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GEOLOGY AND LITHOGEOCHEMISTRY OF THE
REA GOLD PROPERTY - RG8/L100 LENS AREA

PN 212
NTS 82M/4W

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Delta, B. C.

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
LOCATION AND ACCESS	1
VEGETATION	1
FAUNA	1
TOPOGRAPHY	2
HISTORY	2
GEOLOGY	2
Regional.	2
Local	3
LITHOGEOCHEMISTRY	4
IMPLICATIONS FOR EXPLORATION	5

FIGURES

1. LOCATION
2. GENERAL GEOLOGY
3. LOCAL GEOLOGICAL SECTION/AVERAGE CHEMISTRY
4. REA BRECCIA ISOPACH
- 4A. STOCKWORK ZONES
5. METAL ZONATION - RG8
6. METAL ZONATION - RG21
7. METAL ZONATION - RG25
8. ISOPACH OF ORE LENSES
9. ISOPACH OF ORE LENSES
10. ISOPACH OF ORE LENSES
11. ISOPACH OF MASSIVE SULPHIDES
12. ISOPACH OF MASSIVE BARITE
13. ISOPACH OF MUDDY TUFF
14. ISOPACH OF JOHNSON PYROCLASTICS

TABLES

1. SUMMARY LITHOGEOCHEMICAL STATISTICS
2. CORRELATION MATRIX

REA GOLD

INTRODUCTION

The Rea Gold property was optioned by CFC in November 1983 after the discovery of a massive sulphide outcrop. Since then a total of 3067.4 metres in 29 holes has been drilled and two ore lenses totalling 119,795 tonnes and grading 18.2 g/t Au, 141.2 g/t Ag, 0.85% Cu, 4.11% Zn, 3.67% Pb (undiluted - Buffam method - probable + proven) outlined.

The following report summarizes the findings to date. It should be emphasized that these are derived entirely from diamond drilling and that, because of snow, no surface work has been done by CFC thus far.

LOCATION & ACCESS

The Rea Gold property is located approximately 40 km east of Barriere, B. C. and about 100 km northeast of Kamloops. The property lies on the northwest slope of Samatosum Mtn., straddles Johnson Creek and includes a part of Johnson Lake (Figure 1).

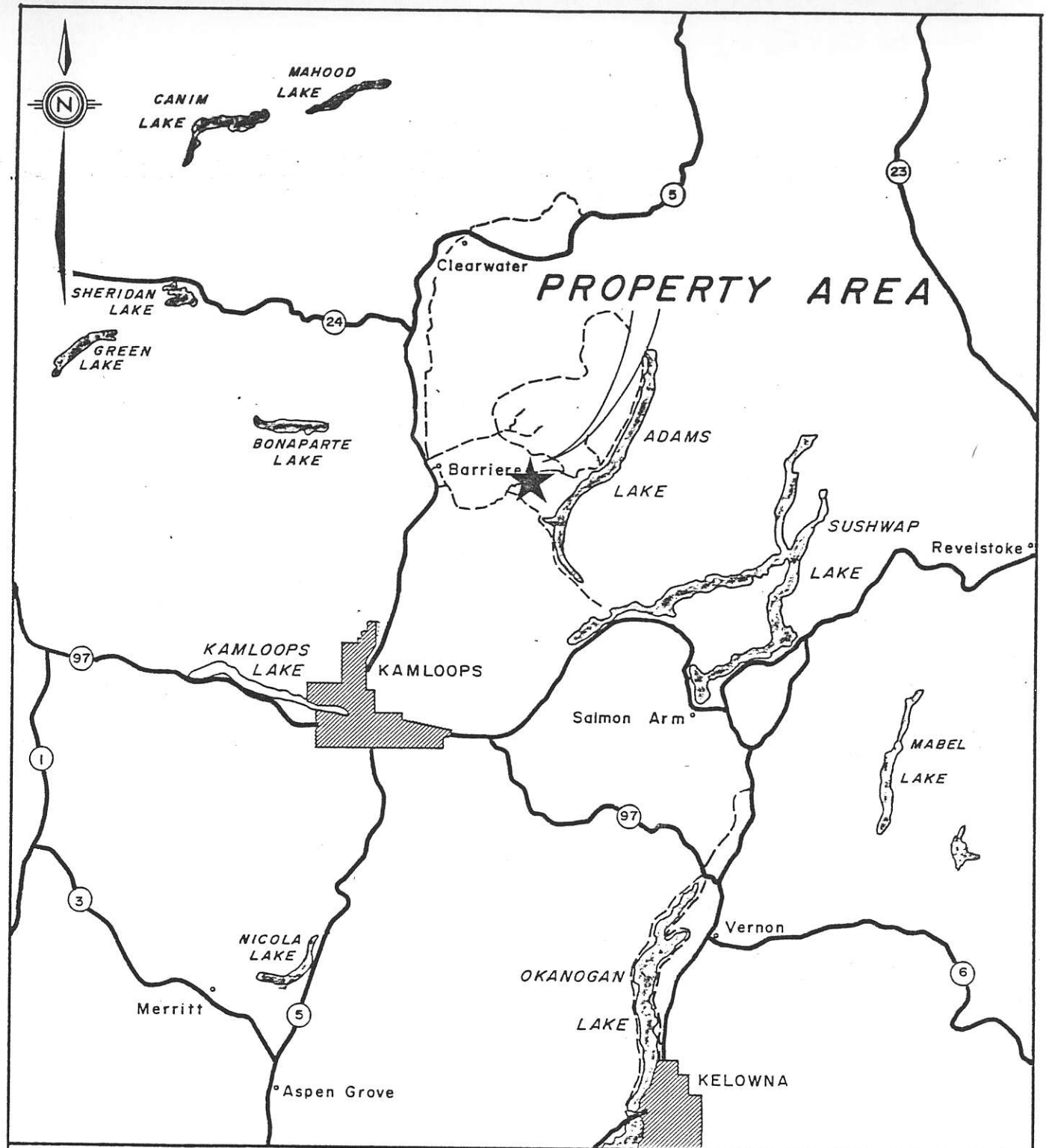
Access is by two or four wheel drive vehicle north from Skwaam Bay along the Adams Lake road to the Samatosum cutoff (28 1/2 km) and up the Samatosum road for 21 kilometres. Alternatively, access may be had up the Johnson Creek road from Sinmax Valley.

VEGETATION

The property is covered by douglas fir and lodgepole pine with lesser amounts of spruce, balsam and cedar. However the immediate area of the Rea deposit has been recently (1982) logged over and active logging continues in several places.

FAUNA

The area is classified as Class IV supporting little to no wildlife.



REA GOLD OPTION
LOCATION MAP

FIGURE 1

TOPOGRAPHY

Relief in the area is moderate. The elevation at the deposit site is approximately 1400m and the peak of Samatosum Mountain is 1996m. Johnson Lake is at 1100m and Adams Lake is at 460m.

HISTORY

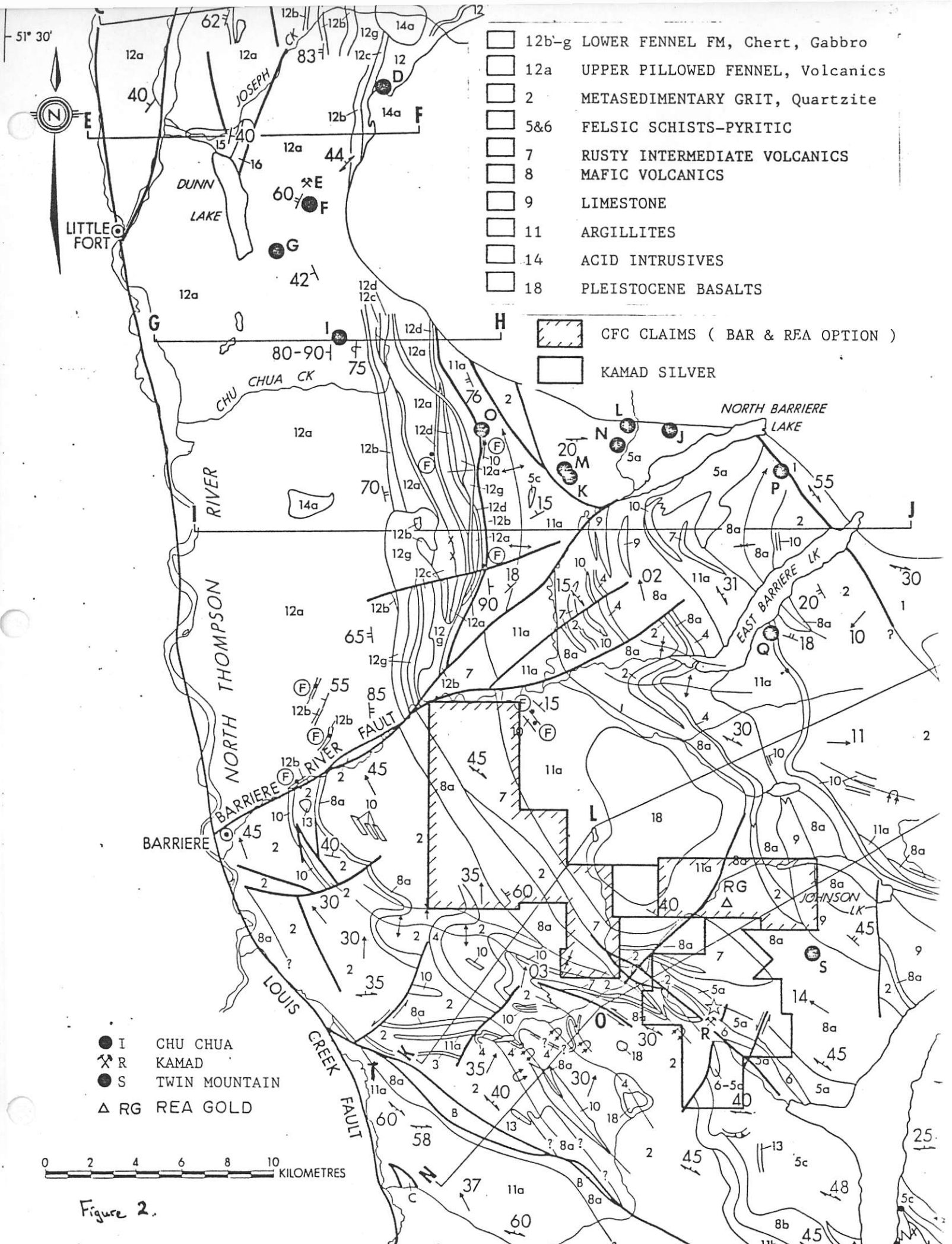
Intermittent exploration activity in the area since the 1920's has resulted in the discovery of numerous occurrences of base and precious metal sulphides, often accompanied by barite. Of these only one, the Homestake Mine, has any reported production.

