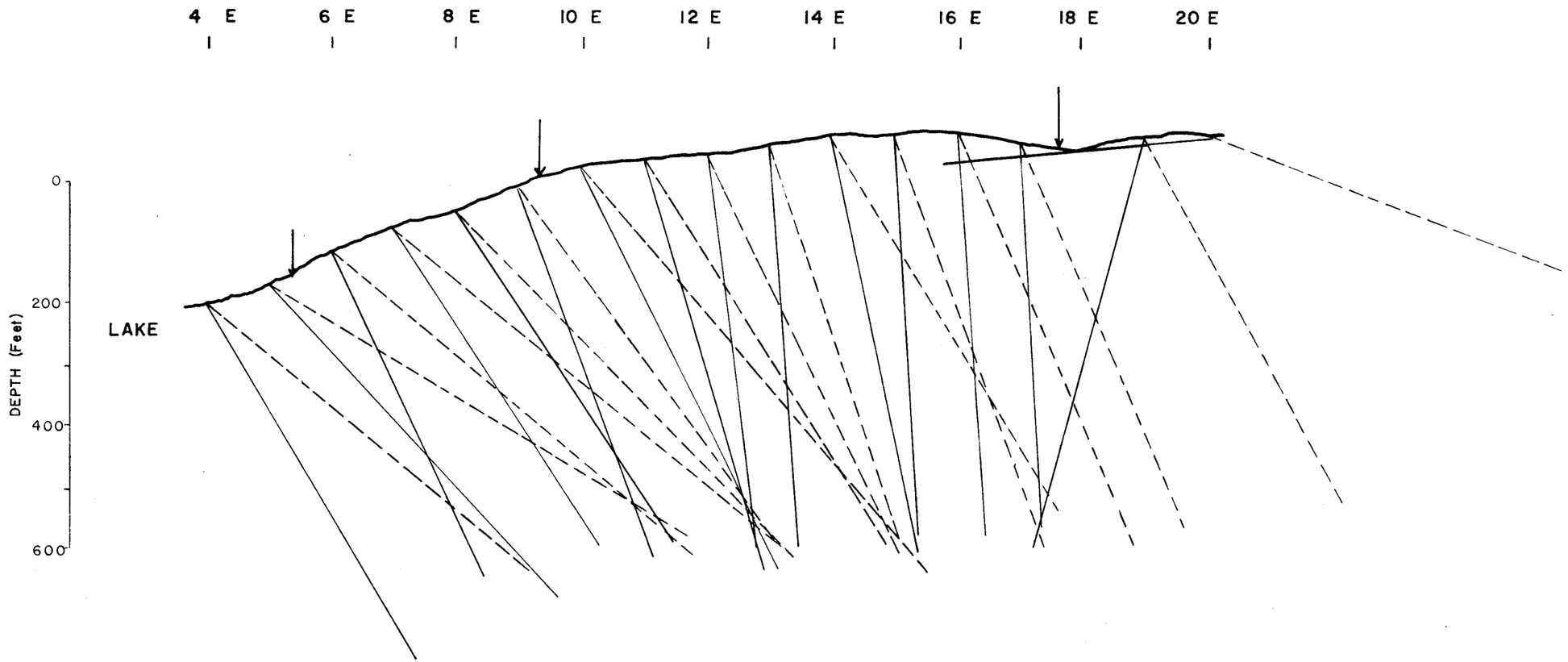
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 4 N

INTERPRETED BY G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE MARCH, 1978
FIG. No. 22



-VECTORS-
CHANNEL 1 ——
CHANNEL 2 — —

LOOP A

WATSON LAKE MINING DIVISION

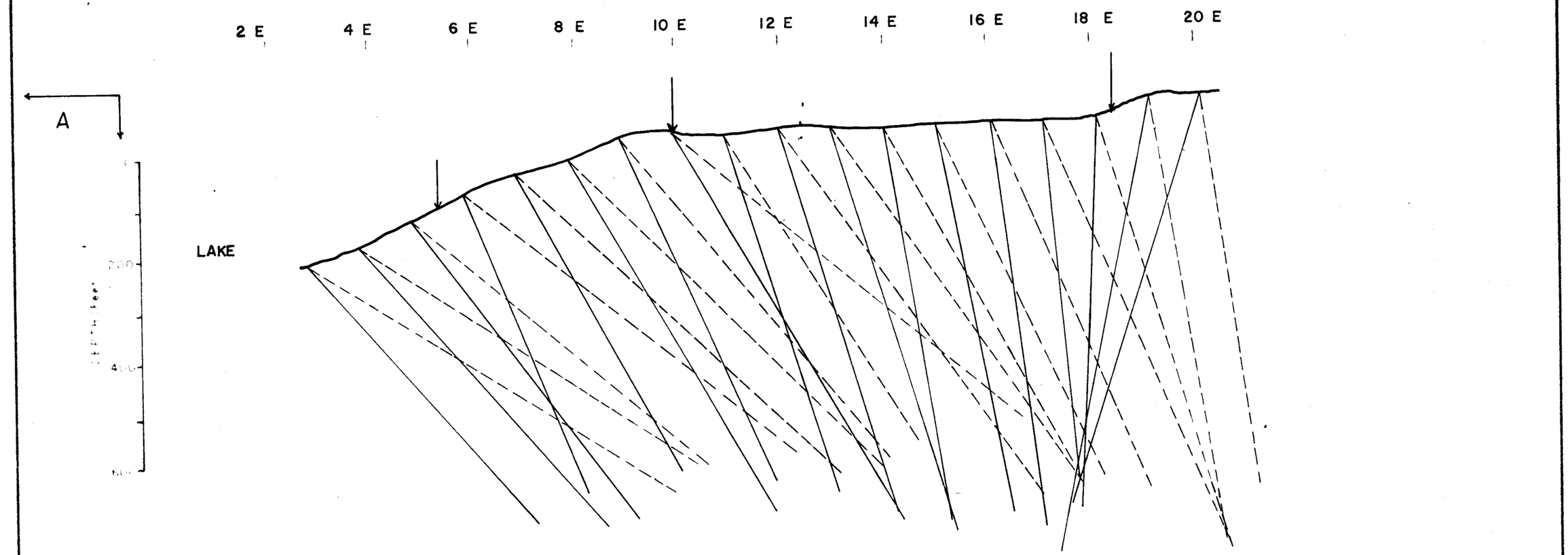
INSTRUMENT CRONE PEM

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 2 N

	INTERPRETED BY G.E.W.
	DRAWN BY T.M.
	RECEIVED BY
	DATE MARCH, 1978
	FIG. No. 23



INSTRUMENT CRONE PE M

100 50 0 200 400 600

Feet

N.T.S. 105 H/6

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

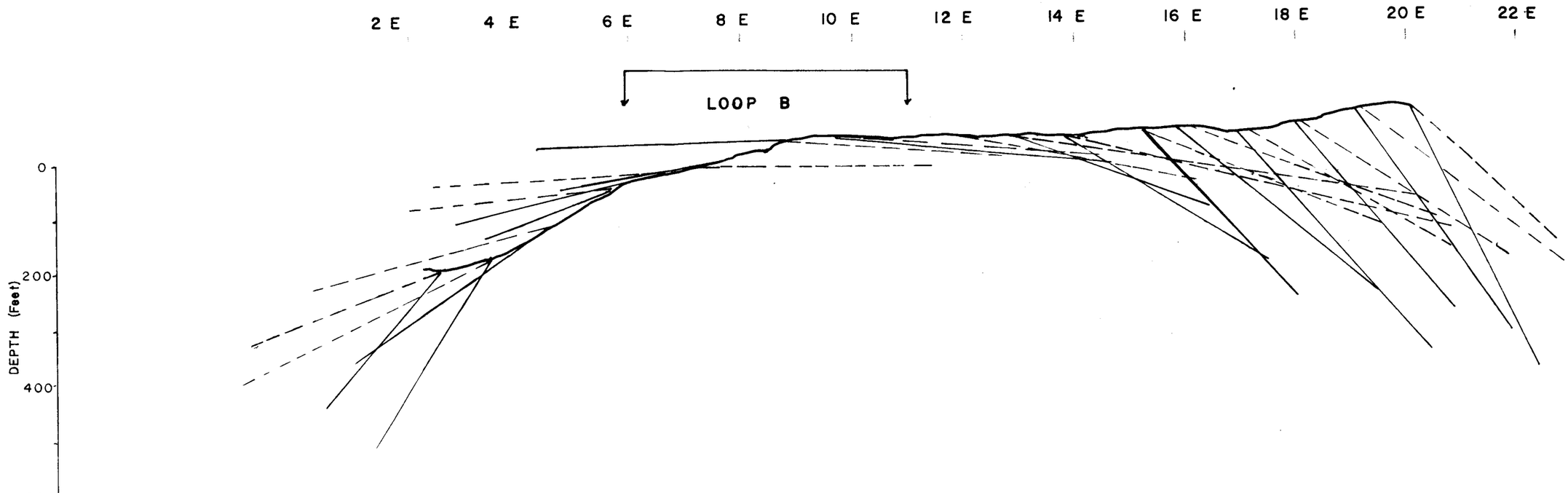
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 0

Crone Geophysics & Exploration Ltd.

INTERPRETED BY: G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE: MARCH, 1978
FIG No: 24



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PEM

400 600

(Feet)

N.T.S. 105 H/6

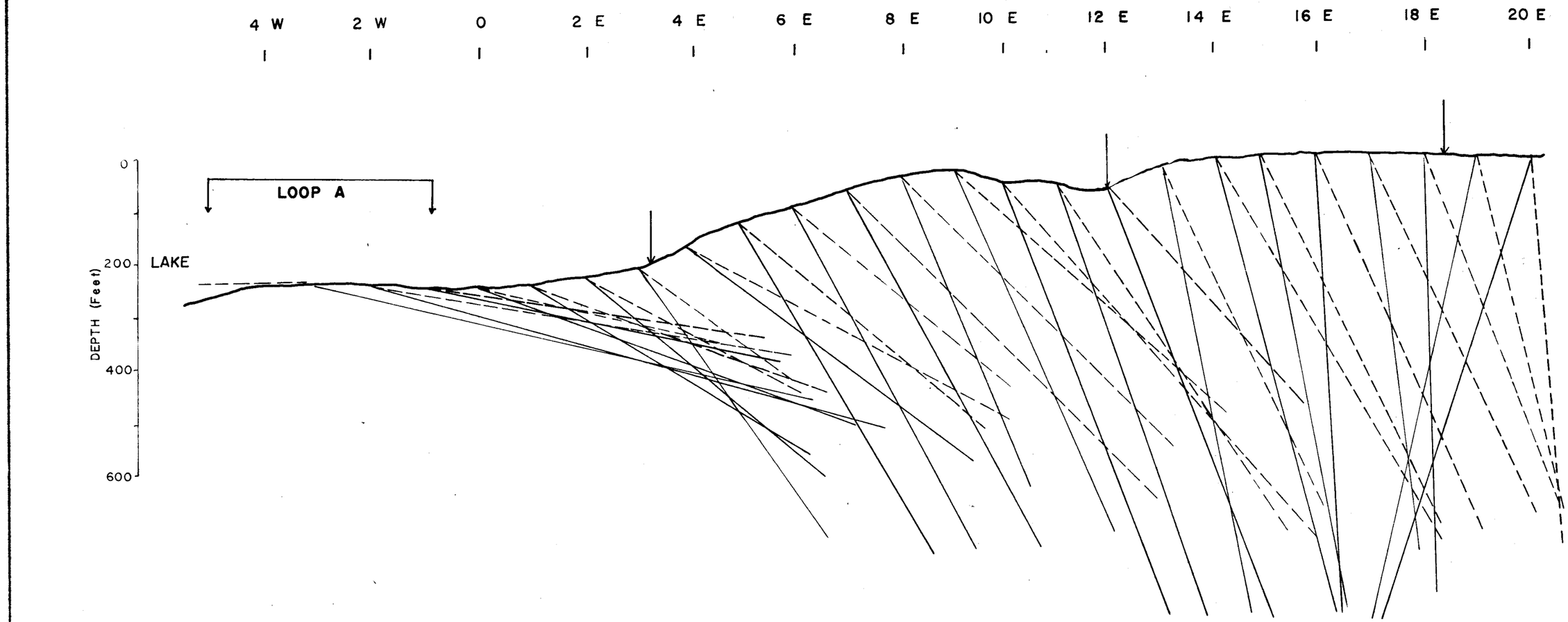
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 0

[illegible]	INTERPRETED BY G.E.W.
	DRAWN BY T.M.
	CHECKED BY
	DATE MARCH, 1978
	FIG. No. 25



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

N.T.S. 105 H/6

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

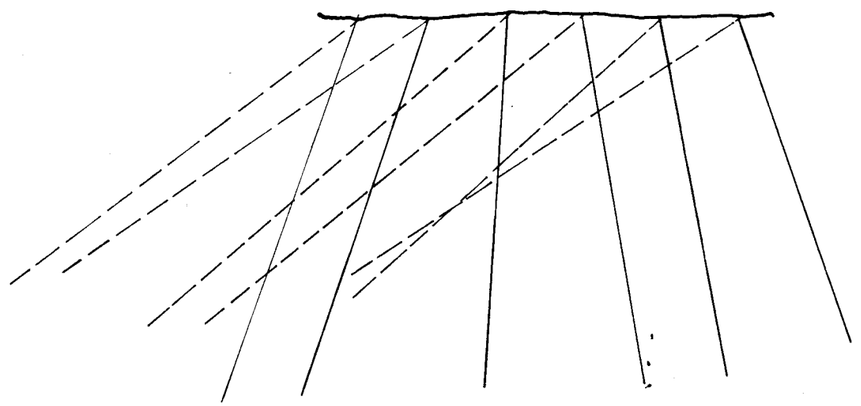
PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 2S

Grant Hall
geophysical consulting
Vancouver B.C.

