82-483 - 15289

Mineralogic

ASSESSMENT REPORT ON

JACK CLAIMS

LENS MOUNTAIN 82N/14E

GOLDEN MINING DIVISION

Lat 51°54'N Long 117°08'W

for

DIA MET MINERALS LTD.

KELOWNA, B.C.

by C.E. Fipke

C.F. MINERAL RESEARCH LTD.

KELOWNA, B.C.

AUGUST, 1986

TABLE OF CONTENTS

ASSESSMENT REPORT ON JACK CLAIM GROUPS, GOLDEN MINING DIVISION

INTRODUCTION

The Jack Claim group(s) consist of eight contiguous claims totalling 121 units (figure 1). The claims are presently 100% owned by Dia Met Minerals Ltd.. C. E. Fipke of C.F. Mineral Research Ltd. was contracted as operator to complete two years assessment work on the claims. As a consequence the following exploration work initiated during the period June 1, 1985 to June 1, 1986 was completed on the Jack claim group(s): helicopter collection of a ±1000 kg. sample of -6 mesh stream sediments from the drainage area of the Jack kimberlitic diatreme; field testing two models of jig concentrators for diamond recovery; concentrating 41 ±10 kg. follow-up samples of glaciofluvial sediments as well as a bulk 440 kg. sample of -6 mesh stream sediments from the Jack kimberlitic diatreme area and two bulk ±35 kg. rock samples from the Jack diatreme for diamond indicator minerals; binocular microscope extraction of potential diamond indicator minerals from the resultant concentrates; making polished sections of potential diamond indicators extracted from the three bulk samples and scanning electron microscope scanning polished grains to identify kimberlitic grains from regional grains; and selected S.E.M. analysing kimberlitic chromites, ilmenites, pyropes and Cr. diopsides.

LOCATION, TOPOGRAPHY AND ACCESS

The Jack claim, the principal claim of the group, is located Latitude 51°54'N, Longitude 117°08'W, NTS 82N/14E in the Golden Mining Division. This claim straddles the ridge leading south-

easterly from Lens Mountain, approximately 60 km. in a direct line north-northwesterly from Golden, and 4.5 km. west of the B.C.-Alberta border. The claim group extends approximately 10 kilometres from the JACK 1 claim in the north to the FRANK 1 claim in the south and spans approximately 5 kilometers at its widest point.

The topography is extremely rugged and hazardous. Parts of the claims on both sides of the ridge are under glaciers and perennial snow cover with exposed precipitous slopes and cliffs. Elevations on the property range from 1000 metres (3350 ft.) at the south edge of the FRANK 1 claim to approximately 3000 metres (9700 ft.) on the principal JACK 1 claim.

The claims are accessible by helicopter from Golden. There is a logging road that gives access to within 7 kilometers west of the property. Evans Logging Company has surveyed a logging road onto the claims and report that the road, which would give access to 4 kilometers southeast of the Jack kimberlitic diatreme, is scheduled to be completed in 1986.

RECENT GEOLOGY

According to geologist Hugo Dummett "as presently defined, (the Jack Diatreme) has approximate surface dimensions of 1200m by 300m and has an area of about 57Ha. The outcropping units are predominantly kimberlitic, sandy marls and younger kimberlitic tuffs. These rocks contain abundant kimberlitic detritus, principally pyrope, chrome diopside, picroilmenite and chromite. In addition, one very small, colorless, octahedral diamond has been recovered from the marl. The diatreme is probably exposed at a very high level and, as yet, no outcropping

units other than those that normally occupy the crater have been recognized.

The diatreme has been emplaced into a terrain that is very strongly faulted and folded. It is hosted by rocks that are predominantly Early Paleozoic. (Late Cambrian through ?Silurian) carbonate-rich sediments. These units are part of the east-dipping limb of a major NW-SE striking anticline in the upper plate of a thick sedimentary package that has been thrust to the east. This imbrication is probably Laramide in age and the date of diatreme emplacement is therefore less than 54 Ma because it post-dates the youngest tectonism.

The regional setting of the diatreme is similar in many respects to other diamondiferous diatremes in the W. Cordillera of N. America inasmuch as it occurs in an area of thickened crust. Its postulated close temporal association with a major orogenic event is however atypical for N. America."

METHODS

1) Field Methods

The 440 kg. and 1000 kg. samples were collected at site Jack -6SS, figure 3, by wet sieving the -6 mesh glaciofluvial sediments by hand through a 6 mesh field screen. The resultant -6 mesh glaciofluvial sediments, derived from the general Jack diatreme area, were placed by sampling technicians Ken Heaton, Brent Carr and Dan Tomlin, in 15 gallon drums and helicopter slung to a locale where the samples could be trucked to the C.F. Mineral Research concentration laboratory located in Kelowna, B.C.

Two 5 gallon pails of rock outcrop grab samples over a strike distance of about 40 meters were collected from the Jack diatreme sandy kimberlitic marl phase. The sample labelled Jack 10 was collected from the marl phase about 2 meters stratigraphically higher than Jack 14B. The rock sample sites are plotted on figure 3.