The Rea Gold mineralization was discovered in August, 1983, by Mr. A. Hilton of Kamloops. The discovery was the result of a two year prospecting program based on recent government geological maps and using a field geochemical kit. Anomalous silt and soil samples localized the prospecting to an area on the NW flank of Samatosum Mountain. Active logging in the right area at the right time revealed a red, hematitic gossan subsequently found to overlie massive sulphides.

GEOLOGY

Regional

The area is underlain by a complex assemblage of volcanics and sediments of the Upper Paleozoic (Carboniferous) Eagle Bay Formation (Figure 2). These have undergone several phases of deformation involving folding and thrusting and producing a moderate to strong foliation in most of the units. Deformation generally increases eastward towards the margin of the Shuswap Complex. To the north, the Eagle Bay is intruded by granite and quartz monzonite of the Cretaceous Baldy Batholith.



Local

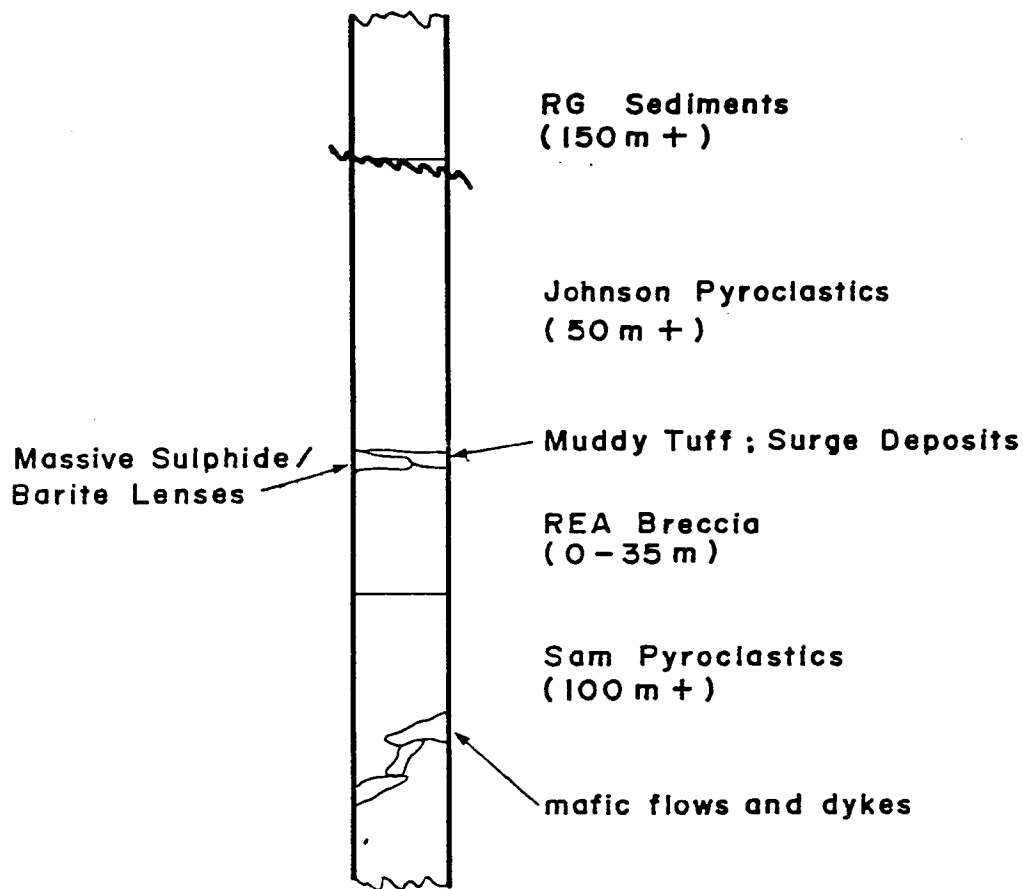
The massive sulphide lenses found on the Rea property are hosted by an overturned sequence of mafic to intermediate pyroclastics, chert and sediments illustrated diagrammatically in Figure 3. The Sam Pyroclastics form the stratigraphic footwall to the deposits. They are basaltic tuffs and lapilli tuffs with minor flows and dykes, which have been extensively altered to a quartz-sericite-carbonate-pyrite assemblage. Chlorite is a common component of the rock in proximity to the RG-8 lens. Carbonate is mainly dolomite with local magnesite. Within the unit, several individual episodes of deposition are separated by interflow breccia zones. These breccia zones are often anomalous in base and precious metals and may be cherty.

The Rea Breccia consists of laminated and brecciated chert and graphitic chert with local interbeds of tuff and lapilli tuff. It marks an incomplete hiatus in local volcanism and is very variable in thickness (0-36m, see figure 4). Where it is thickest it is largely composed of centimetre bands of grey to black chert which have undergone both primary and secondary deformation with spectacular results. Elsewhere it is interbedded and interlaminated with sericitic tuffs. At or near its top it hosts the massive sulphide - barite lenses.

Two massive sulphide lenses have been discovered to date, the L100 and RG-8 zones. Both consist of pyrite, arsenopyrite, sphalerite, galena and chalcopyrite with minor tetrahedrite. Massive barite stratigraphically overlies the sulphides in the RG8 zone. The barite contains small amounts of tetrahedrite as well as traces of the aforementioned sulphides. Both sulphide lenses are associated with weak pyrite (-arsenopyrite) stockwork zones (Figure 4a).

Texturally the massive sulphides are weakly banded and brecciated with arsenopyrite-rich, pyrite-chalcopyrite rich and sphalerite-galena rich areas. Figures 5, 6 and 7 show metal zonations against drillhole depth for holes RG-8, 21 and 25. They show sympathetic relationships between Ba and Ag on the one hand and Cu, Zn, Pb and As on the other. Au clearly straddles the interface between the sulphides and barite and shows no strong preference for either.