INTERPRETED BY: G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE: MARCH, 1978
FIG. No: 26

6 W 4 W 2 W 0

LAKE



DEPTH (Feet)

0
200
400
600

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

LOOP B

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PE M

400 600

Feet

N.T.S. 105 H/6

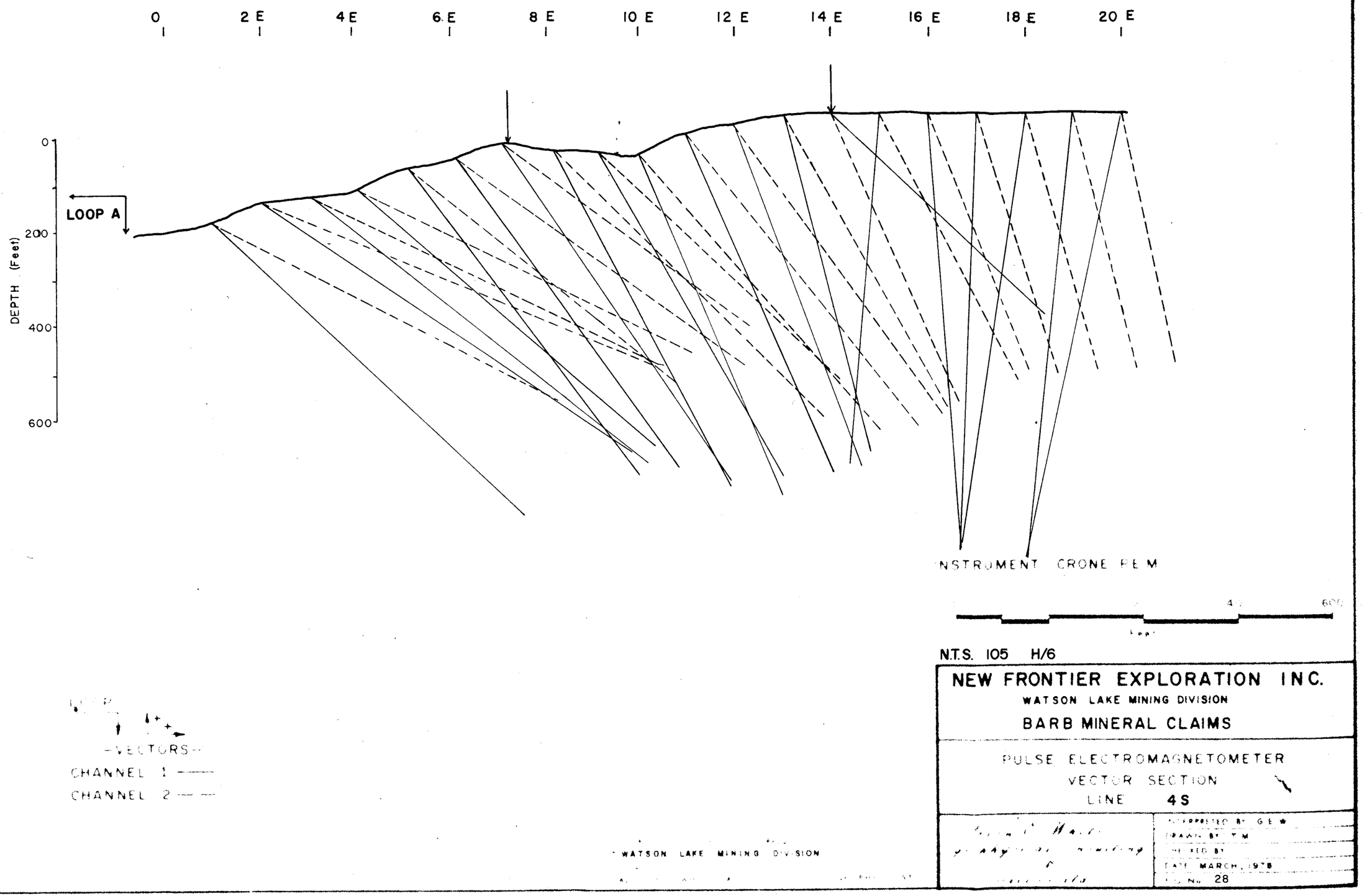
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 4S

	INTERPRETED BY: G E W
	DRAWN BY: T M
	CHECKED BY:
	DATE: MARCH, 1978
	FIG No: 27



N.T.S. 105 H/6

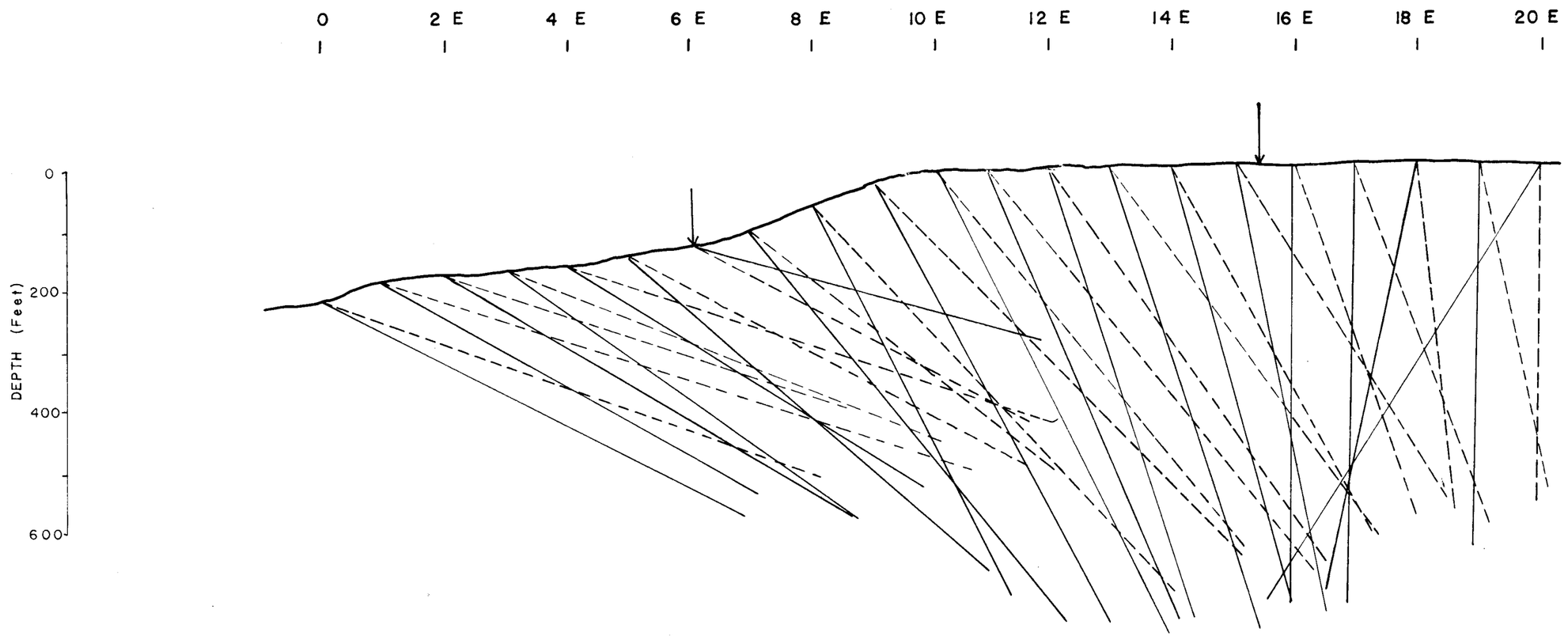
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 4S

	INTERPRETED BY G.E.W.
	DRAWN BY Y.M.
	CHECKED BY
	DATE MARCH, 1978
	FIG. No. 28



INSTRUMENT CRONE PEM

Feet

N.T.S. 105 H/6

LOOP A

-VECTORS-
CHANNEL 1 ——
CHANNEL 2 — —

WATSON LAKE MINING DIVISION

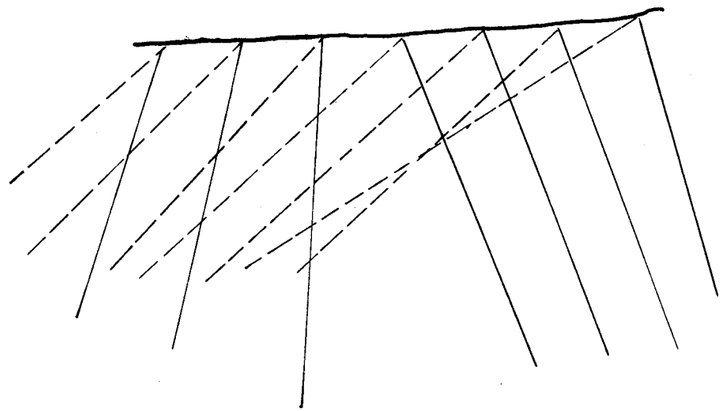
NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 6 S

	INTERPRETED BY G E W
	DRAWN BY T M
	CHECKED BY
	DATE MARCH, 1978
	FIG. No. 29

6 W 4 W 2 W 0

LAKE



DEPTH (Feet)

0
200
400
600

LOOP B

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PEM

400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

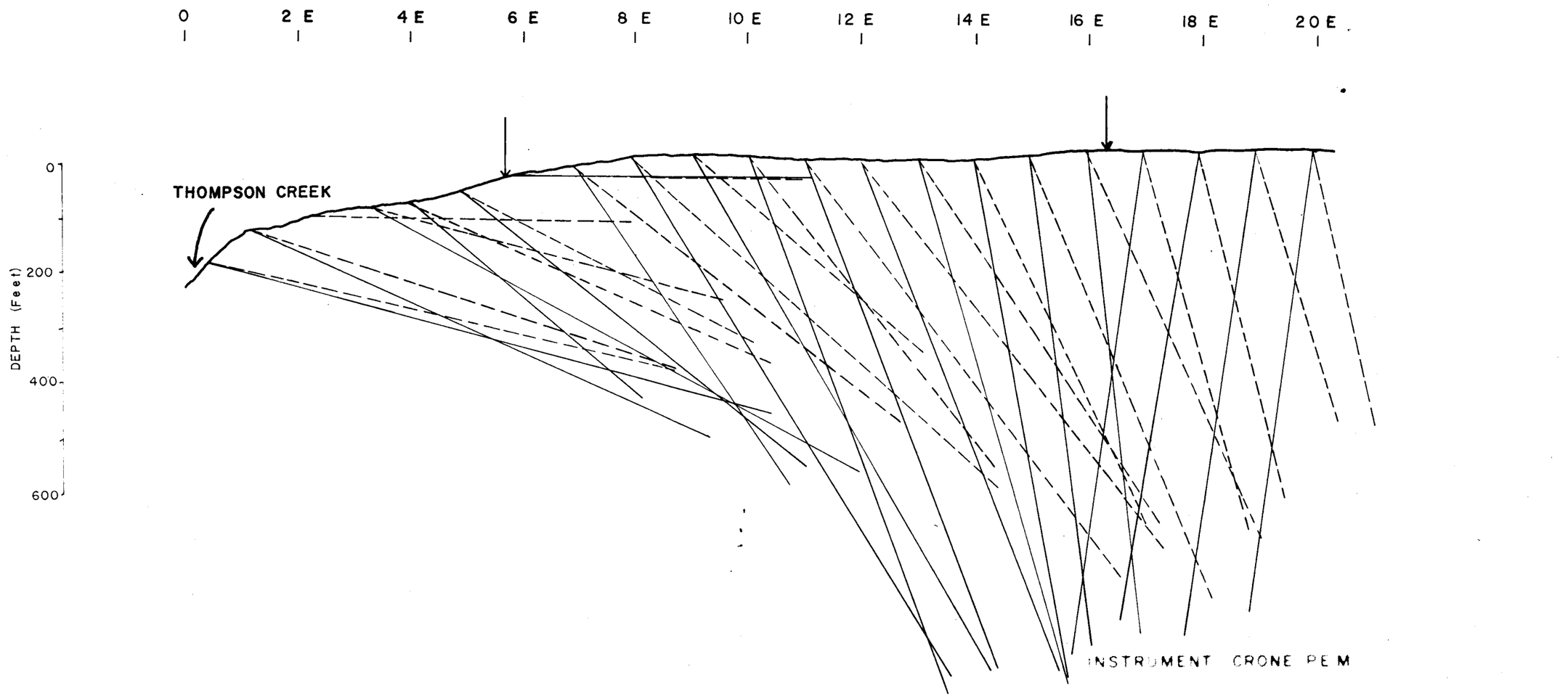
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 6 S

Grant Mail
geophysicist mining
consultant

INTERPRETED BY G.E.W.
DRAWN BY T.M.
CHECKED BY
DATE MARCH, 1978
F.G. No. 30



N.T.S. 105 H/6

LOOP A

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

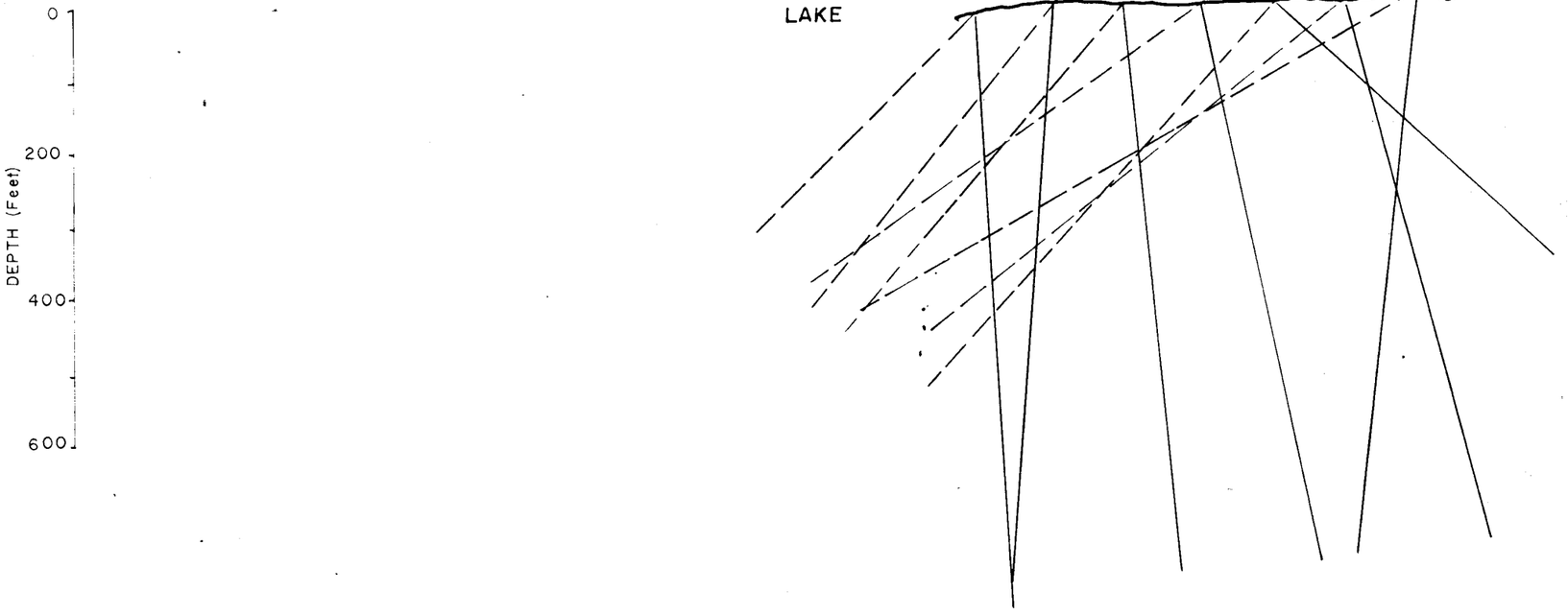
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 8 S