During the foregoing bulk sample program, completed during the week of September 18, 1985, an INEX diamond indicator concentrating jig was field tested with ten fluorescent yellow coated -20+35 mesh diamond chips and -10 mesh glaciofluvial sediment feed obtained from the Jack -6SS field site by geological technician Brent Carr under the supervision of geologist C. Fipke. In addition ten -20 +35 mesh fluorescent coated diamond chips were added to 5 gallons of -6 mesh glaciofluvial sediments from site Jack -6SS and passed over a Pulsator jig, by the equipment manufacturer with a unit set up behind the C.F. Mineral Research Ltd. laboratory.

A total of 41 $\pm$8-10 kg. samples of -20 mesh glaciofluvial stream sediments were wet screen collected at the "J" sites, figure 3, by geologist C. Fipke and technicians, Brent Carr, Dan Tomlin etc. These were placed in plastic bags and sent for laboratory concentration at C. F. Mineral Research Ltd. in Kelowna, B.C. for the assessment period July 1, 1985 to July 1, 1986.

2) Laboratory Methods

The 440 kg. Jack -6SS bulk sample of stream sediments was washed, wet sieved, dried, and weighed. The entire dried 440 kg. sample was then T.B.E. heavy liquid separated so

that the resultant lights and -6 mesh +0.5 micron sinks were both concentrated and washed with acetone. The T.B.E. heavies were then methylene iodide heavy liquid separated and resultant lights and heavies concentrated and washed with acetone. The resultant heavy fraction was then electromagnetically separated six times so that -6 mesh +0.5 micron heavy magnetite, picroilmenite, chromite-Chrome diopside-pyrope and diamond concentrates were made. The resultant diamond concentrate was submitted to a series of hot concentrated hydrochloric, hydrofluoric, aqua regia, nitric and sulfuric acid treatments whereby the entire -6 mesh diamond concentrate in each case was boiled to dryness and then submitted to an additional methylene iodide separation. The resultant ilmenite and chromite-chrome diopside-pyrope were submitted to a total of 219 hours of binocular microscope inspection whereby potential diamond indicator minerals were extracted from the concentrates until total project budget was expended. About 600 grains were polished and scanning electron microscope scanned to identify potentially kimberlitic grains. Quantitative S.E.M. analysis of the kimberlitic indicator minerals was then attempted. However, the quantitative analysis of standard grains gave inaccurate results and after much diagnostic testing it was established that there was ice on the detector. Thus, only semiquantitative spectra analysis rather than quantitative analysis could be completed.

The two bulk rock samples, Jack 10 and Jack 14B, were concentrated and analysed in a similar manner to the 440 kg. bulk stream sample except that the rock samples were crushed

and pulverized to -6 mesh and the -6 mesh ball milled for periods of nearly four weeks. About every four hours during the ball milling, the sample was removed from the ball mill and the -20 mesh ball milled rock wet sieved from the +20 mesh rock. The ball milling was completed for periods of about four weeks until only minor amounts of +20 mesh remained. The same water used for ball milling was used in the washing and wet sieving. After the washing and wet sieving was completed most of the dirty clay water was decanted after 5 minutes of settling into 5 gallon pails. The clays were settled out of the water during a several month period so that fusion for micro-sized diamond could be later completed. All potential chromites and ilmenites and two hundred and forty potential pyropes recovered from the final concentrates were polished and S.E.M. analysed.

The 41 $\pm$(8-10) kg. -20 mesh glaciofluvial follow-up samples were washed, wet sieved, and jigged. About 2000 gms. -20+35, 2000 gms. -35+60 and all the -60 jig concentrates were dried and submitted to tetrabromoethane and methylene iodide heavy liquid separations. The resultant heaviest concentrates were electromagnetically separated six times into heavy magnetic, ilmenite, Cr. diopside and pyrope and diamond indicator mineral fractions. Two of the 41 indicator mineral sample concentrates were accidently knocked off a shelf and intercontaminated. All of the ilmenite and pyrope-Crd. and diamond indicator fractions were binocular microscope examined by technicians for diamond indicator minerals. Any potential diamond indicator minerals were placed in vials and the estimated numbers of potential indicator mineral present in the concentrates recorded.

RESULTS

The binocular microscope results are plotted on figure 3. The scanning electron microscope results are given on Plates 1 to 19 .

Only three of the ten diamond chips were recovered in the INEX jig testing. Much difficulty was encountered in passing the -10 mesh sediments through the hopper feed of the jig as the water in the sample continuously froze in the hopper and plugged the hopper feed orifice.

As many as seven of the ten diamond chips were recovered during several passes of the JACK -6SS sample through the pulsator jig. As the volume of heavy concentrate to waste is high using the pulsator jig, diamond recovery would require an additional concentration process.

Grain counts of kimberlitic indicator grains picked from sample concentrates, using a binocular microscope, were plotted on Figure 3.

Potentially kimberlitic indicator grains were found to be present in many of the -20 mesh stream sediment and glaciofluvial bulk samples collected in the claims area. Significant results were found in samples in the main drainage area including glaciofluvial samples J2, J3, J5, J12 and J27 in the south of the claims, J35 and J41 in the central claims area and stream sediment samples J7 and J8 on the southern tributary of Mons Creek in the SE of the claims. In addition stream sediment samples JACK -6SS and rock samples JACK 10 and JACK 14B in the NW of the claims contained abundant brown, rounded pyropes (possibly of kimberlitic origin) and other potentially kimberlitic indicator grains.