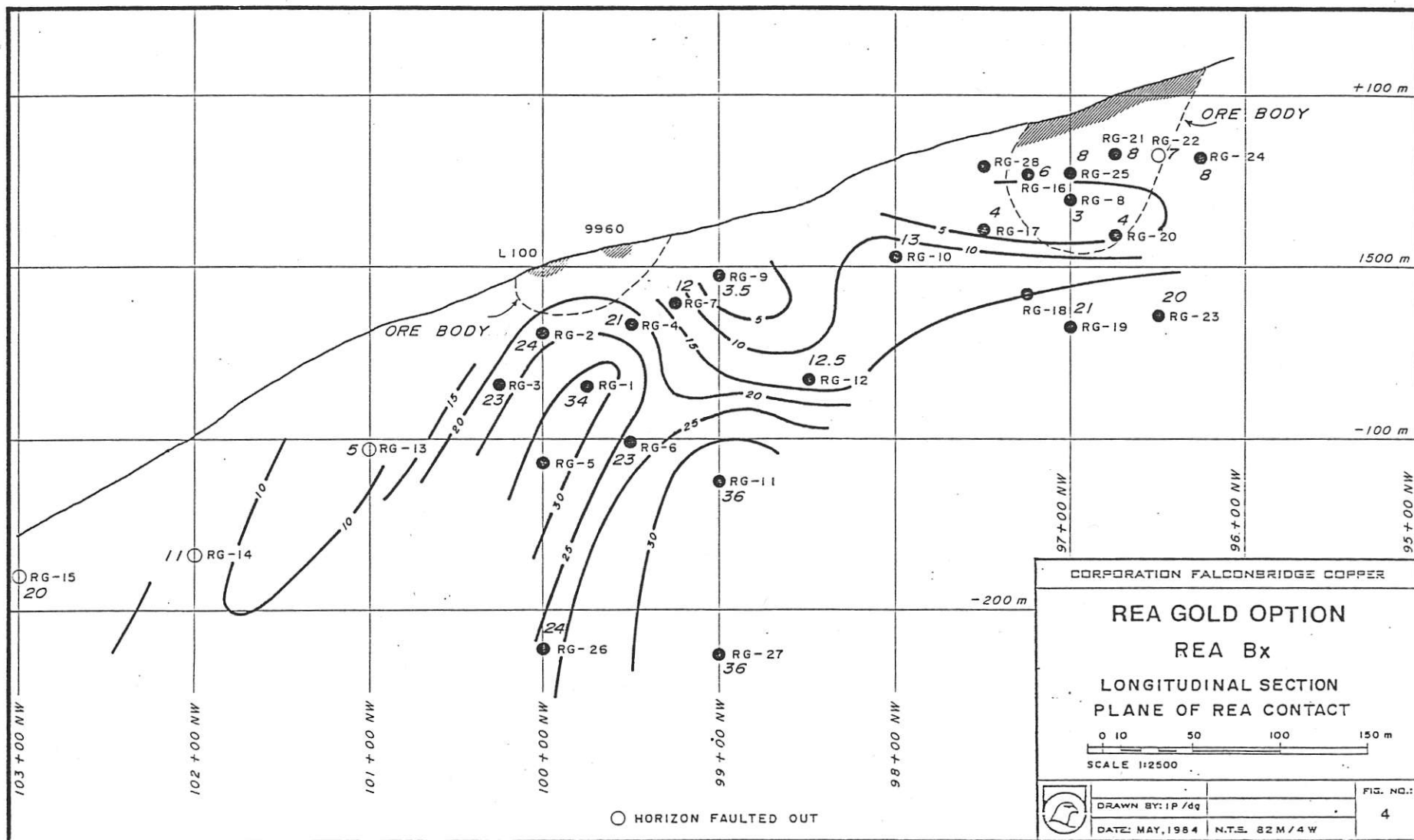
Depending upon the precise geological interpretation used, the shape of the RG-8 lens may be any one of those shown in Figures 8, 9 and 10.

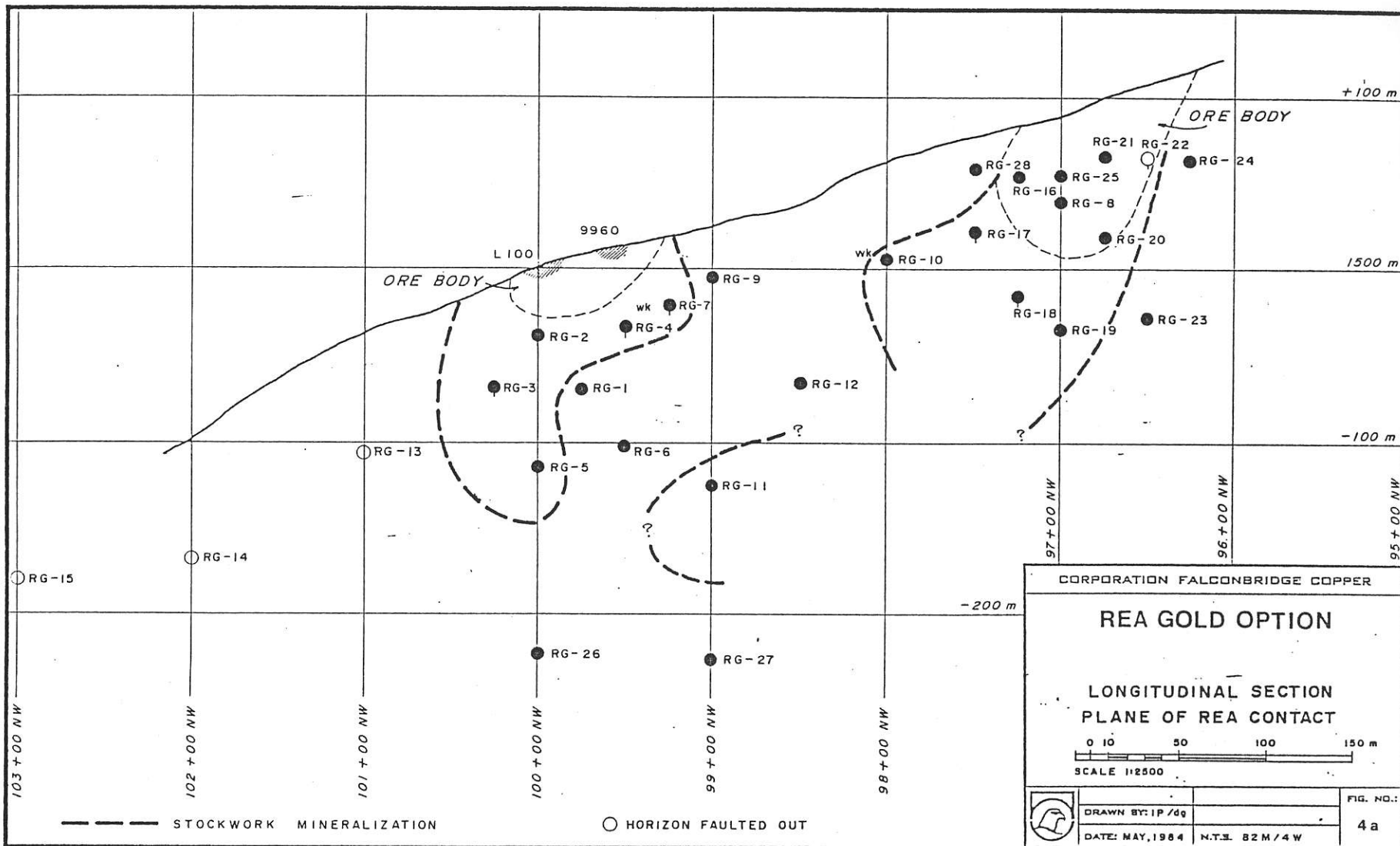


Chemistry

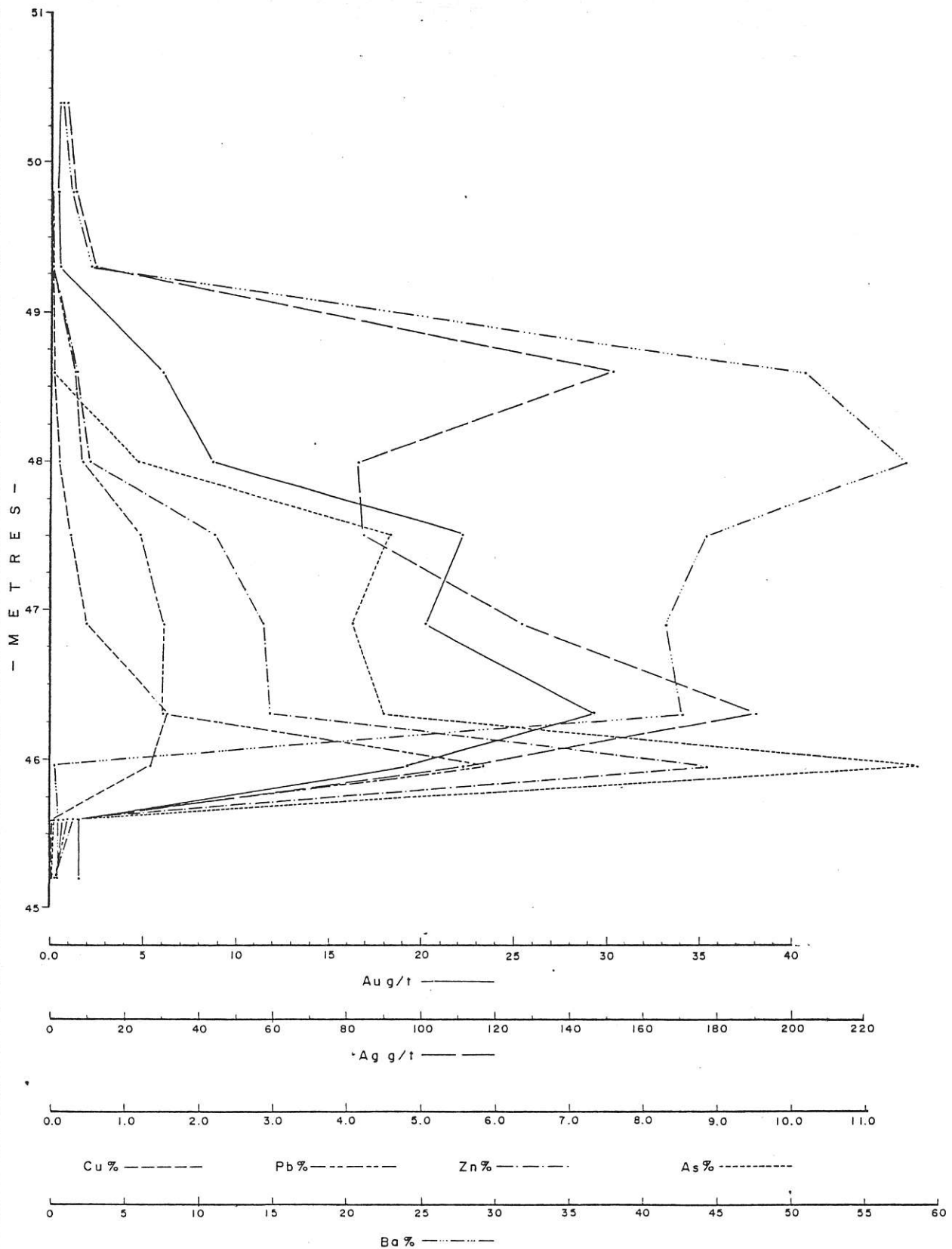
	SiO ₂	Al ₂ O ₃	CaO	MgO	Na ₂ O	K ₂ O	Fe ₂ O ₃	MnO	TiO ₂	LOI	Ba
SAM PYROS.	46.8	14.7	4.7	7.1	1.82	1.63	10.6	0.20	1.42	11.3	760
MAFIC FLOWS/DYKES	41.0	13.4	5.6	13.3	1.93	0.02	10.7	0.14	1.76	12.6	80
JOHNSON PF.	53.1	16.8	4.4	3.2	1.95	2.60	7.4	0.07	0.72	9.4	1900