Geophysical Engineering	INTERPRETED BY G.E.W.
	DRAWN BY T.M.
	CHECKED BY
	DATE MARCH, 1978
	FIG No. 31



INSTRUMENT CRONE PE M

0 200 400 600

Feet

N.T.S. 105 H/6

LOOP B

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

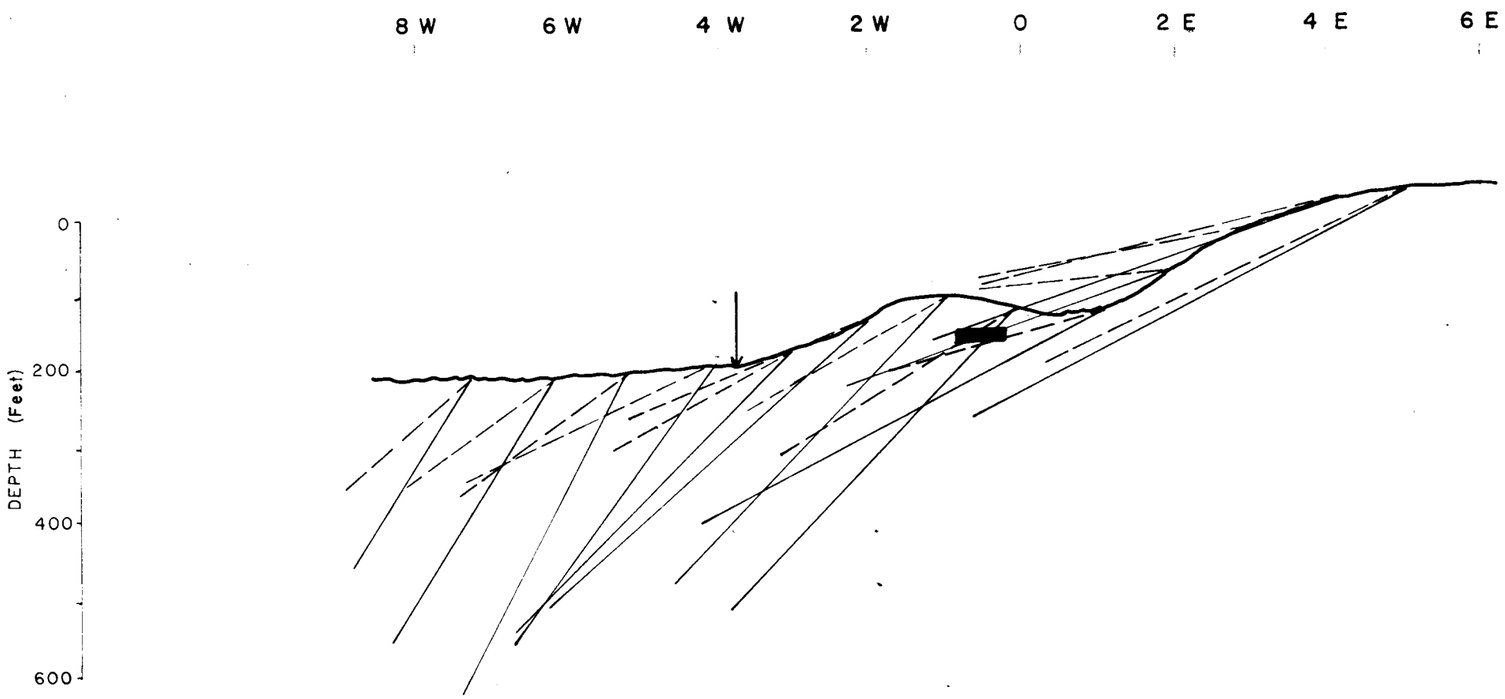
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 8S

Crone Geophysical Limited	INTERPRETED BY: G E W
	DRAWN BY: T M
	CHECKED BY:
	DATE: MARCH, 1978
	FIG No. 32



■ MINERALIZATION BY D.H.

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

LOOP B

WATSON LAKE MINING DIVISION

INSTRUMENT GRONE PEM

400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

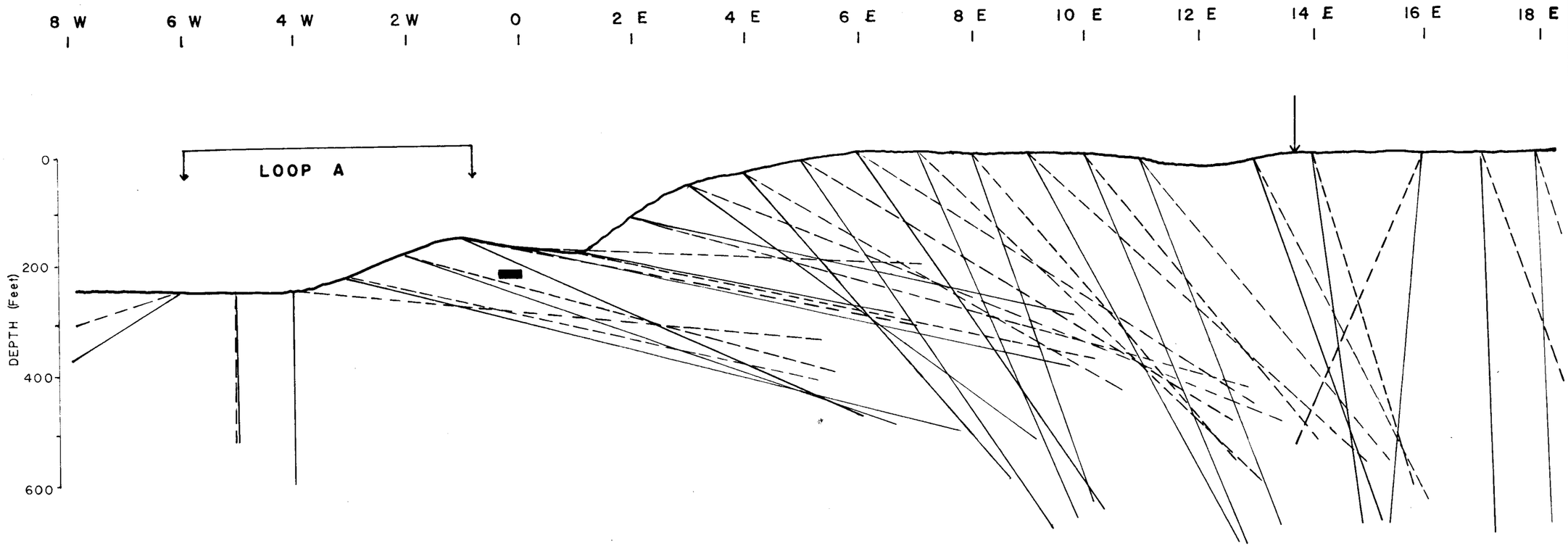
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 10 S

Geophysical Engineering

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No. 33



▬ MINERALIZATION BY D.H.

INSTRUMENT CRONE PEM

Feet

N.T.S. 105 H/6

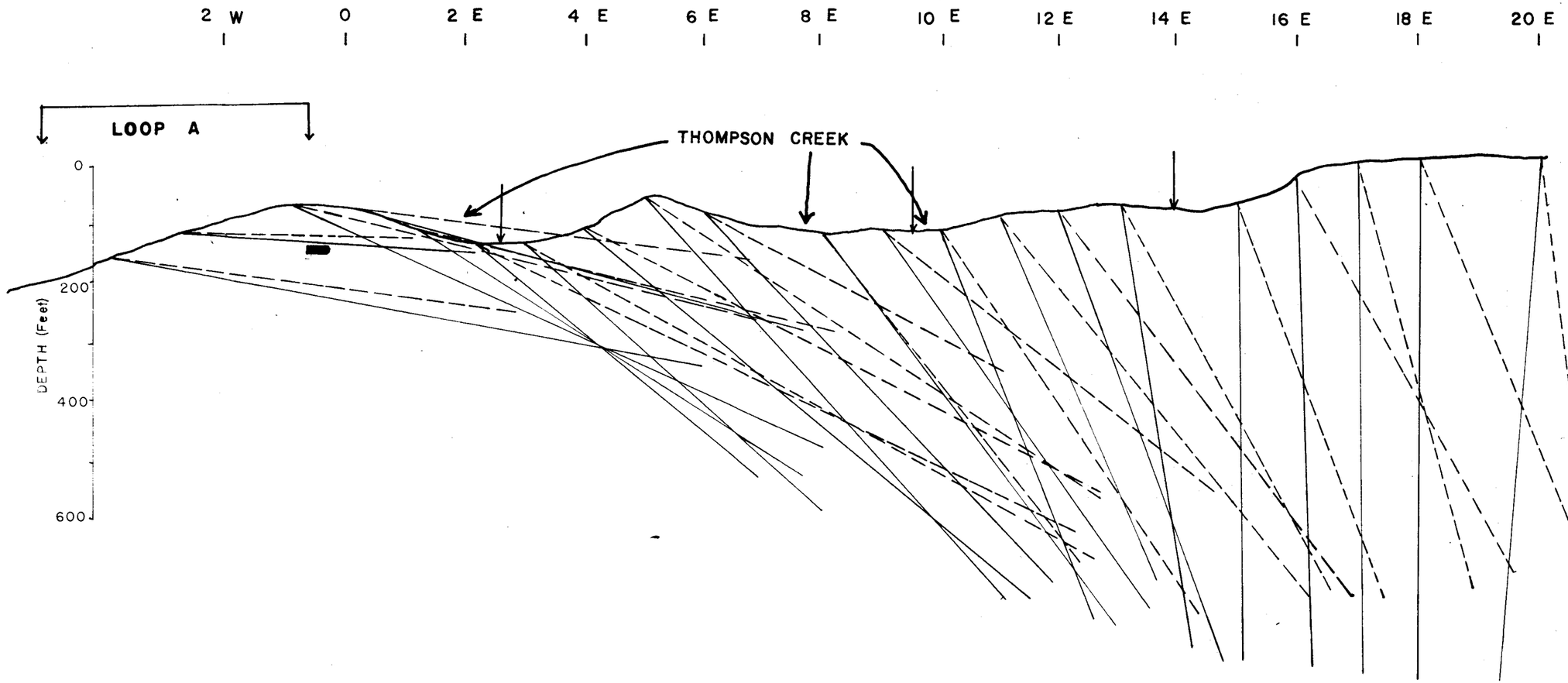
-VECTORS-
CHANNEL 1 ——
CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 10 S

INTERPRETED BY G.E.W.
DRAWN BY T.M.
CHECKED BY
DATE MARCH, 1978
FIG No. 34



INSTRUMENT CRONE PE M

400 600

Feet

■ MINERALIZATION BY D.H.

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

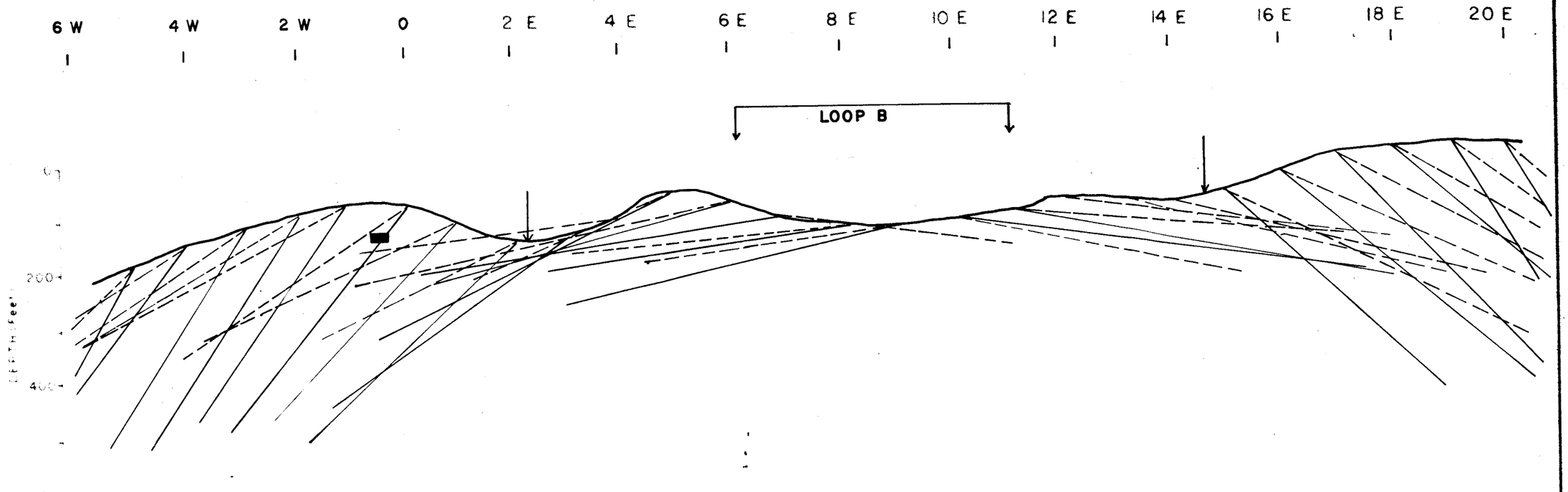
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 12 S

Crone Geophysics Limited

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No: 35



■ MINERALIZATION BY D.H.