Microscope technicians did not find any diamonds in the JACK 10 or JACK 14B samples or in part of the JACK -6SS sample although the latter has still to be completed. However, small micron sized diamonds could possibly be present in the stored clay tailings fractions. These would need to be fused to destroy all minerals other than diamonds to establish whether or not the original samples contain micro-diamonds.

Scanning electron microscope elemental scans of grains from the JACK 10, JACK 14B and JACK -6SS samples are shown in PLATES 1 to 9. The dot maps were produced for the elements Mg, Ti, Cr and Fe which were color coded as shown and potential kimberlitic grains could then be identified on the photograph of the area scanned.

PLATES 1 and 2 of brown, rounded pyrope grains from the JACK 10 and JACK 14B samples, show that many of these grains have compositions with high magnesium and low iron contents. Printouts of spectra collected on these grains confirm this Mg:Fe ratio (PLATES 10 and 11) and semi quantitative analyses (PLATES 12 & 13) further show the high Mg content of these grains. These brown, potentially kimberlitic, pyrope grains were abundantly present ($\pm$4000) in the JACK 10 and JACK 14B rock samples.

PLATES 3 and 4 show elemental scans of some chromites and picro-ilmenites found in the JACK 10 and JACK 14B samples. PLATE 14 is a quantitative analysis of a potentially kimberlitic ilmenite grain from the JACK 10 rock sample.

Elemental scans of grains from the JACK -6SS sample (PLATES 5 - 9) showed that although most of the grains picked out were magnetites some chromites and ilmenites were also present. A spectrum collected from one of the chromite grains shown in PLATE 5 is

printed out as PLATE 15 and a semi quantitative analysis of this grain is given on PLATE 16. This analysis shows the grain to be very high in chromium.

Spectra collected from a mauve pyrope and a brown pyrope from the JACK -6SS sample are shown on PLATES 17 and 18. The composition of the mauve grain is much higher in Mg and Cr than the brown grain but both are relatively low in Ca. PLATE 19 is a spectrum collected from a chrome diopside grain from the JACK -6SS sample.

DISCUSSION OF RESULTS AND CONCLUSIONS

The models of jigs tested were not efficient in recovering small diamonds, the INEX jig had a very low through put, the pulsator jig had substantial amounts of waste in the diamond concentrate

The binocular microscope results plotted on Figure 3 show possibly anomalous areas in the southern part of the claims area (samples J5, J2, J3), in the central area in the vicinity of samples J29 and J40 in the south eastern claims area.

The SEM analyses of grains from the JACK 10, JACK 14B and JACK -6SS samples indicate the presence of potentially kimberlitic grains but they need to be analysed more accurately to determine whether or not these indicator grains may have come from diamondiferous, weakly diamondiferous or barren kimberlitic rocks.

Analyses of standard kimberlitic grains show that the ice accumulation on the SEM detector causes a reduction in the amounts of the lighter elements eg Mg and Al analysed with

respect to the heavier elements and so it may be assumed that the analyses produced on grains from the JACK 10, JACK 14B and JACK -6SS are low in Mg, as compared with the heavier elements found in these grains.

RECOMMENDATIONS

Other models of jigs for concentrating small diamonds could be tested. However, Geologist H. Dummett estimates that the Jack outcrop crator infill rock only contains a $\pm$5% kimberlite component and 95% extraneous clastic debris. Furthermore, the Jack diatreme only occupies about 15% of the drainage basin area at the nearest sample site, JACK -6SS, to the Jack pipe. In view of the fact that ore grade of diamonds is only 1 p.p.b. by volume in primary kimberlite as well as the extreme diamond dilution expected in the crator infill as well as the high 85% glacialfluvial dilution factor of the drainage basin at the nearest stream sediment sample site to the Jack pipe, it is unlikely that any diamonds will ever be found at site JACK -6SS even if a jig if found that recovers 100% of the small diamonds present. Thus, unless incredibly lucky the jig method of identifying diamonds downstream from the Jack pipe, may not reflect the grade of the primary kimberlite.