Figure 3

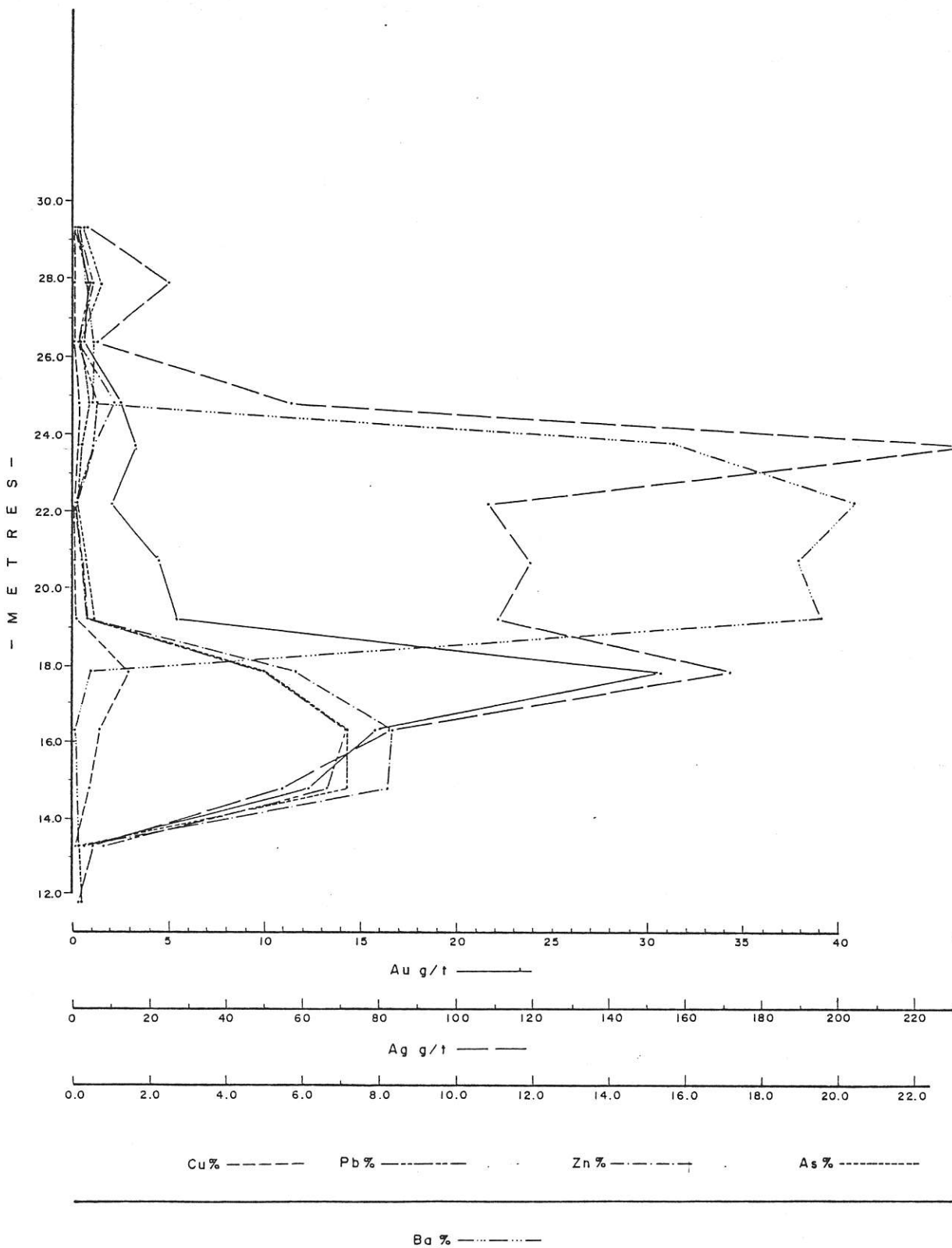




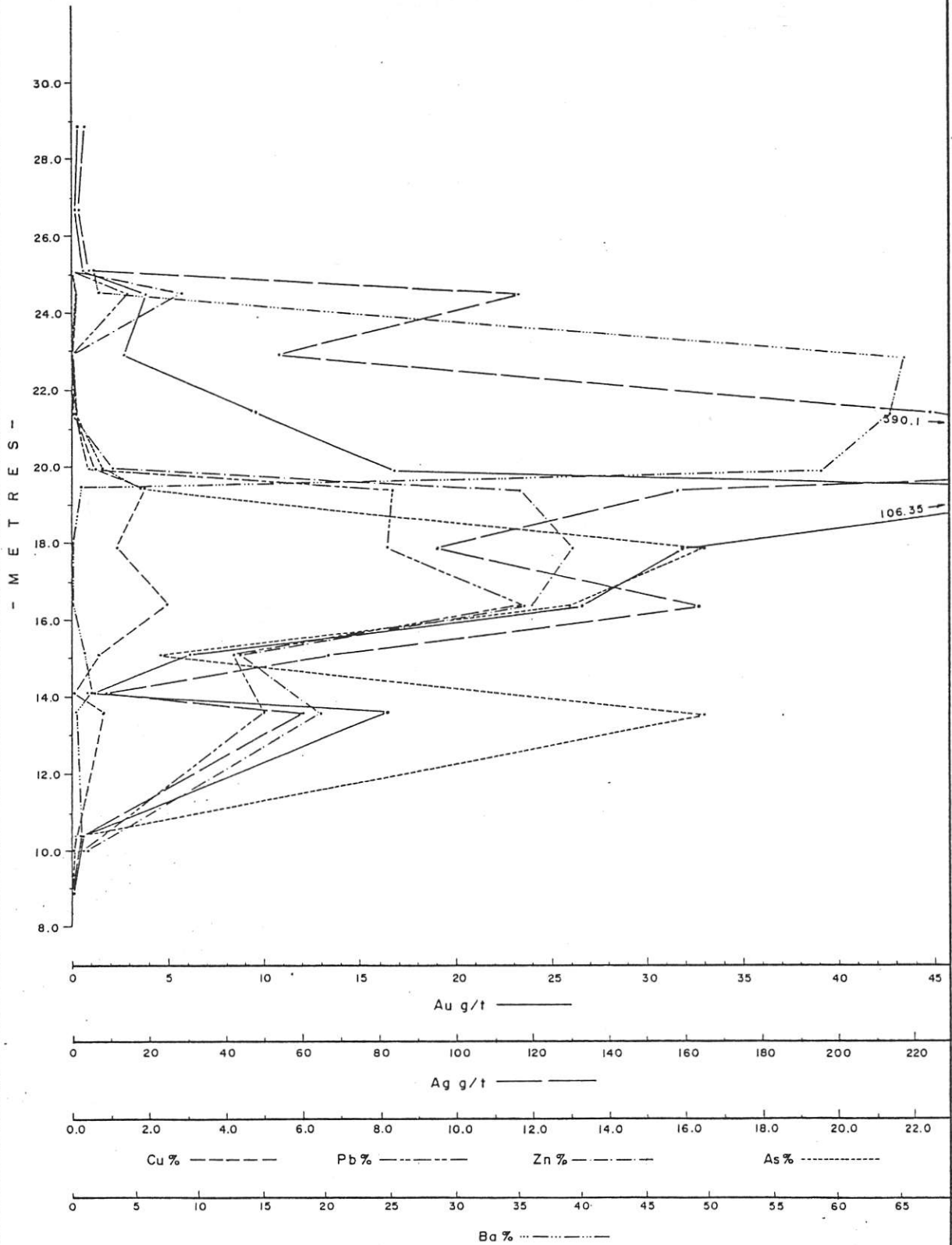
RG-8 INTERSECTION PLOT