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

GEOPHYSICIST

INSTRUMENT CRONE PE M

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

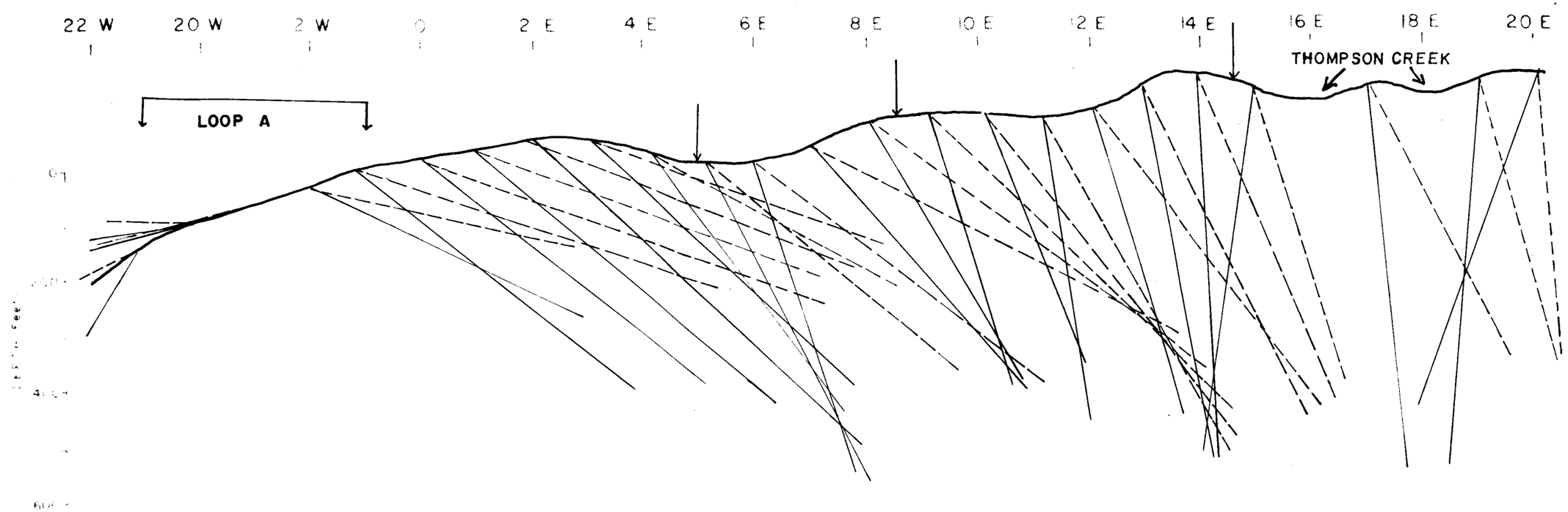
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 12 S

Crone Geophysical & Exploration Ltd	INTERPRETED BY: G E W DRAWN BY: T M CHECKED BY: DATE: MARCH, 1978 FIG No: 36



INSTRUMENT CRONE PEM

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

LOOP

+ +

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

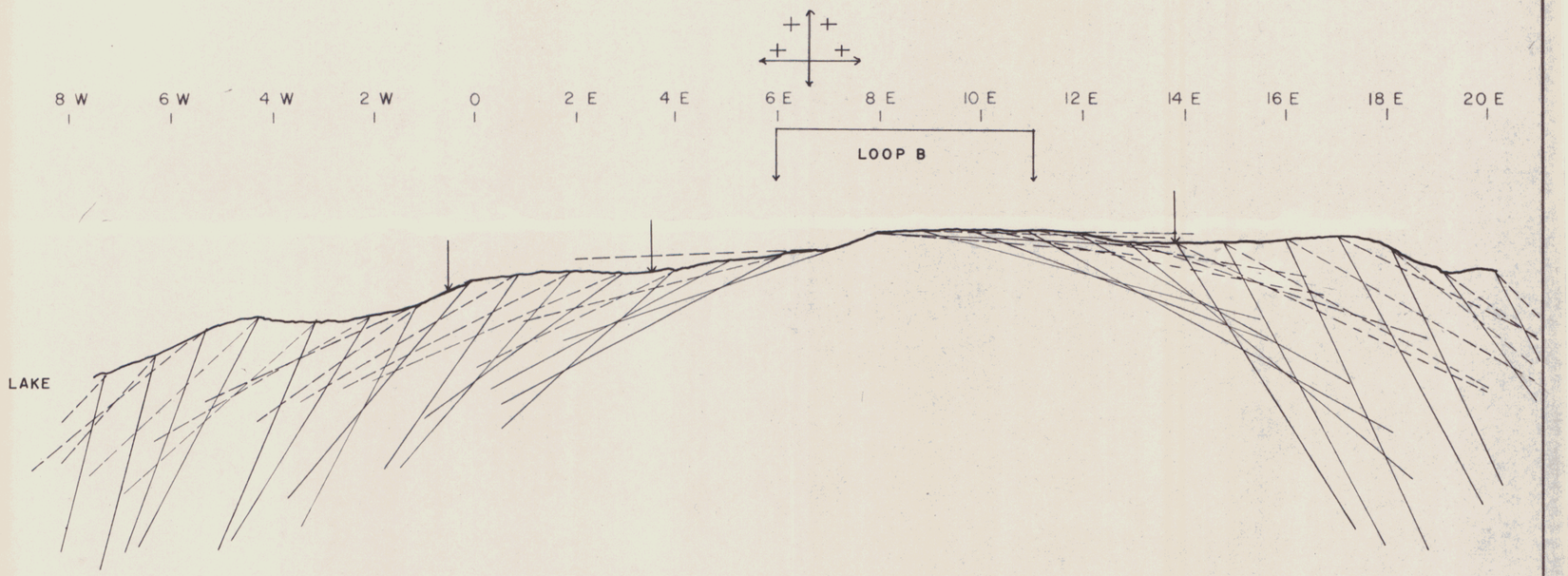
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 14 S

Glen C. White
geophysical consulting
&
services ltd

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No.: 37



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

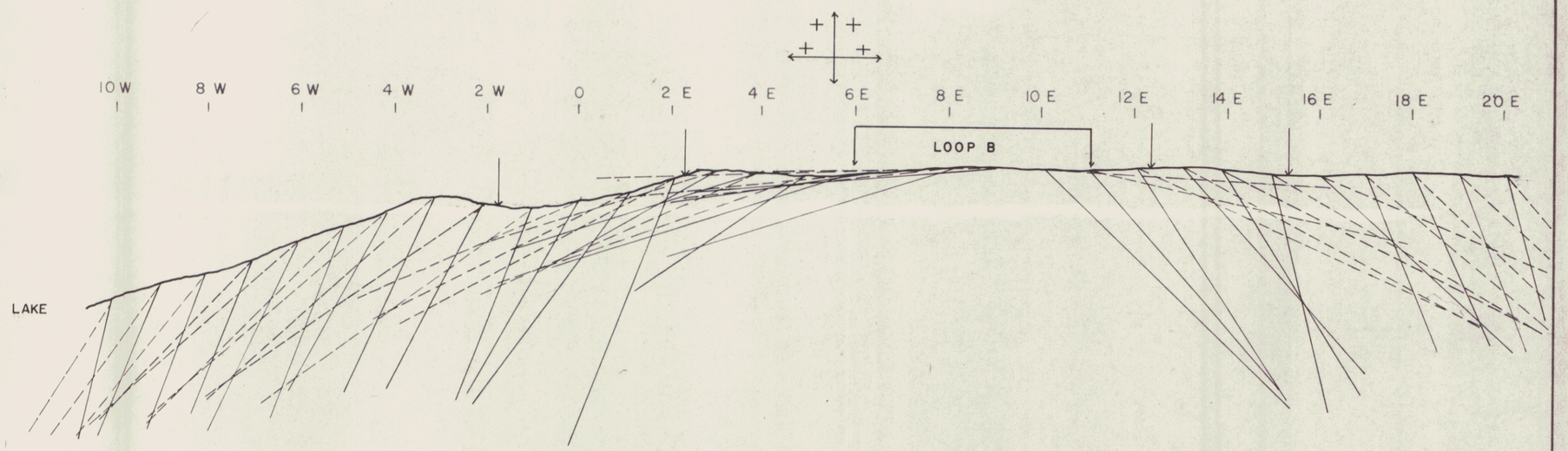
BARB MINERAL CLAIMS

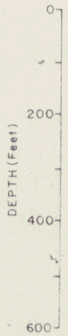
PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 16 S

Glen E. White
geophysical consulting
& services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 38

for A. Gregory Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By, Glenn E. White B.S. ..... GEOPHYSICIST





LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

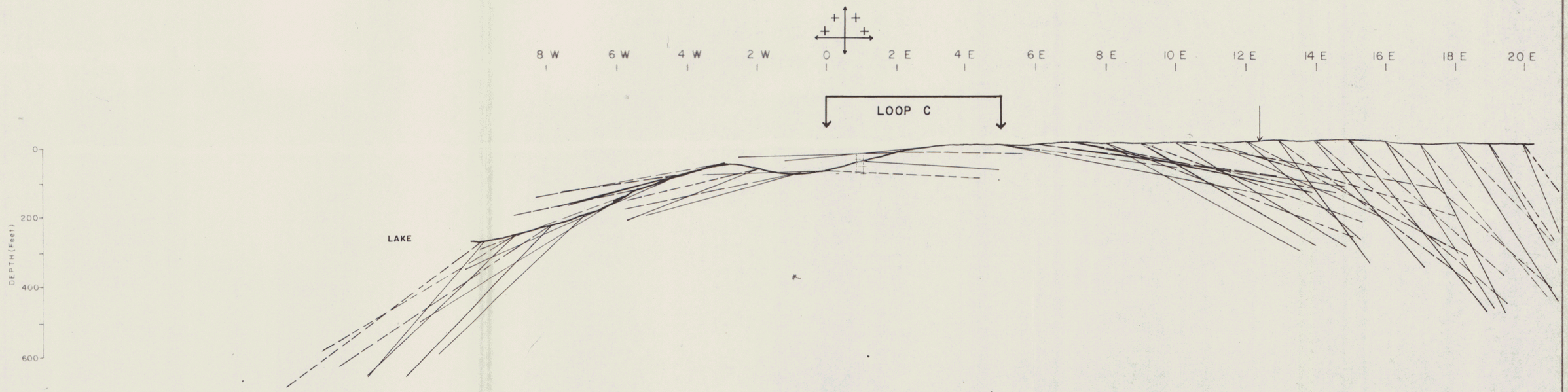
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 18 S

To Accompany Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By GLEN E. WHITE B.Sc. ..... GEOPHYSICIST

Glen E. White
geophysical consulting
& services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 39



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 18 S

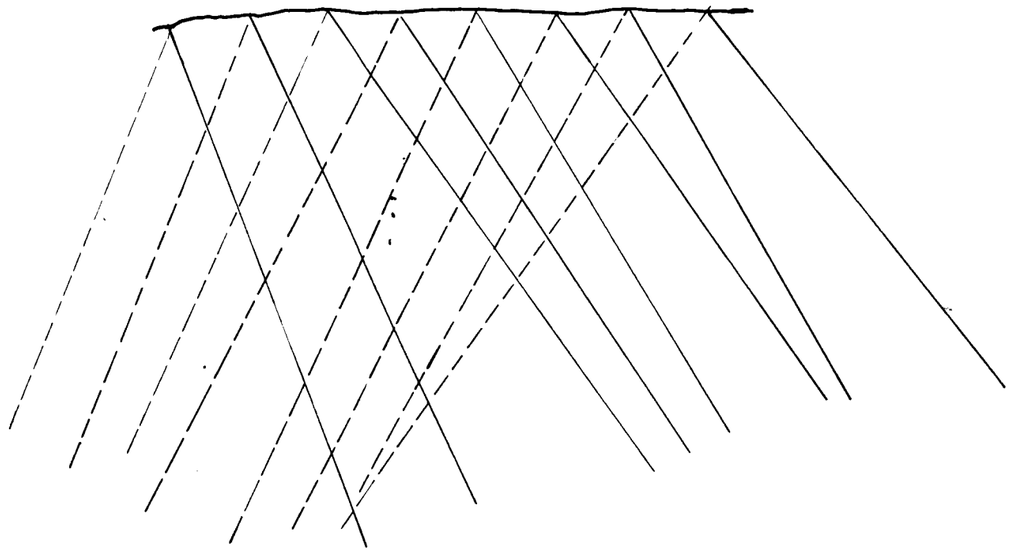
Glen E. White
geophysical consulting
& services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No. : 40

A report by Operator to Regional
WATSON LAKE MINING DIVISION
By GLEN E. WHITE B.Sc. GEOPHYSICIST