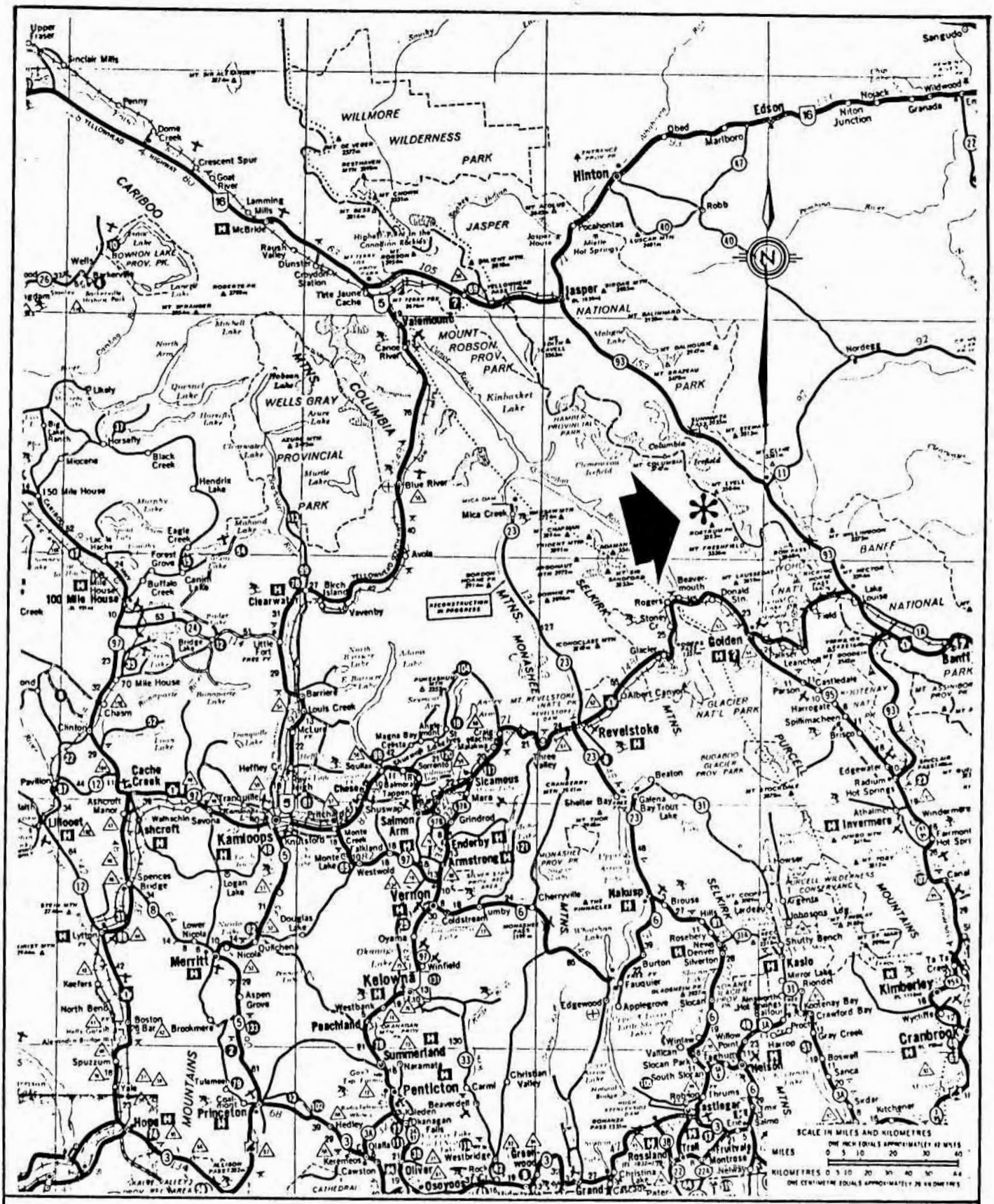
For a definite test for microdiamonds the fine clay tailings of milled rock samples should be fused to destroy all minerals but microdiamonds. The fine -150 mesh heavy diamond concentrates of the rock samples could also contain microdiamonds, undetected by the binocular microscope techniques suited for +150 mesh diamond detection. These fine -150 mesh concentrates should be automatically computer controlled S.E.M. scanned with the objective of differentiating pure C (diamond) from acidized mineral precipitates containing "C".

The anomalous results of the stream and glaciofluvial samples should be followed-up with prospecting further up-ice and further up-stream from these samples to determine the source of the kimberlitic indicator minerals.

All the kimberlitic indicator grains picked from the 41 stream and glaciofluvial bulk samples should be S.E.M. scanned to identify any potential kimberlitic indicator grains which should then be quantitatively analysed after the ice has been removed from the S.E.M. detector. All pyrope and ilmenite grains from the JACK -6SS stream sediment sample and the JACK 10 and JACK 14B rock samples which contained high Mg should be quantitatively analysed using an ice free detector to determine the accurate Mg content.

Since high magnesium kimberlitic ilmenites, chromites and several thousand high magnesium pyropes occur in the rock samples the results to date substantiate the quantitative results of Dr. Paul Lurie of Falconbridge Metallurigical Labs, Thornhill, Ontario (Ref.- Northcotes Report - Appendix C).

In view of the fact that the crator infill on the Jack pipe contains substantial amounts of diamond indicator minerals with rare diamonds K.E. Northcote's recommendation to drill into the primary kimberlite, where increased grades can be expected, is warranted.