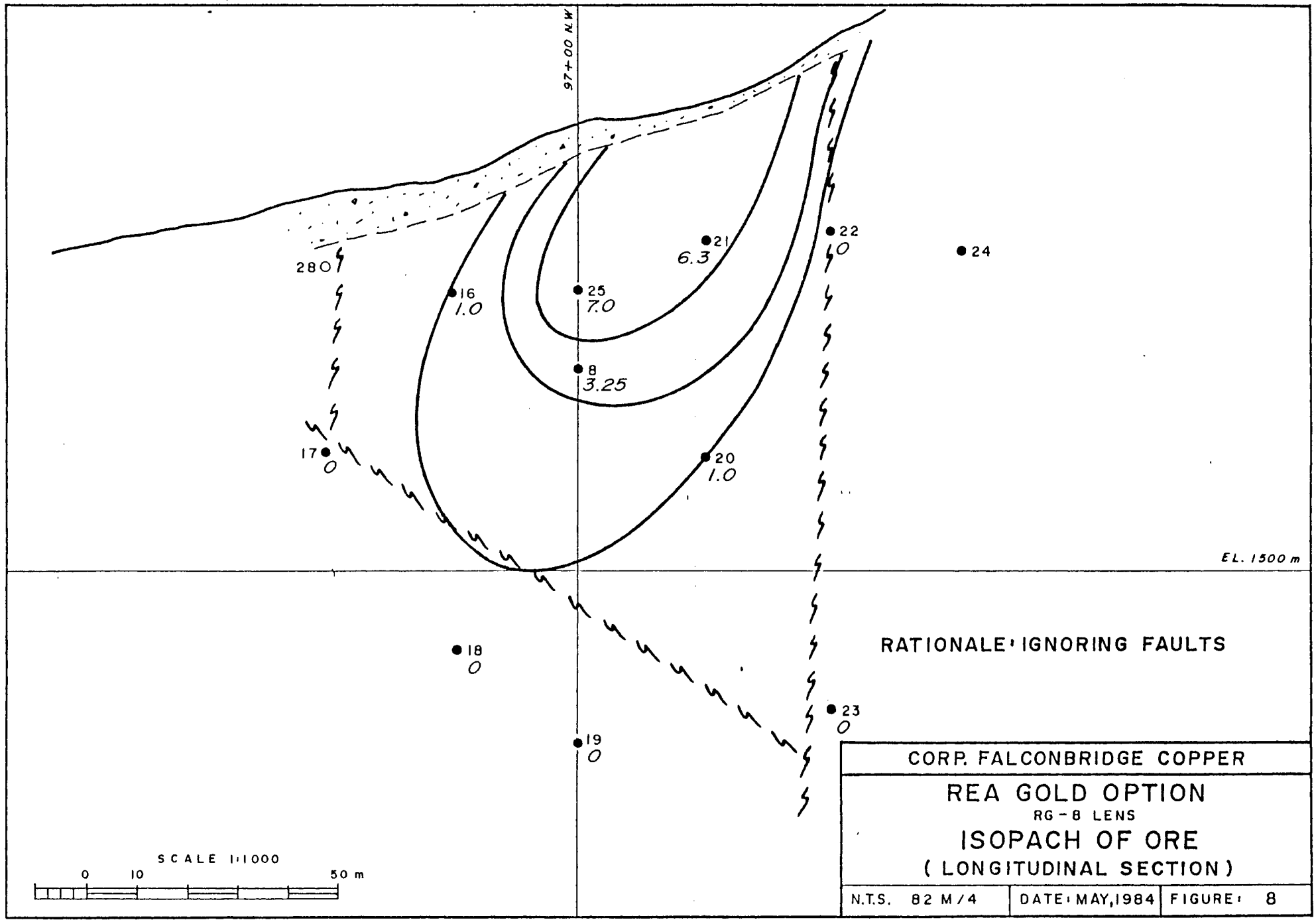


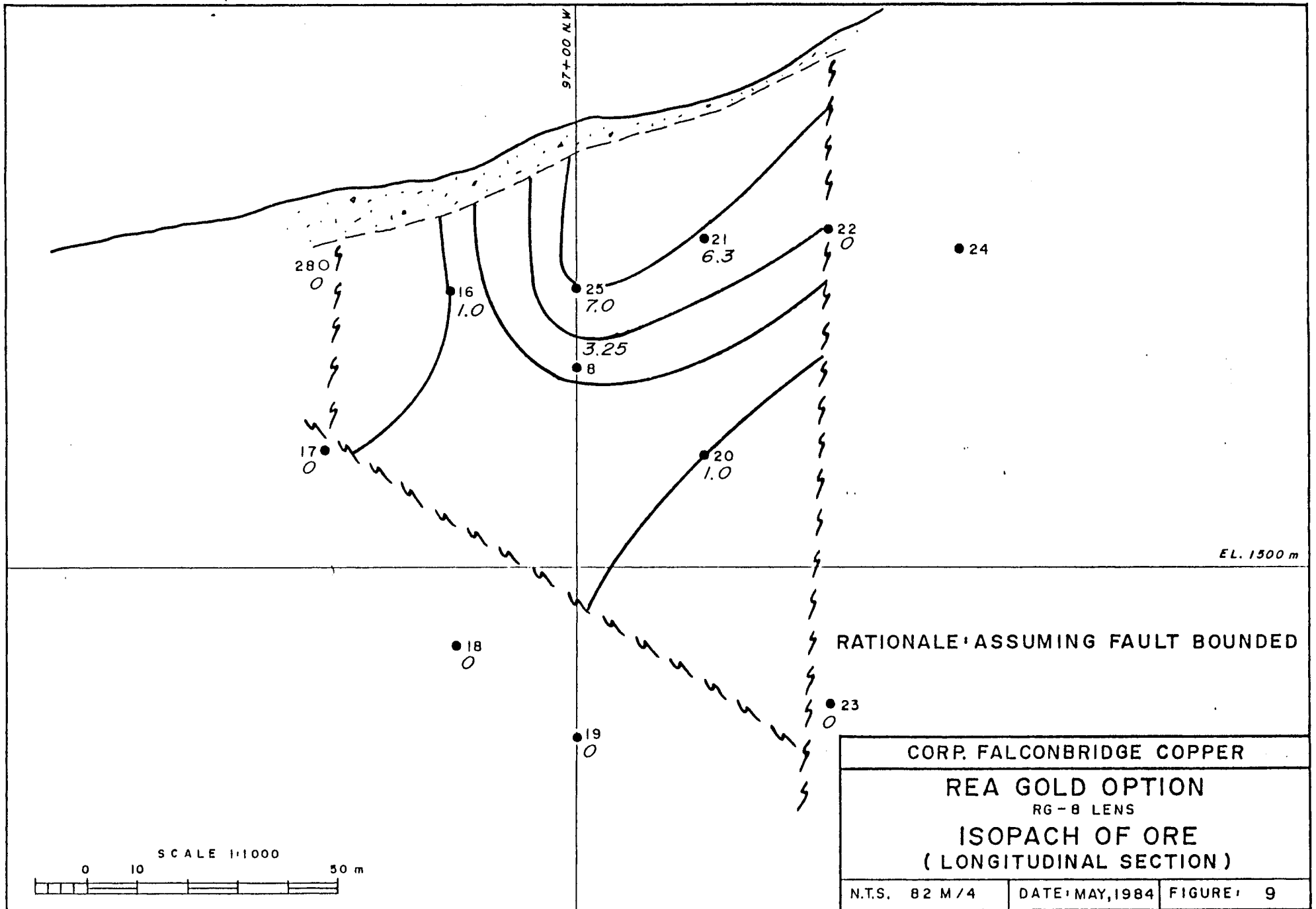
RG - 21 INTERSECTION PLOT.