0 2E 4E 6E 8E 10E

LOOP D



INSTRUMENT CRONE PE M

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

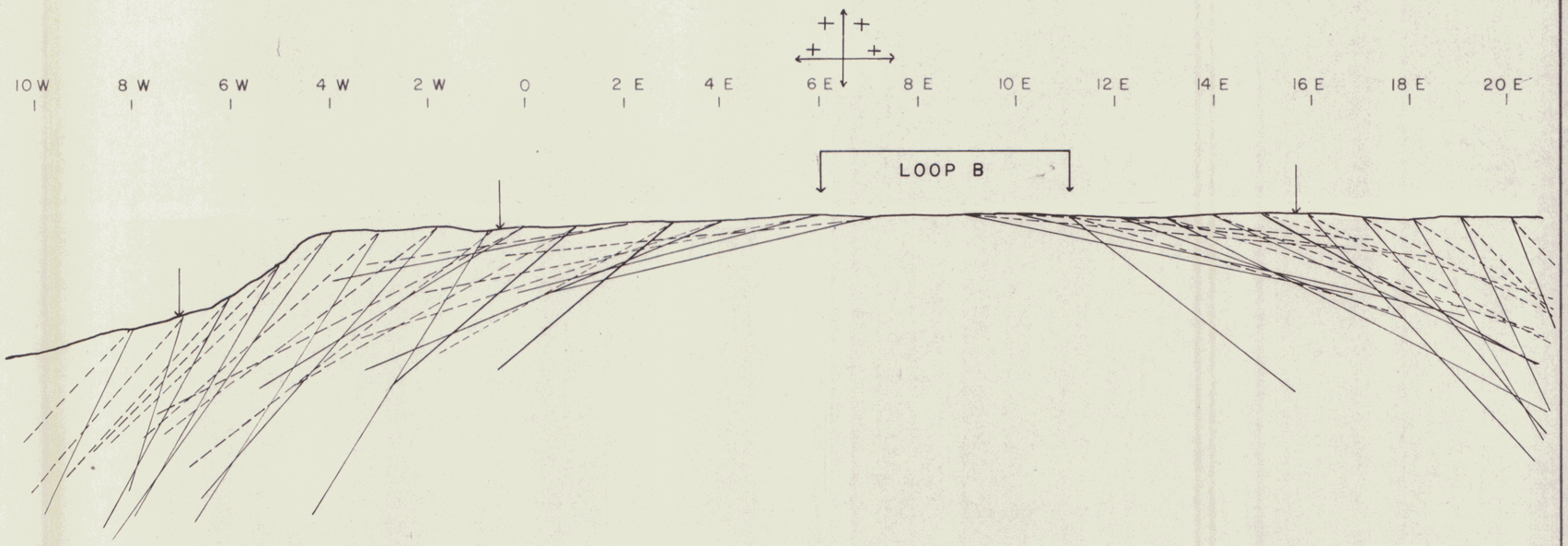
WATSON LAKE MINING DIVISION

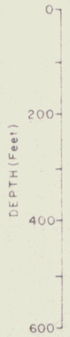
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 18 S

Crone Geophysics Limited

INTERPRETED BY G E W
DRAWN BY T M
CHECKED BY
DATE MARCH, 1978
F.G. No. 41





LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

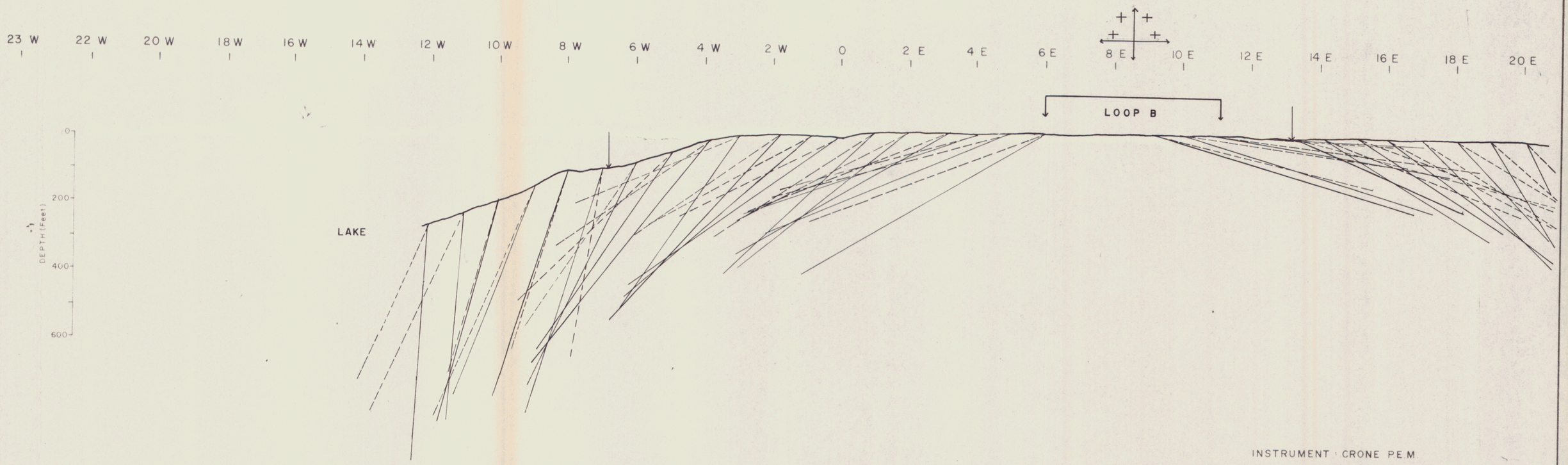
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 20S

Glen E. White geophysical consulting services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No. : 42

A Complete Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By GLEN E. WHITE B.Sc. ..... GEOPHYSICIST



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

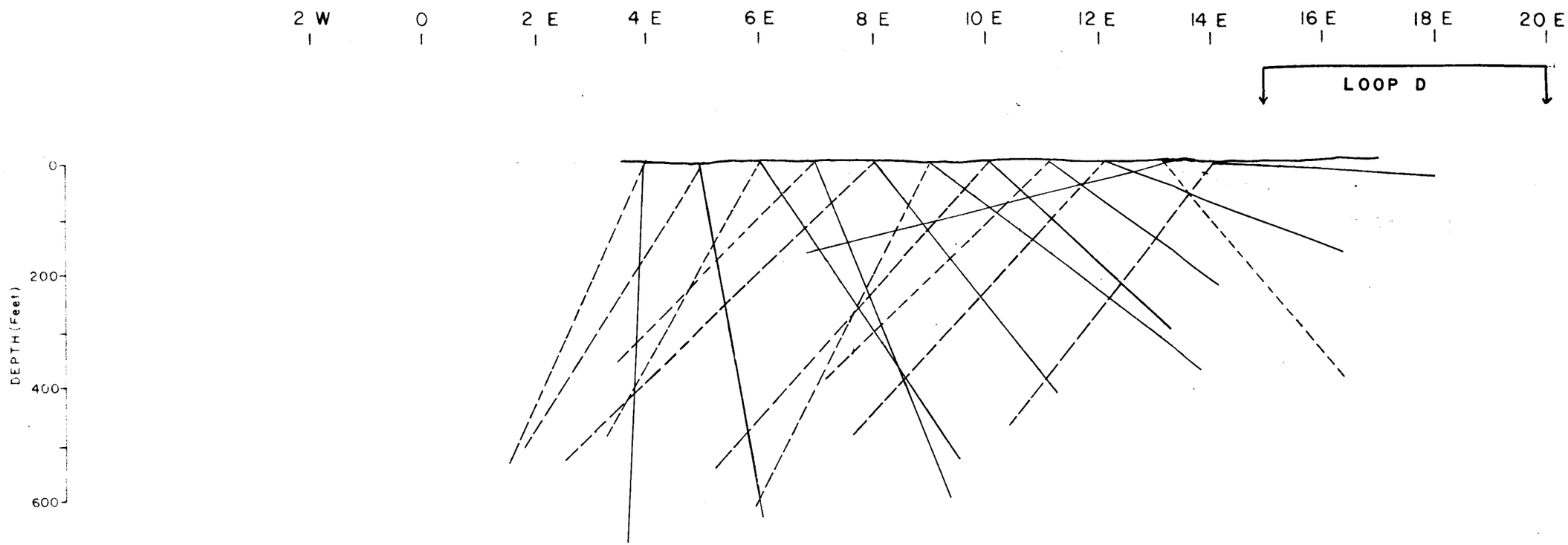
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 22 S

Glen E. White
geophysical consulting
services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 43

For A. Grauch & Geophysical Report on
WATSON LAKE MINING DIVISION
Date
By GLENE WHITE B.S. GEOPHYSICIST



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

A Preliminary Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By GLENN E WHITE B.S. ..... GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

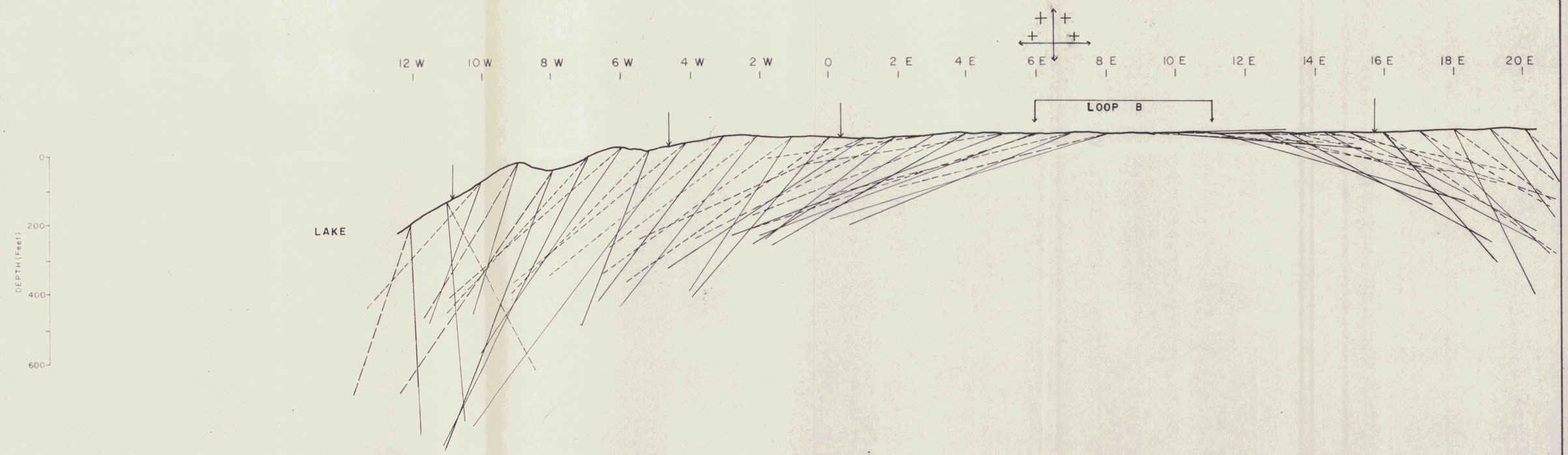
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 22 S

Glen E. White geophysical consulting services ltd

INTERPRETED BY : G E W.
DRAWN BY : T M
CHECKED BY :
DATE : MARCH, 1978
FIG No : 44



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

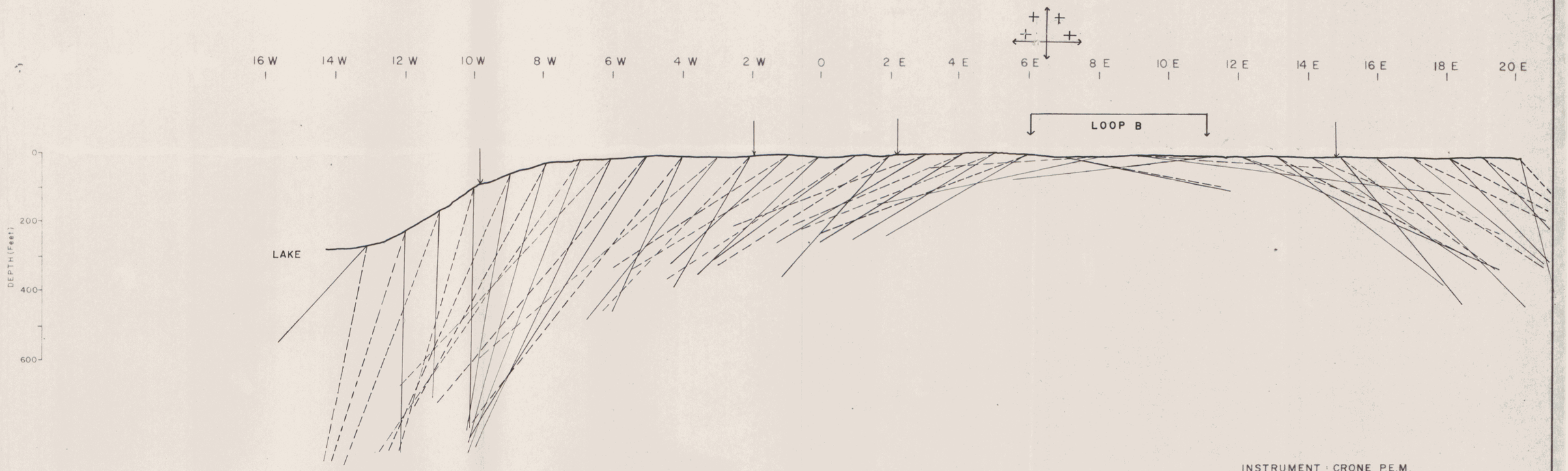
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 24 S

Glen E. White
geophysical consulting
services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 45

To Accompany Geophysical Report on
WATSON LAKE MINING DIVISION
Dated
By GLENN E. WHITE B.S. ..... GEOPHYSICIST



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

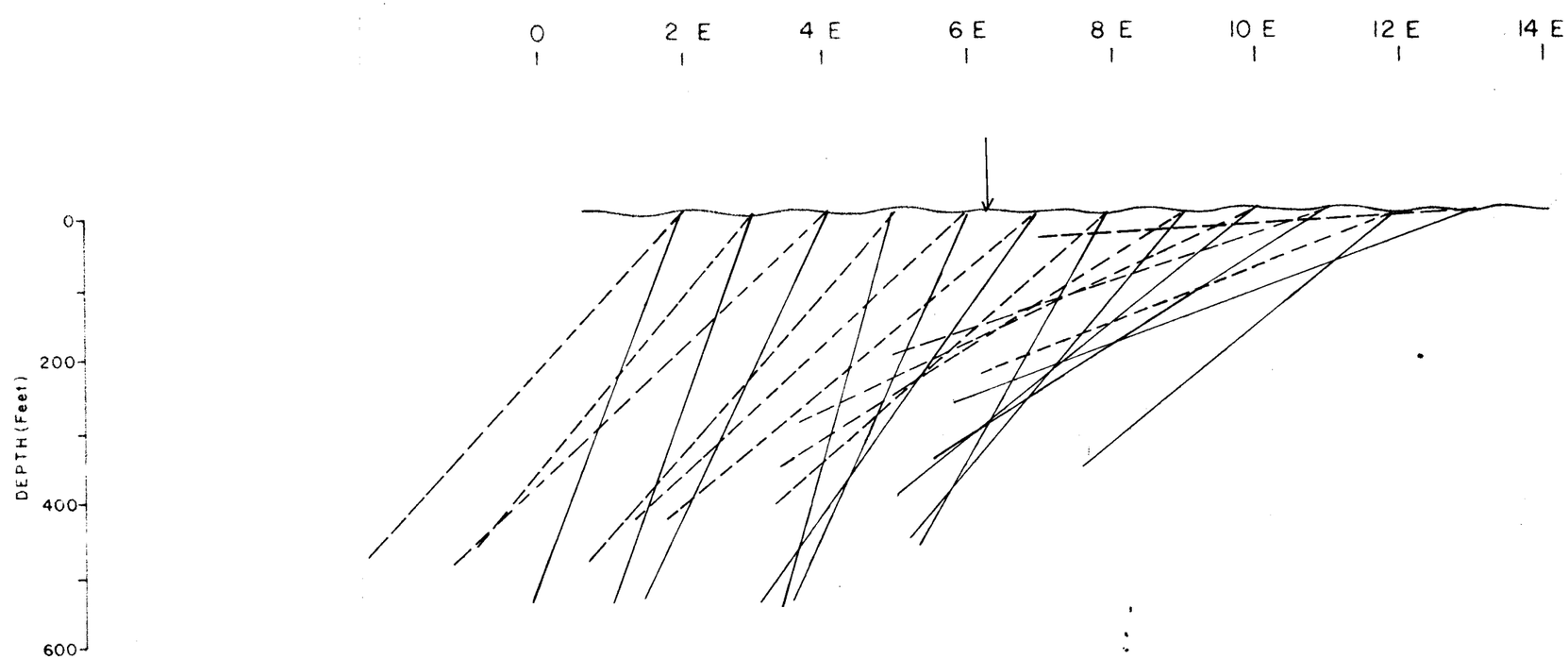
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 26 S

To Accompany Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By GLEN E. WHITE B.Sc. ..... GEOPHYSICIST

Glen E. White
geophysical consulting
services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG. No : 46



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

Assessment Report

WATSON LAKE MINING DIVISION

Date

By GLENN E WHITE B.Sc. GEOPHYSICIST

NEW FRONTIER EXPLORATION INC.