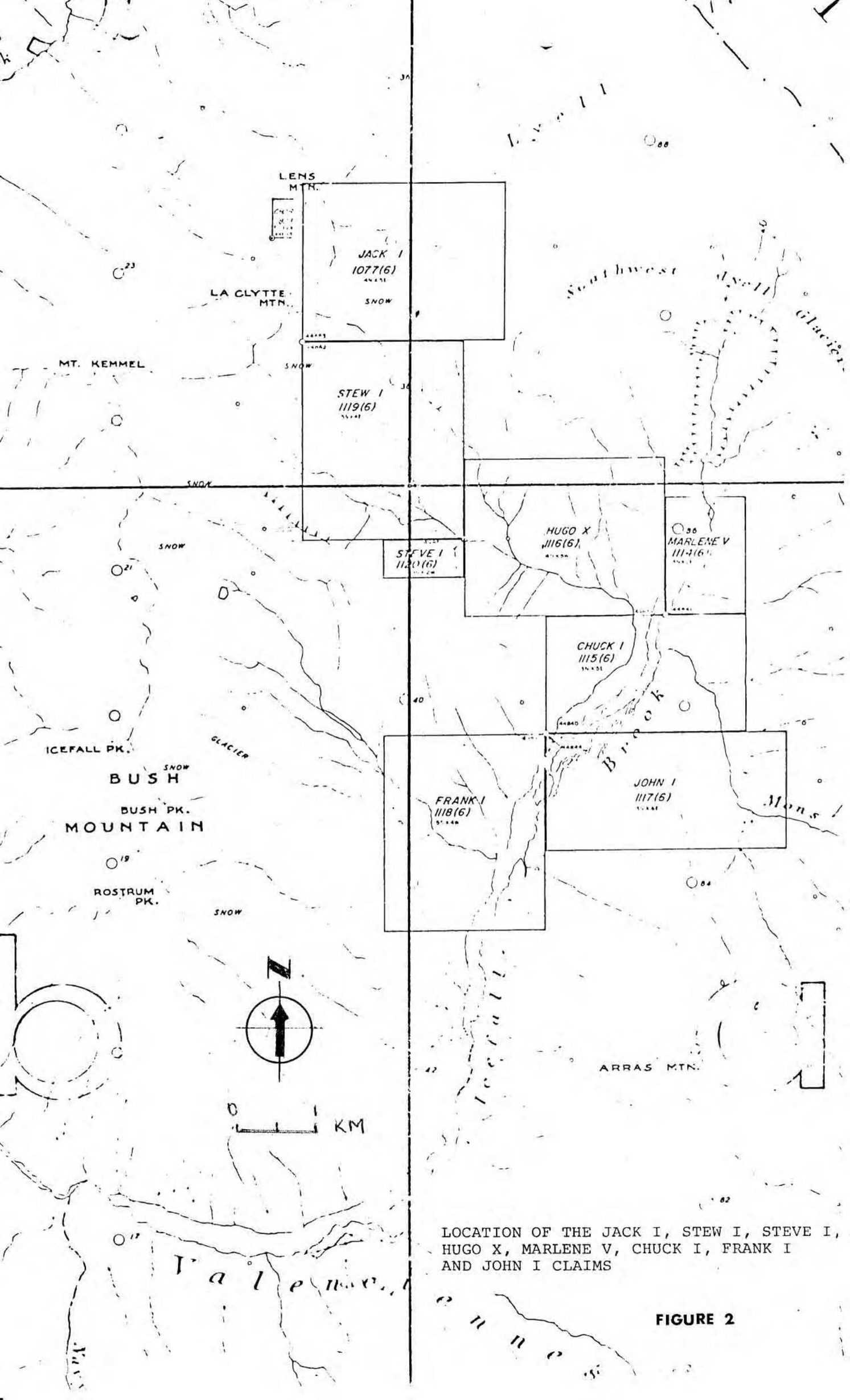
DIA MET MINERALS LTD

INDEX MAP

JACK CLAIMS

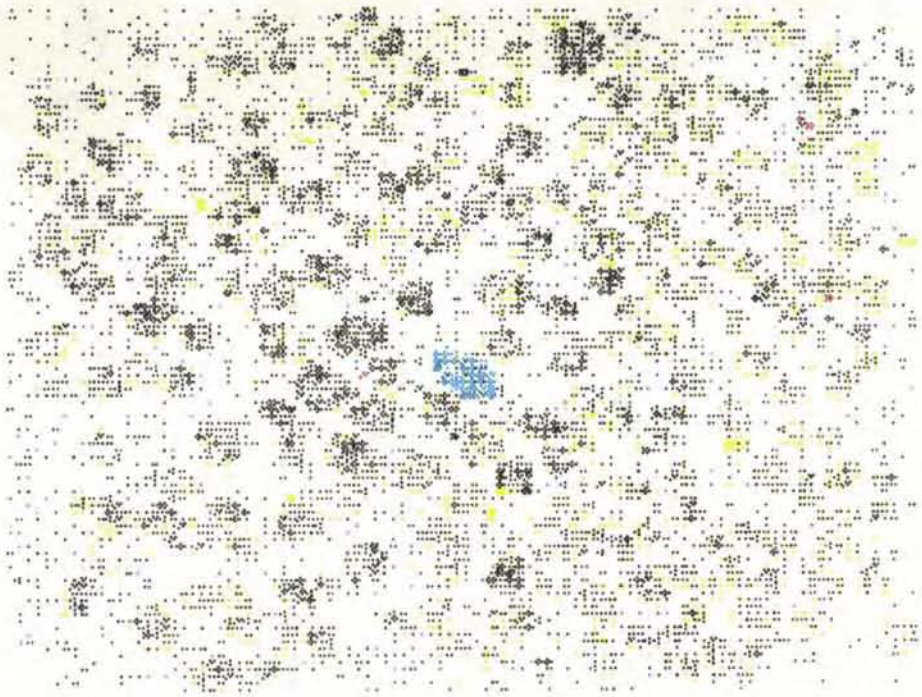
82N/14E	51°54'N 117°08'W

Figure 1



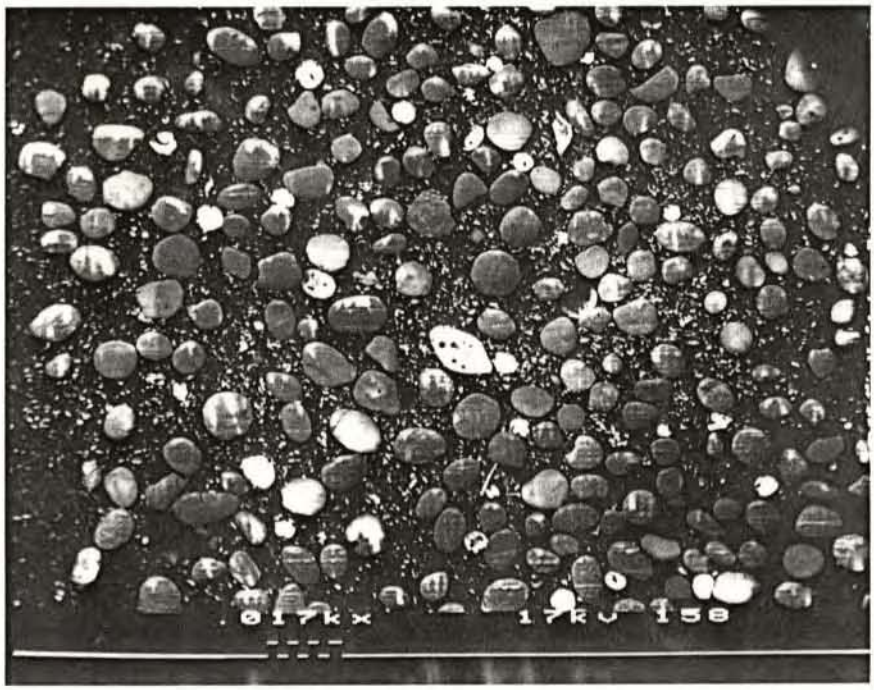