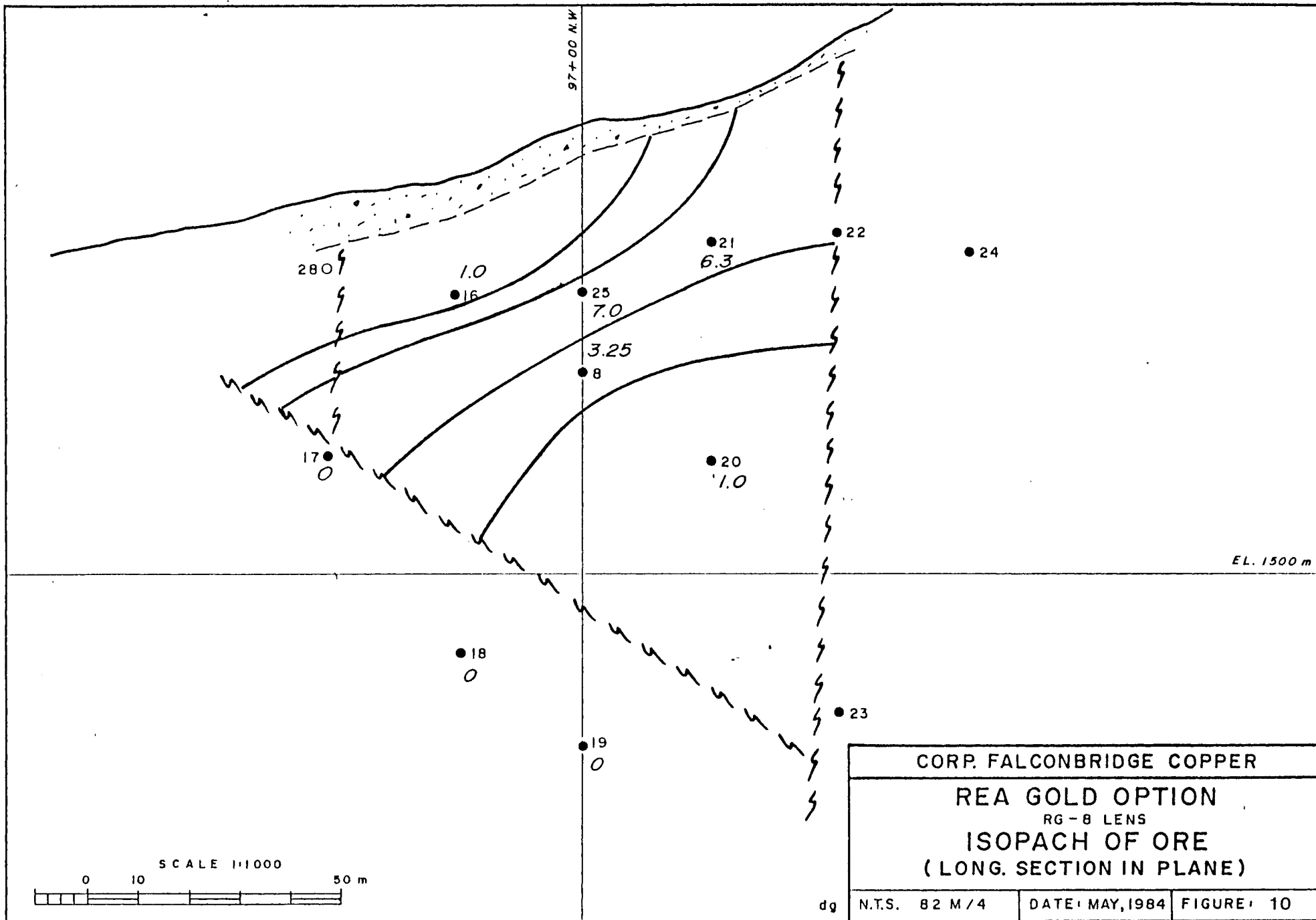


RG - 25 INTERSECTION PLOT









Isopachs of massive sulphides and barite are shown separately in Figures 11 and 12.

The Johnson pyroclastics, which form the stratigraphic hangingwall to the deposits, are a series of lapilli and ash flows and flow breccias of calc-alkaline andesite composition. Both lithic and juvenile lapilli are present locally, neither exceeding 2cm in diameter. Zones of almost in situ breccia with a black glassy matrix are common.

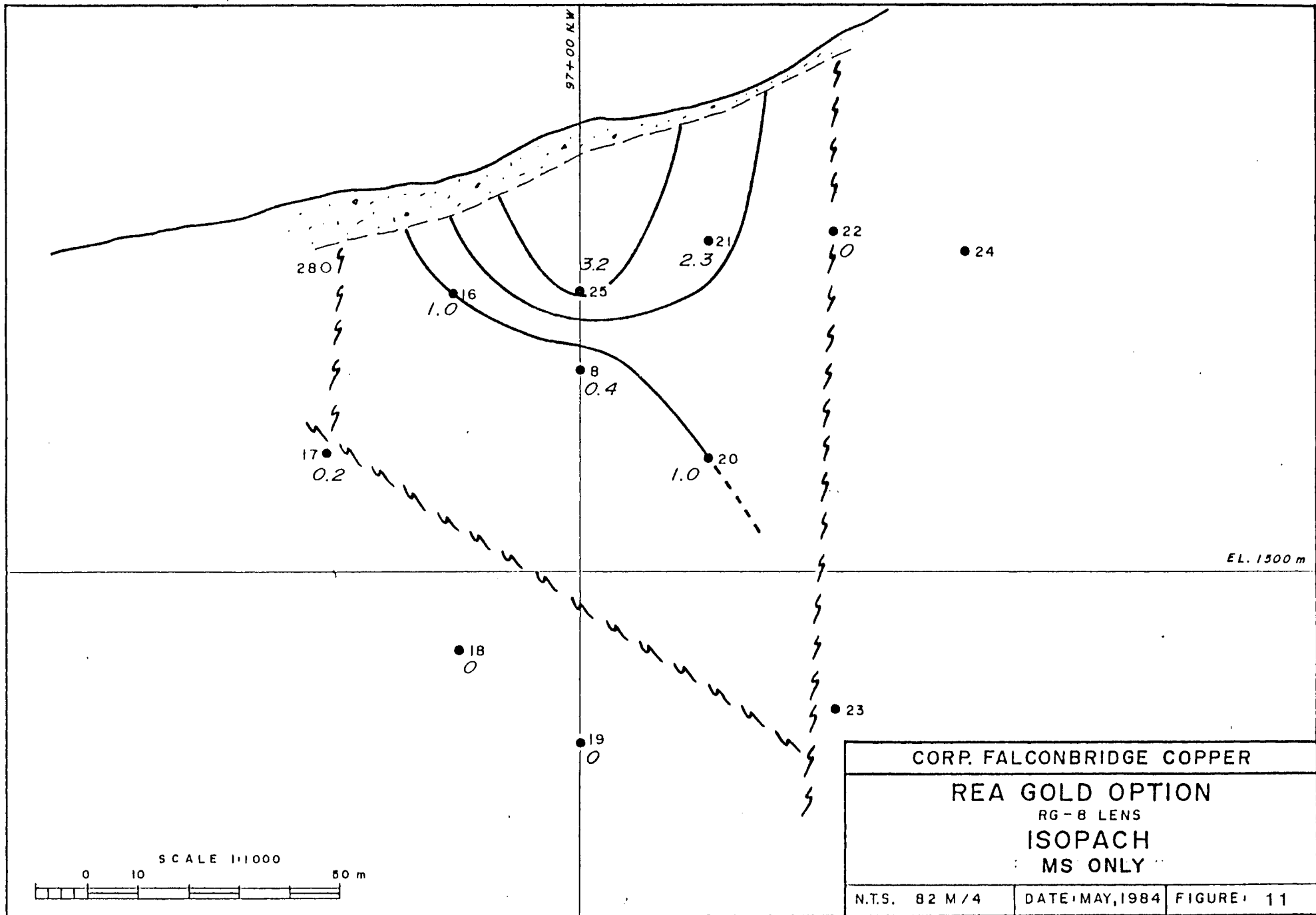
The contact between the Johnson pyroclastics and the Rea Breccia is commonly, though not exclusively, marked by a muddy, chloritic tuff. It is best developed near the ore lenses where it may be up to 26m thick (Figure 13). Also near ore, the presence of thin beds of coarse clastic detritus (argillitic, quartzo-feldspathic and sericitic clasts) has been noted. These are often pyritic. Both chlorite and pyrite appear to have been formed in response to the encroachment of these basal pyroclastic surge deposits upon still active hot springs.