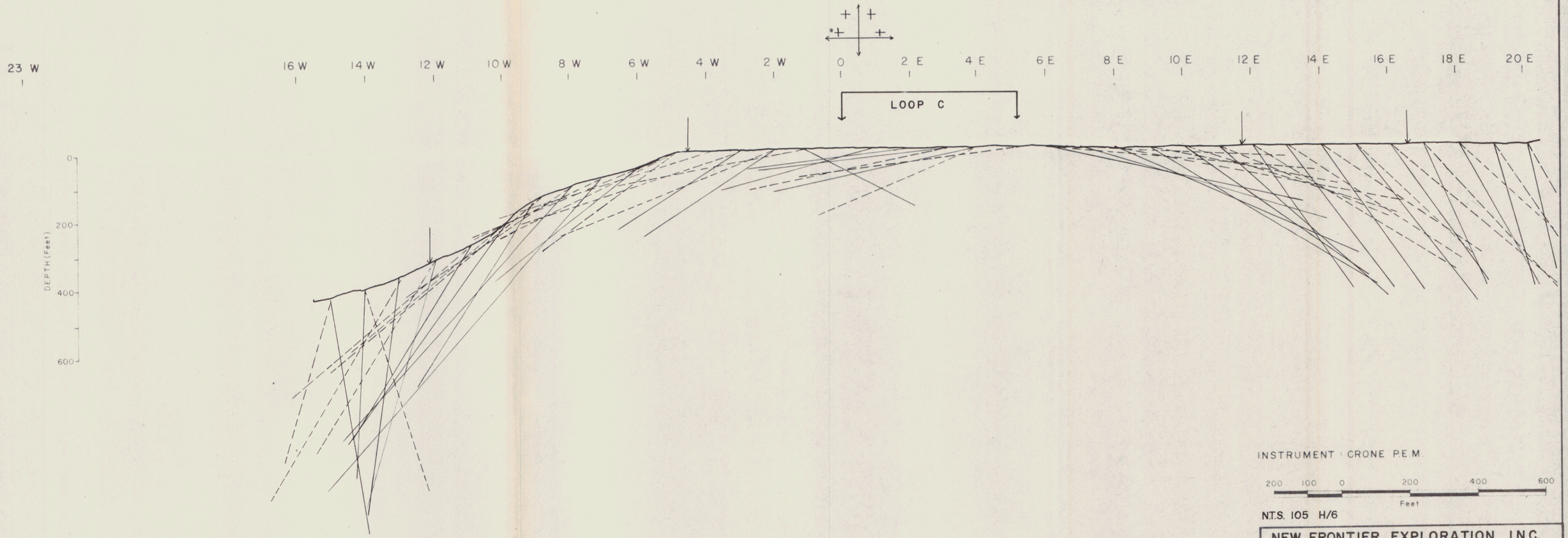
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 26 S

Glen E. White geophysical consulting services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 47



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

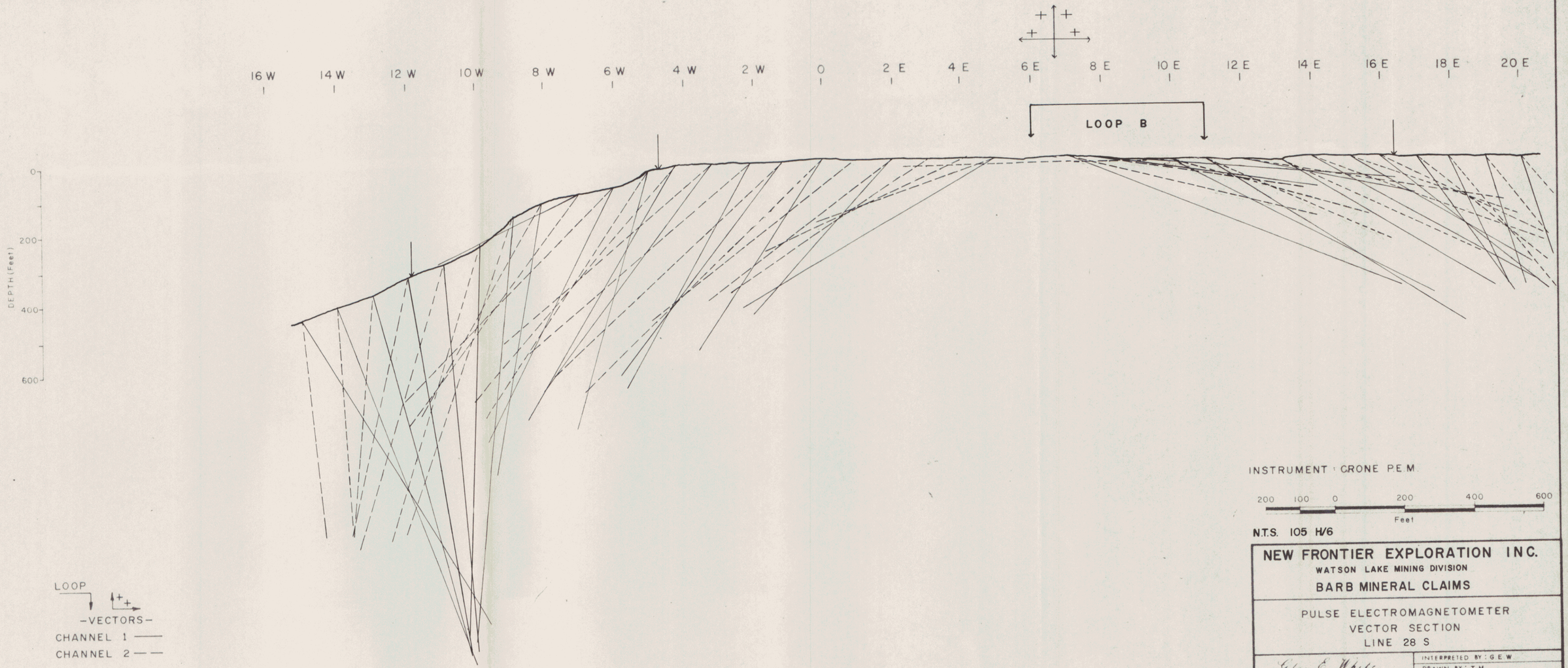
BARB MINERAL CLAIMS

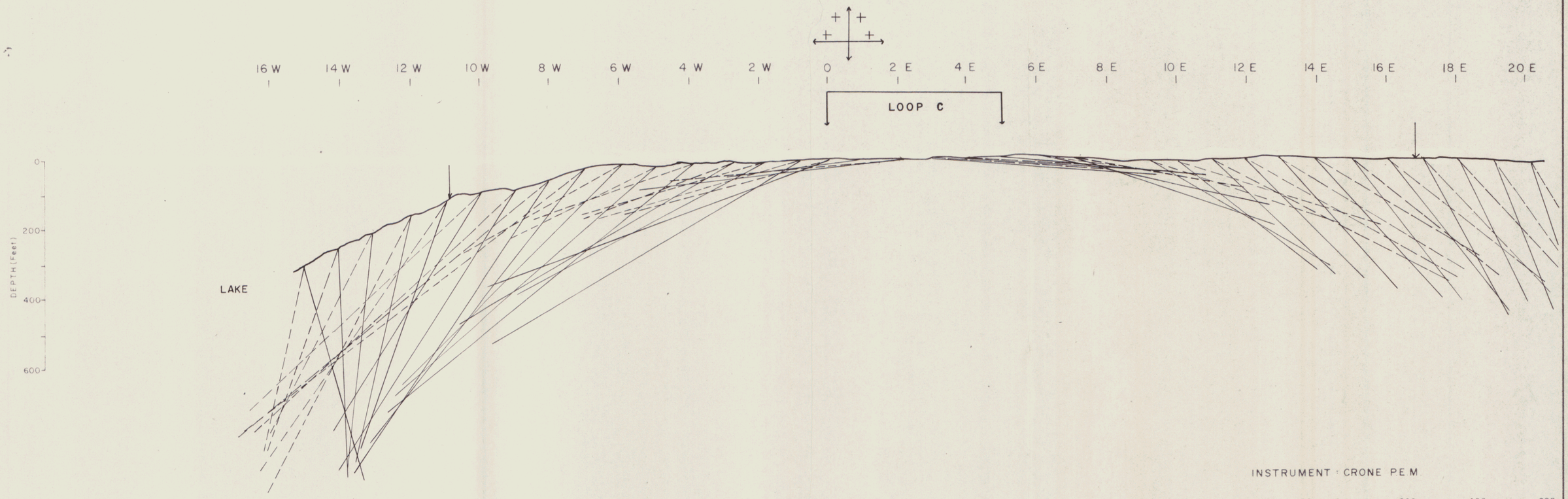
PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 28 S

Glen E. White
geophysical consulting
& services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 48

A Report On Geophysical Surveys
WATSON LAKE MINING DIVISION
For
By: GLENN E. WHITE B.Sc. GEOPHYSICIST


16 W
14 W
12 W
10 W
8 W
6 W
4 W
2 W
0
2 E
4 E
6 E
8 E
10 E
12 E
14 E
16 E
18 E
20 E
LOOP B
DEPTH (Feet)
0
200
400
600
LOOP
-VECTORS-
CHANNEL 1
CHANNEL 2
INSTRUMENT : CRONE P.E.M.
200 100 0 200 400 600
Feet
N.T.S. 105 H/6
NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS
PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 28 S
INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 49
Glen E. White
geophysical consulting
services ltd
WATSON LAKE MINING DIVISION
GEOPHYSICIST



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

INSTRUMENT : CRONE P.E.M

200 100 0 200 400 600

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

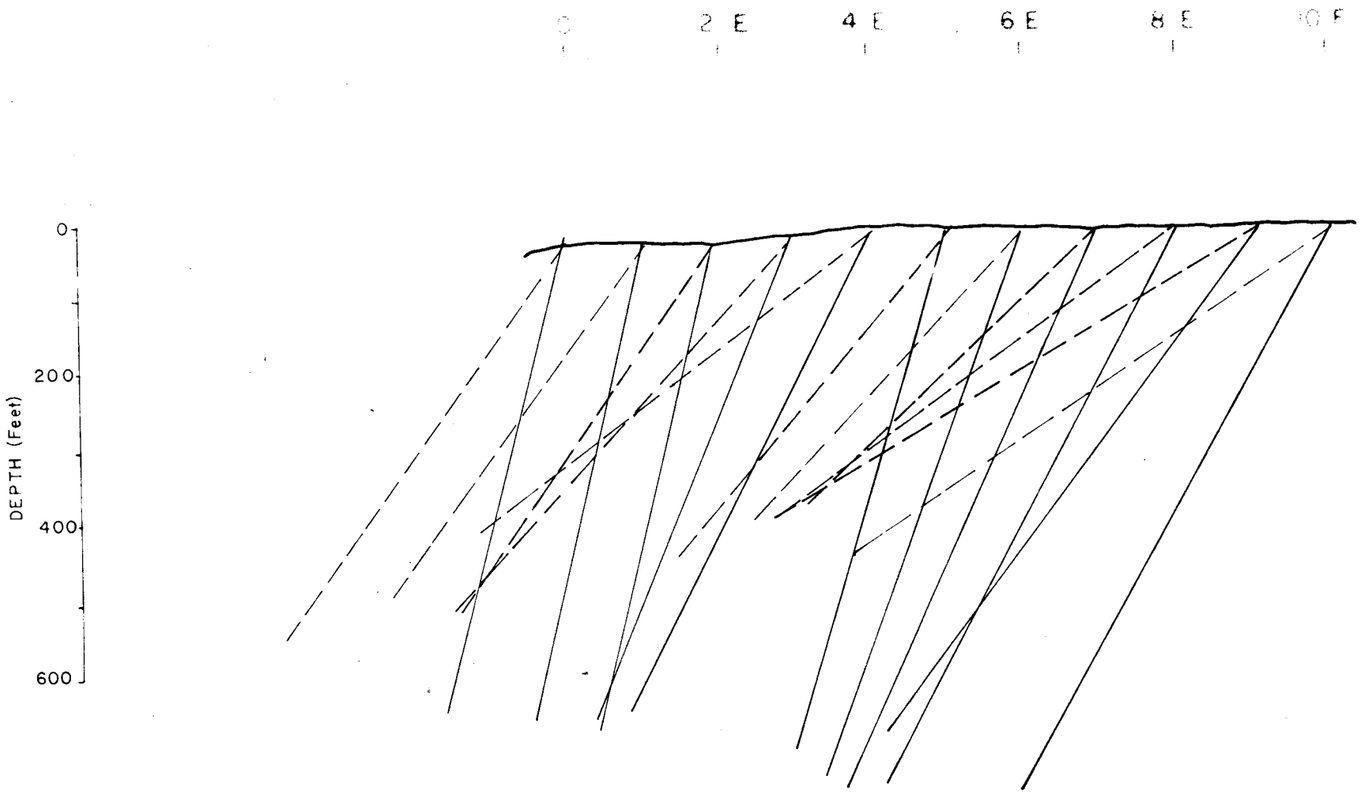
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 30 S