LOCATION OF THE JACK I, STEW I, STEVE I, HUGO X, MARLENE V, CHUCK I, FRANK I AND JOHN I CLAIMS

FIGURE 2



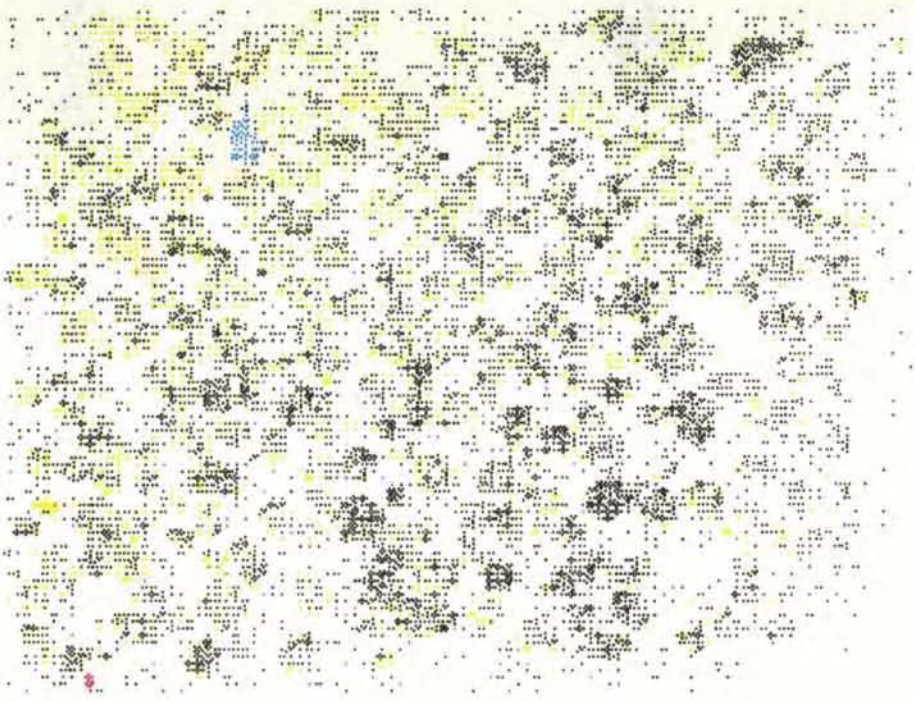
Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan