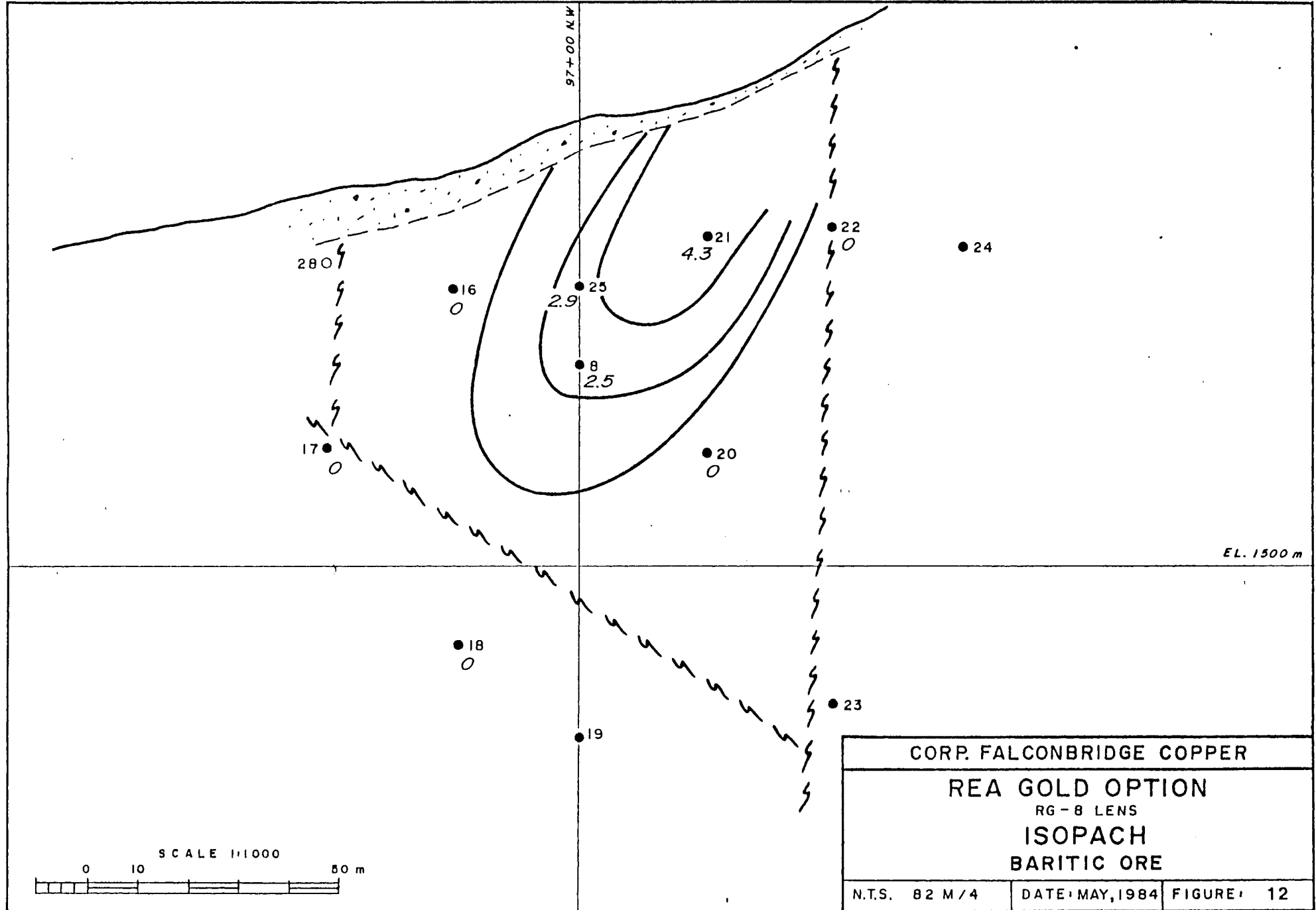
The top of the Johnson pyroclastic sequence is marked by a transition to greywacke and argillite. This transition, in the form of interdigitation and the occurrence of argillite chips in the pyroclastics, is not seen in all areas because of a thrust fault at a very low angle to bedding. This has the effect of cutting the pyroclastics out completely near the RG-8 lens (Figure 14) where muddy tuff is in thrust contact with the RG Sediments.

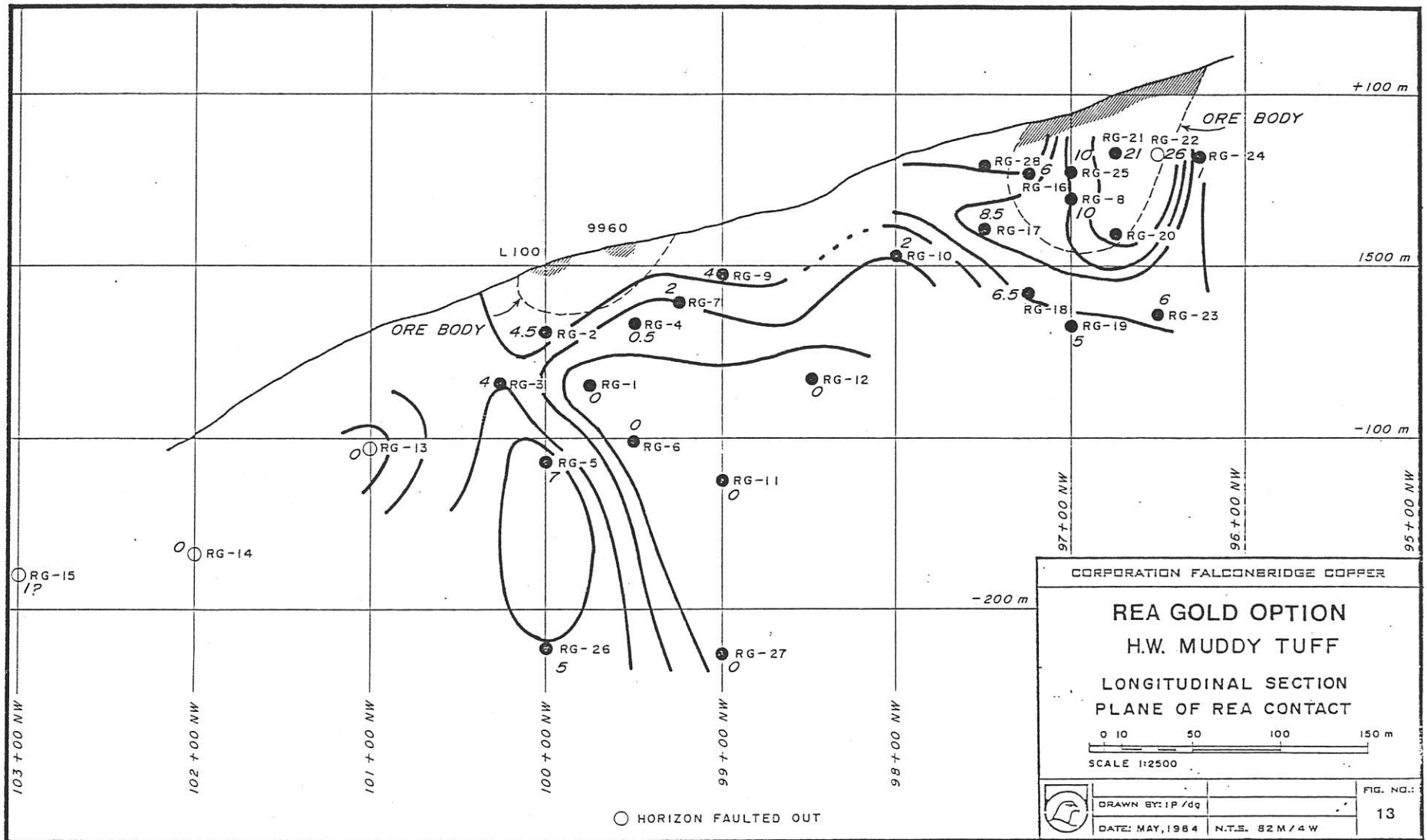
The RG Sediments themselves consist of interbeds of argillite and greywacke. The former are often graphitic and individual beds, up to a few centimetres thick, may be strongly pyritic. Soft sediment features are present. The latter are quite coarse grained, quartzose and often fragmental. Fragments, consisting of reworked felsic lapilli, argillite, blue quartz and chert, commonly show distinct grading. The thickness of this sedimentary package is unknown at this time.

LITHOGEOCHEMISTRY

To date, lithogeochemical sampling has been restricted to drill core and is concentrated around the known mineralization. Consequently there is an insufficient spread of data to allow clear spatial patterns to emerge. In