Glen E. White
geophysical consulting
services ltd

INTERPRETED BY : G.E.W
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 50

A ... Report on
WATSON LAKE MINING DIVISION
...
By ... GEOPHYSICIST



INSTRUMENT CRONE PEM

Feet

N.T.S. 105 H/6

LOOP D

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

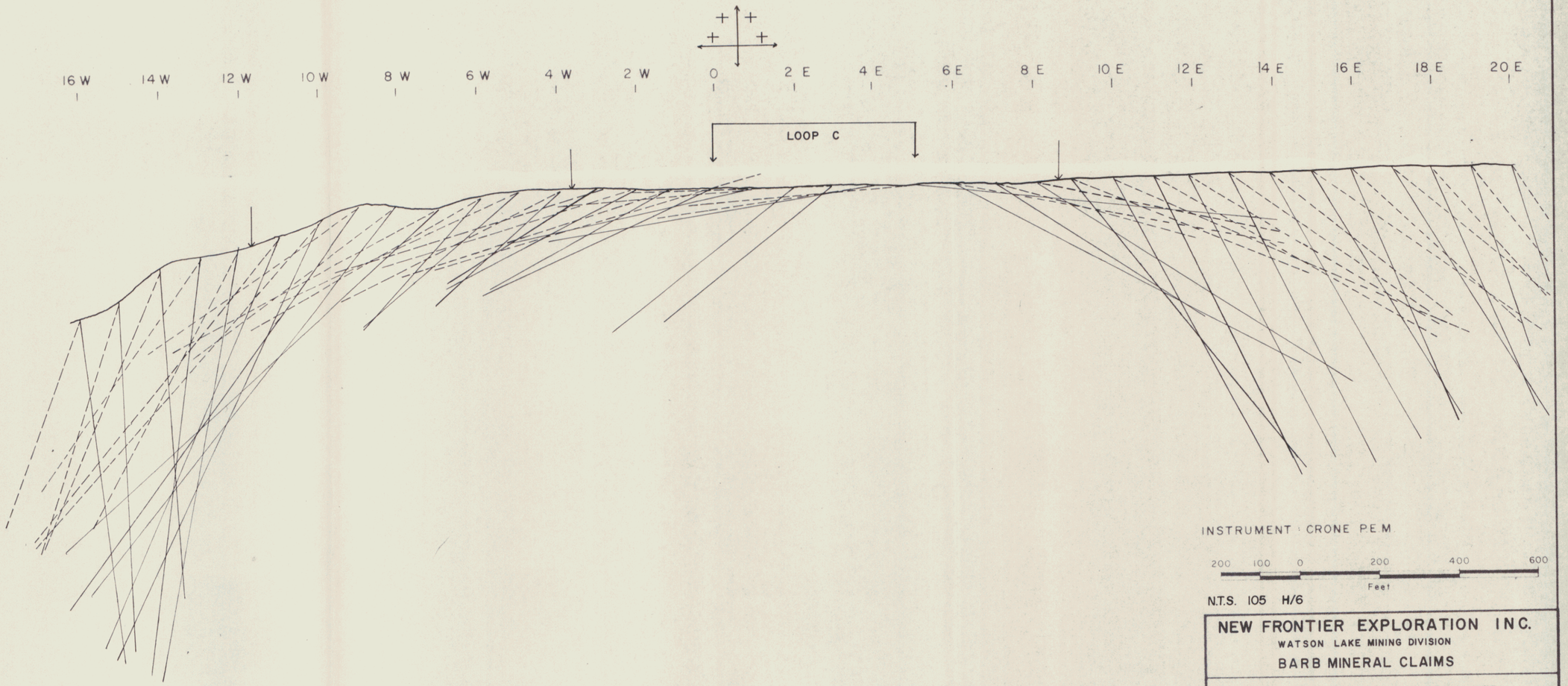
WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 30 S

Crone Geophysical & Analysis Ltd

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No.: 51



N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

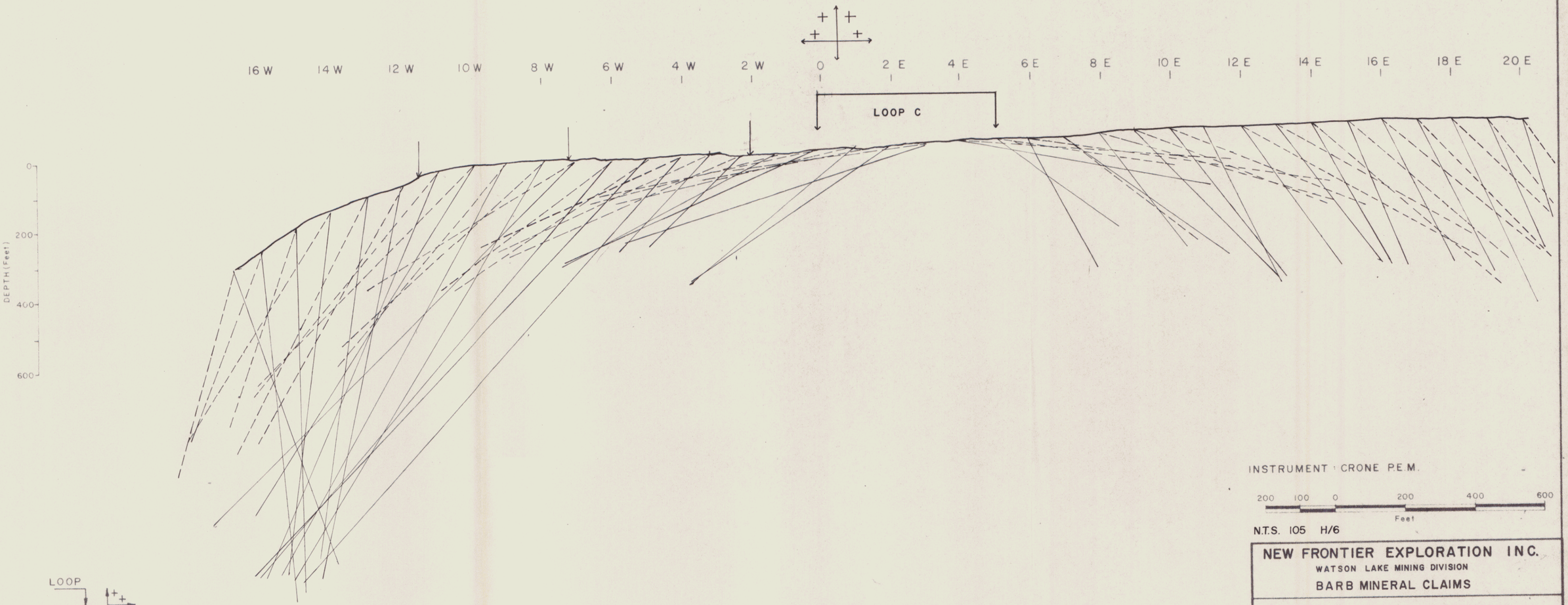
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 32 S

Glen E. White
geophysical consulting
& services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 52

A Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By GLEN E. WHITE B.Sc. ..... GEOPHYSICIST



INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600
Feet

N.T.S. 105 H/6

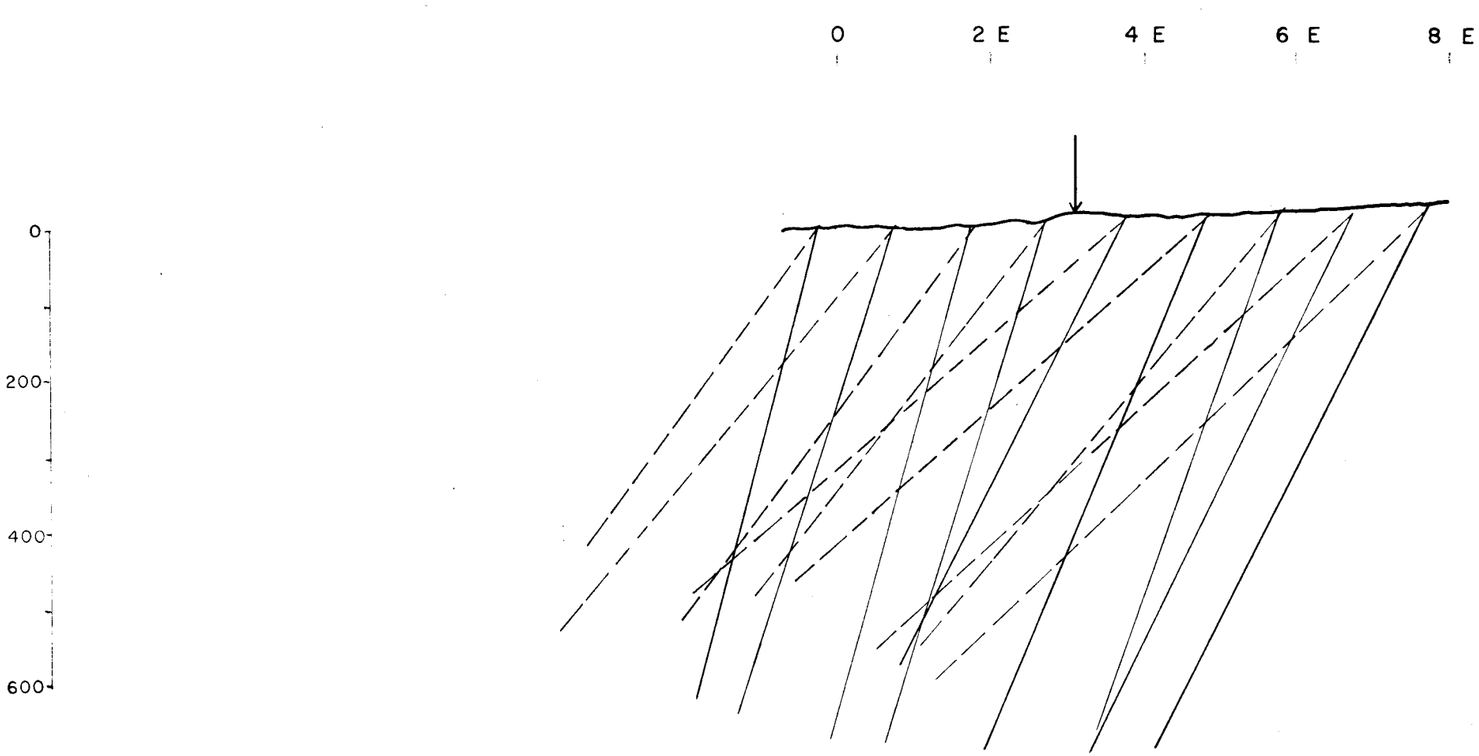
NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 34 S

Glen E. White geophysical consulting & services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 53

To Accompany Geophysical Report on
WATSON LAKE MINING DIVISION
Date .....
By Glen E. WHITE B.S. ..... GEOPHYSICIST



LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

LOOP D

WATSON LAKE MINING DIVISION

INSTRUMENT CRONE PE M

Feet

N.T.S. 105 H/6

NEW FRONTIER EXPLORATION INC.