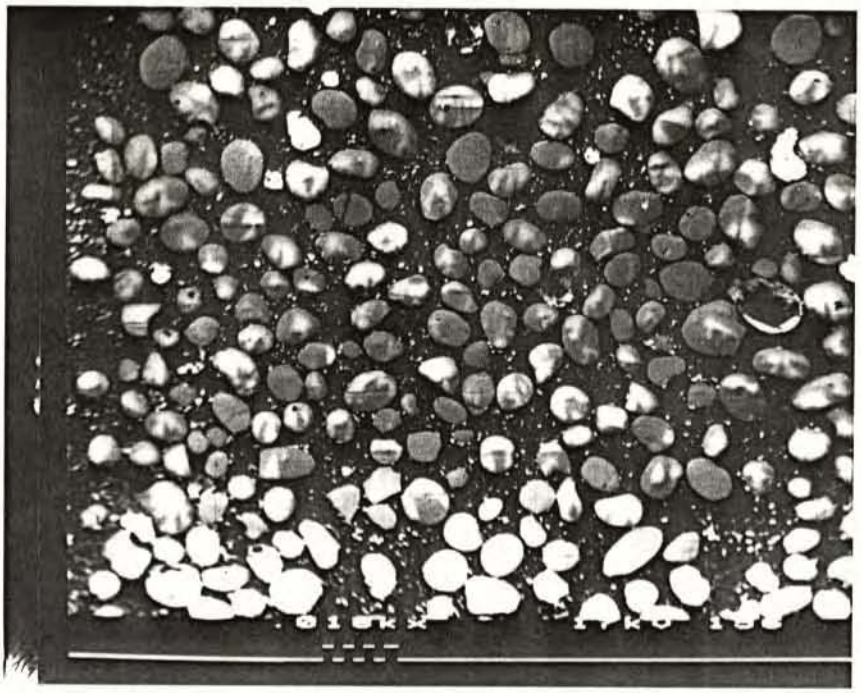
SEM area scan and photograph of brown pyrope grains - JACK 10 sample

PLATE 1



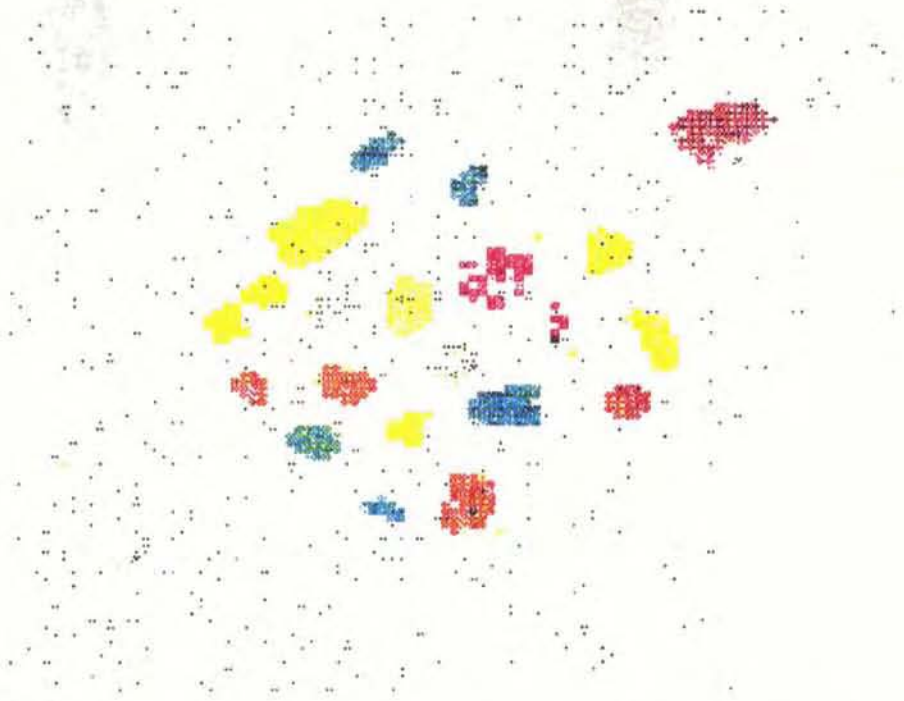
Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan