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REA GOLD OPTION

H.W. MUDDY TUFF

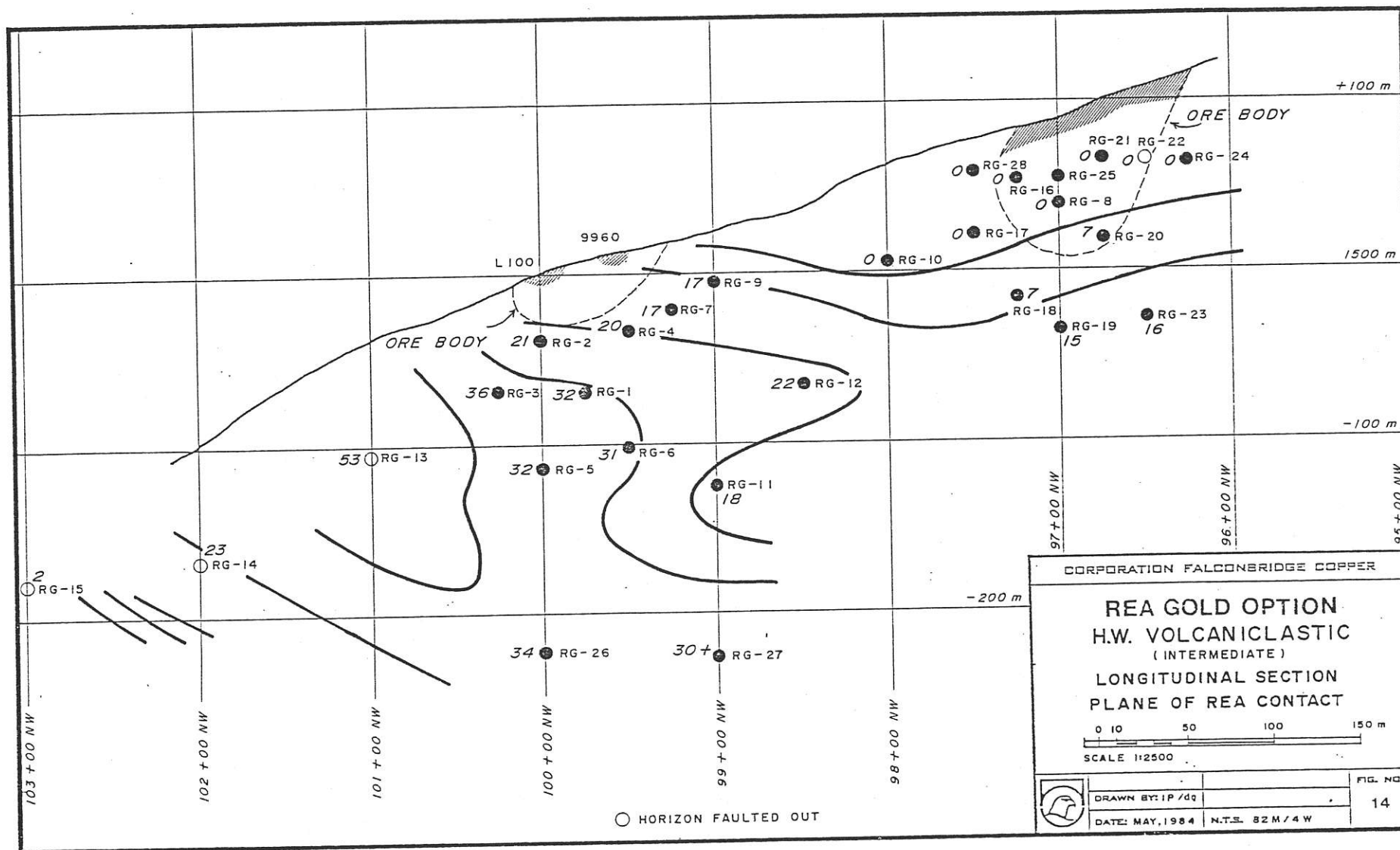
LONGITUDINAL SECTION
PLANE OF REA CONTACT

0 10 50 100 150 m

SCALE 1:2500

	DRAWN BY: IP/dq	FIG. NO.:
	DATE: MAY, 1984	N.T.S. 82 M / 4 W

13



CORPORATION FALCONBRIDGE COPPER

REA GOLD OPTION
H.W. VOLCANICLASTIC
 (INTERMEDIATE)
LONGITUDINAL SECTION
PLANE OF REA CONTACT

0 10 50 100 150 m
 SCALE 1:2500

	DRAWN BY: IP /dq	FIG. NO.:
	DATE: MAY, 1984	N.T.S. 82M/4W

14

addition, almost every sample taken has been visibly altered to some extent so a rigorous statistical analysis is, as yet, impossible. However, Table 1 summarizes the available data and presents some obvious factors. For example, Na₂O values are distinctly low in both the footwall and hangingwall. SiO₂, CaO, MgO, K₂O, Fe₂O₃ and TiO₂ all show much wider ranges than would normally be expected for a volcanic rock unit. Ba is considerably enhanced in the Johnson Pyroclastics (hangingwall), but trace metals generally show fewer and less pronounced high values.

Potentially useful associations are indicated by the correlation matrix in Table 2. Note, for example the strong SiO₂ - CaO - MgO - LOI correlation. Although this can confidently be ascribed to a carbonate affiliation, it is not yet possible to say whether carbonate deposition is related to mineralization.

Another major element association is that of K₂O - MgO - Na₂O. The K₂O - MgO correlation is usually due to primary mineralogical differences, but the K₂O - Na₂O negative relationship is almost certainly caused by albite breaking down, under hydrothermal conditions, to sericite.

Several good trace and minor element correlations are also apparent. Most notably Au shows strong correlation with Ba (0.959), As (0.779), Pb (0.761) and Zn (0.618). Pb-As (0.992) shows a strong correlation as does Pb-Zn (0.609). It is quite possible that these relationships will prove useful in later target identification.

Further work remains to be done on the lithogeochemical data and it will benefit significantly from more widespread sampling.

IMPLICATIONS FOR EXPLORATION

Despite the limited areal extent of exploration to date several important geological/geochemical features have emerged which should help guide future work. Among the more important are:

- the presence of chert and chert breccia (REA BRECCIA) at the mineralized horizon
- the apparent lack of intimate felsic association
- quartz-sericite±chlorite (±carbonate?) alteration of mafic volcanics

- overturned stratigraphy suggests the potential for numerous structural repetitions of horizons
- evidence of weak mineralization between pyroclastic episodes bodes well for stacked horizons
- widespread Na_2O depletion, more localized trace metal enrichment
- Ba enrichment of immediate hangingwall.
- strongly silicified stockwork zones present near sulphide lenses
- close to volcanic-sediment transition?

TABLE 1 SUMMARY STATISTICS

SAM PYROCLASTICS (39)

<u>Element</u>	<u>Range</u>	<u>Mean</u>	<u>Mode</u>	<u>Comments</u>
Na ₂ O(%)	0.11-4.83	1.82	1.25	64% of samples less than 2% not poss. to define 'anomalous'.
Ba (ppm)	60 - 9700	760	350	82% are less than 500ppm therefore >500ppm = anomalous.
Zn (ppm)	42 - 367	106	70	88% form normal to log normal pop. between 42 and 140. >140 distinctly anomalous.
SiO ₂ (%)	20.0-61.2	46.8	47.5	x+ = 54.6 (=7.8) x- = 39.0.
CaO(%)	0.57-12.8	4.71	4.5	broad fairly even distribution 0-9%. Greater than 9% obviously different.
MgO(%)	0.25-15.0	7.1	7.0	Like CaO, broad population, somewhat normal, no tails.
K ₂ O(%)	0.01-4.33	1.63	0.5	Steadily decreasing population from 0.5. No obvious anomalies.
FeO _T (%)	7.2-14.6	10.6	11.0	x+ = 12.25 (=1.66) x- = 8.95.
TiO ₂ (%)	0.53-2.14	1.42	1.4	Possible second population mode at 1.8.
Al ₂ O ₃ (%)	10.2-27.4	14.0	13.5	Single Elter at 27.4 (removed from mean). Otherwise max.=17.
MnO(%)	0.024-0.492	0.2	0.175	90% are between 0.1 and 0.35.
LOI(%)	6.65-19.3	11.3	9.0	Poss. secondary mode at 13%.
Cu(ppm)	31 - 109	66	65	Secondary mode at 85ppm.
Pb(ppm)	1 - 240	20	1.5	85% are less than 24ppm.
Ag(ppm)	0.1 - 1.0	0.37	0.15	92% less than 0.9.
Au(ppb)	1 - 250	28	10	68% are less than 20ppb.
As(ppm)	5 - 1650	160	50	81% are less than 80ppm.

JOHNSON PYROCLASTICS (21)

Na ₂ O(%)	0.51-4.57	1.94	1.25	broad, fairly even population.
Ba(ppm)	430 - 7000	1940	1300	in contrast to Sam Pyros, 80% are greater
Zn(ppm)	38 - 310	113	70	88% less than 160ppm.
SiO ₂ (%)	39.8-66.3	53.1	52.5	x+ = 58. x- = 47.4
CaO(%)	0.41-9.21	4.37	4.5	fairly normal x+ = 6.34 x- = 2.40
MgO(%)	1.56-8.84	3.20	2.50	95% between 1.56 and 5%.
K ₂ O(%)	0.77-4.20	2.60	2.25	x+ = 3.43 x- = 1.77
FeO _T (%)	2.97-12.8	7/43	7.0	x+ = 9.8 x- = 5.06
TiO ₂ (%)	0.12-1.37	0.72	0.7	71% between 0.4-0.8.
Al ₂ O ₃ (%)	15.1-18.1	16.8		only 6 samples in population.
MnO(%)	0.023-0.19	0.07		only 6 samples in population.
LOI(%)	6.35-15.5	9.38	9.5	90% between 6-11.
Cu(ppm)	3 - 90	23		
Pb(ppm)	1 - 69	14	5	80% less than 20ppm.
Ag(ppm)	0.1 - 1.2	0.24	0.15	81% less than 0.2ppm.
Au				insufficient analyses.
As				