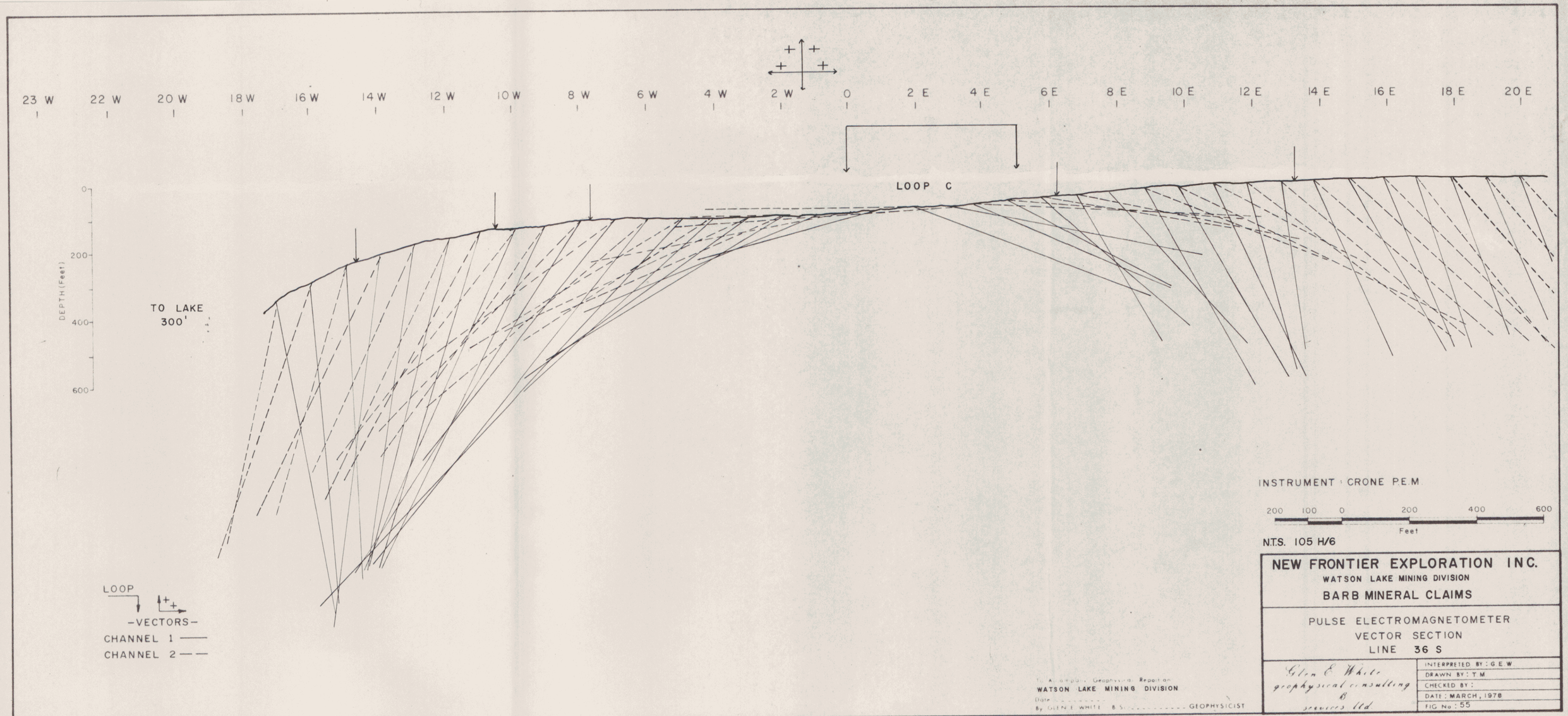
WATSON LAKE MINING DIVISION

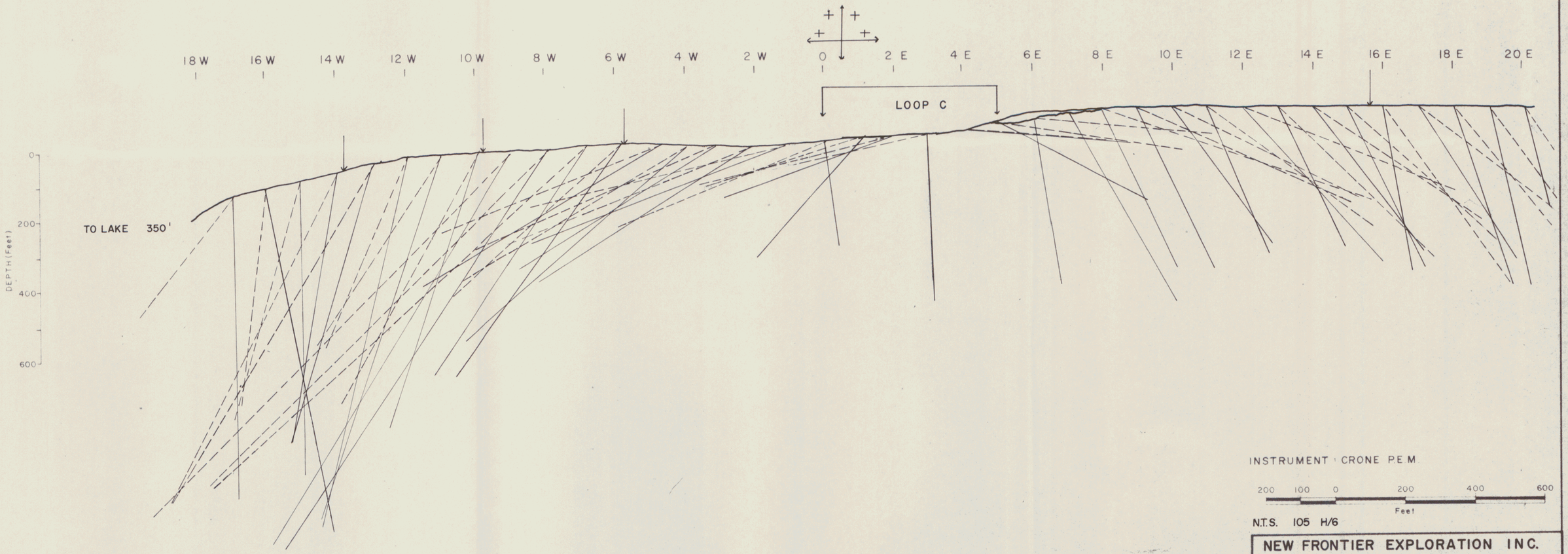
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 34 S

Grant Mack
geophysical consulting
services ltd

INTERPRETED BY: G E W
DRAWN BY: T M
CHECKED BY:
DATE: MARCH, 1978
FIG No: 54


23 W
22 W
20 W
18 W
16 W
14 W
12 W
10 W
8 W
6 W
4 W
2 W
0
2 E
4 E
6 E
8 E
10 E
12 E
14 E
16 E
18 E
20 E
LOOP C
DEPTH (Feet)
0
200
400
600
TO LAKE
300'
LOOP
-VECTORS-
CHANNEL 1 ——
CHANNEL 2 — —
INSTRUMENT : CRONE P.E.M
200 100 0 200 400 600
Feet
N.T.S. 105 H/6
NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS
PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 36 S
INTERPRETED BY : G.E.W
DRAWN BY : T.M
CHECKED BY :
DATE : MARCH, 1978
FIG No : 55
Glen E. White
geophysical consulting
&
services ltd
WATSON LAKE MINING DIVISION
By GLEN E. WHITE B.S. GEOPHYSICIST



INSTRUMENT : CRONE P.E.M.

200 100 0 200 400 600
Feet

N.T.S. 105 H/6

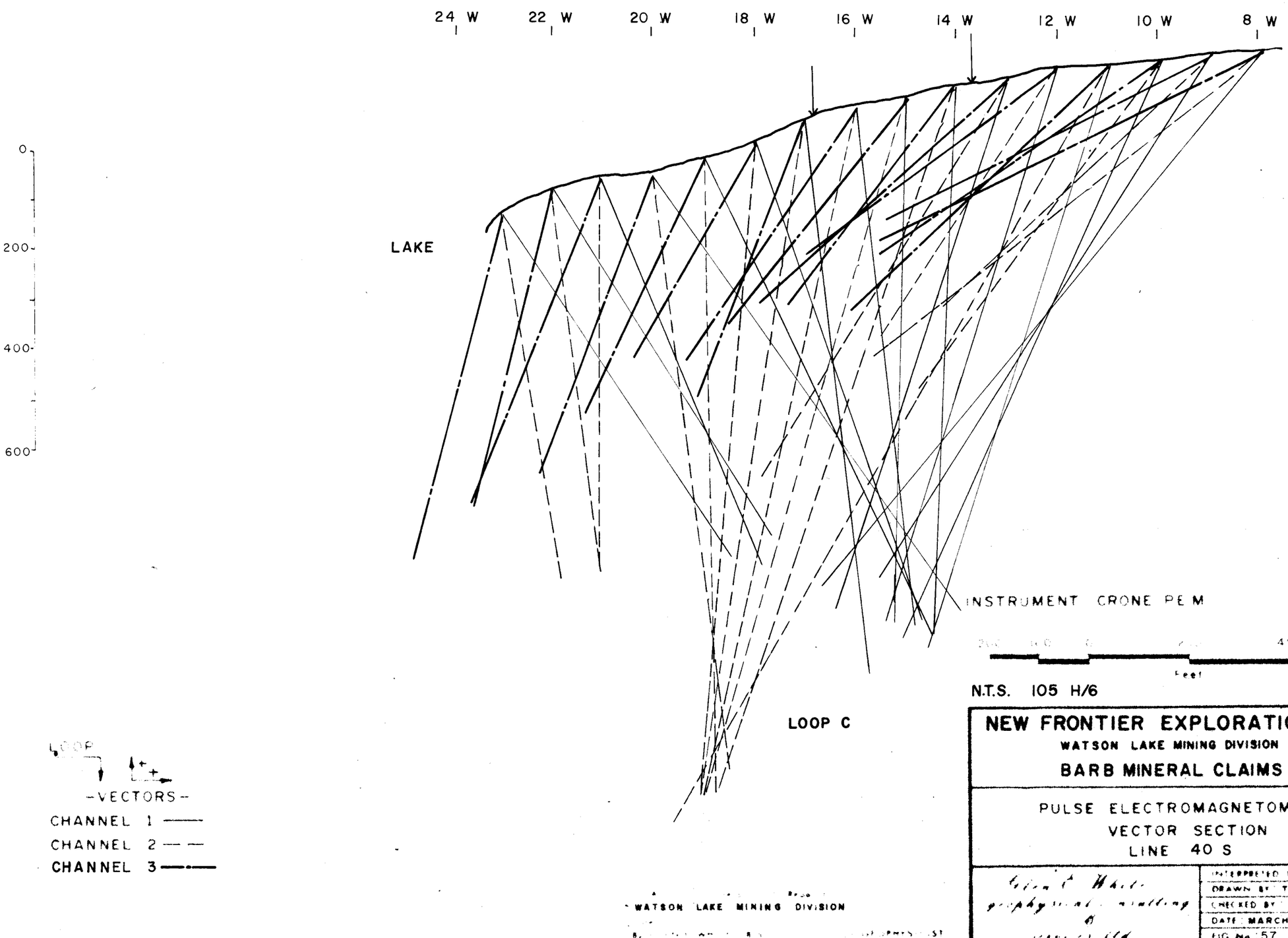
NEW FRONTIER EXPLORATION INC.
WATSON LAKE MINING DIVISION
BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 38 S

Glen E. White
geophysical consulting
services ltd

INTERPRETED BY : G.E.W.
DRAWN BY : T.M.
CHECKED BY :
DATE : MARCH, 1978
FIG No : 56

... Assessment Report ...
WATSON LAKE MINING DIVISION
Date ...
By GLEN E. WHITE B.S. ..... GEOPHYSICIST



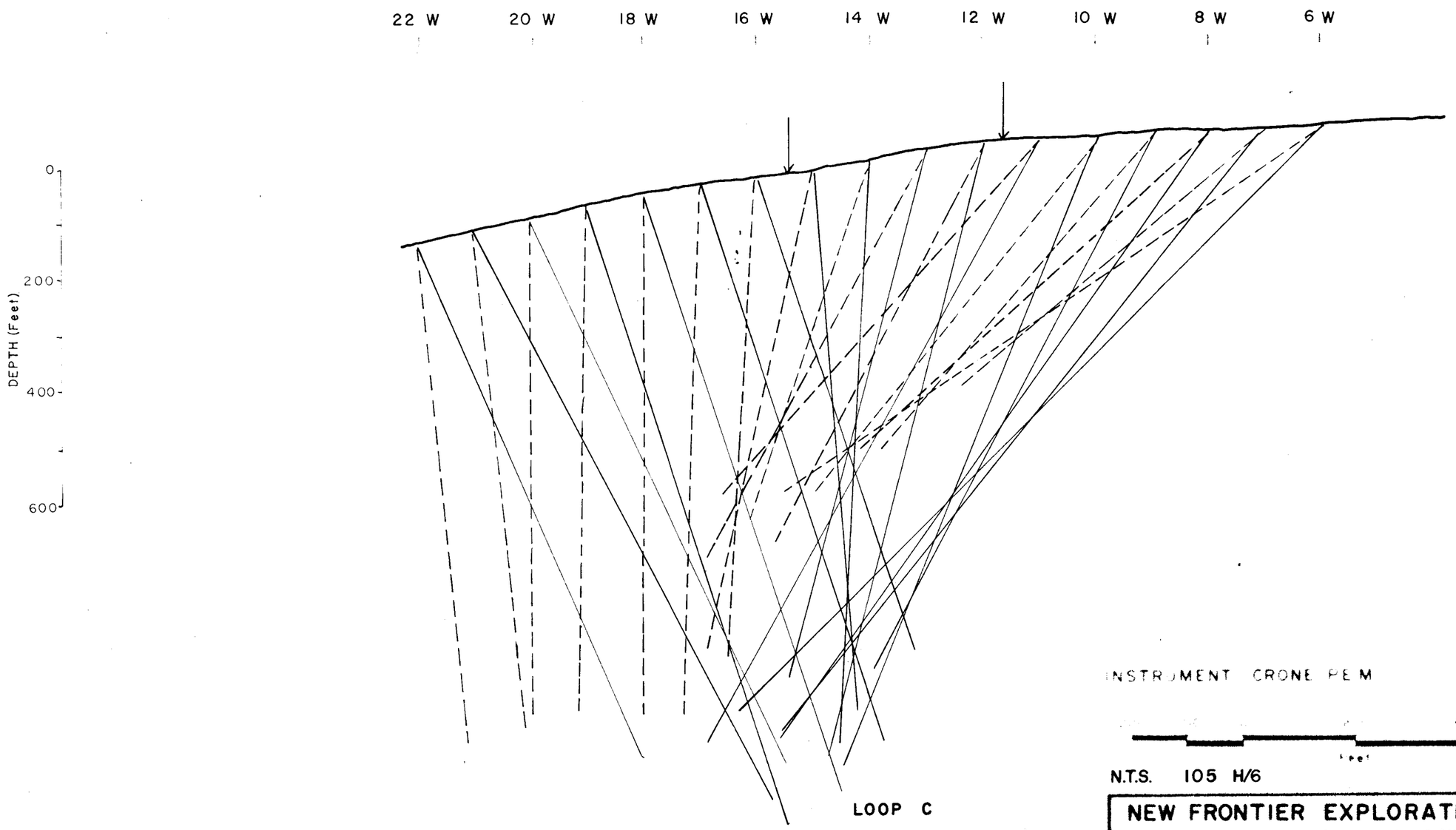
NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 40 S

Crone Geophysical Limited	INTERPRETED BY: G.E.W.
	DRAWN BY: T.M.
	CHECKED BY:
	DATE: MARCH, 1978
	FIG. No: 57



INSTRUMENT CRONE PEM

Feet

N.T.S. 105 H/6

LOOP

-VECTORS-

CHANNEL 1 ——

CHANNEL 2 — —

WATSON LAKE MINING DIVISION

NEW FRONTIER EXPLORATION INC.

WATSON LAKE MINING DIVISION

BARB MINERAL CLAIMS

PULSE ELECTROMAGNETOMETER
VECTOR SECTION
LINE 42 S

Crone Geophysical Limited	INTERPRETED BY: G.E.W.
	DRAWN BY: T.M.
	CHECKED BY:
	DATE: MARCH, 1978
	FIG. No.: 58