SEM area scan and photograph of brown pyrope grains - JACK 14B

PLATE 2



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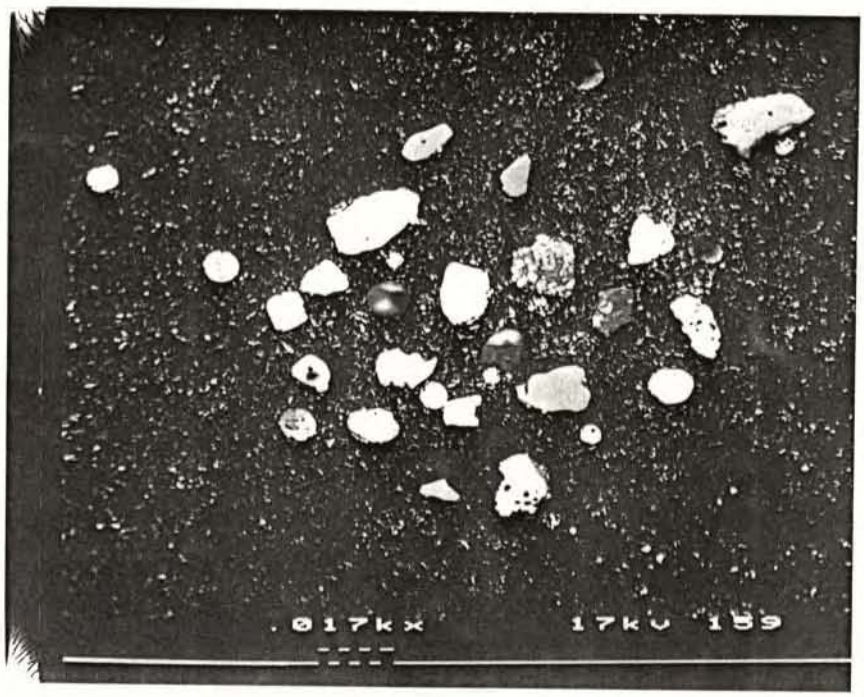
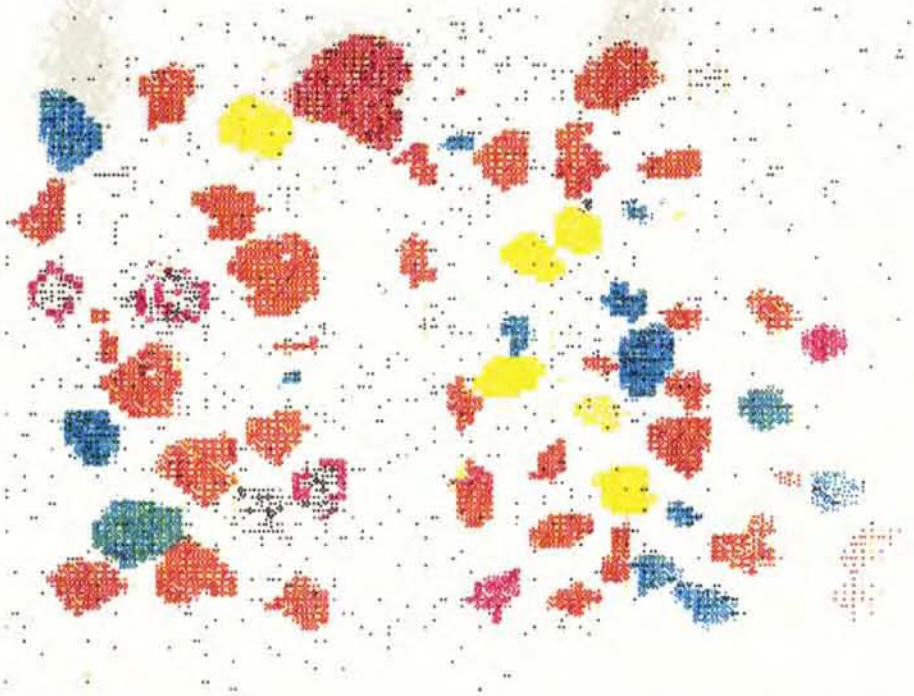
MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan



SEM area scan and photograph of ilmenites, chromites & magnetites - JACK 10 sample

PLATE 3

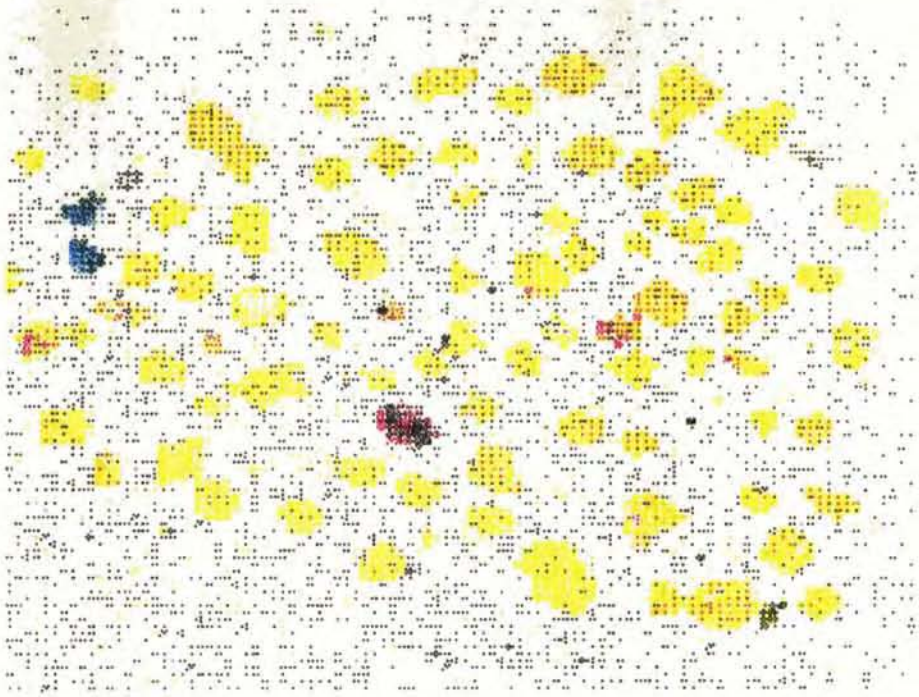


Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan

SEM area scan and photograph of ilmenites, chromites & magnetites - JACK 14B sample

PLATE 4

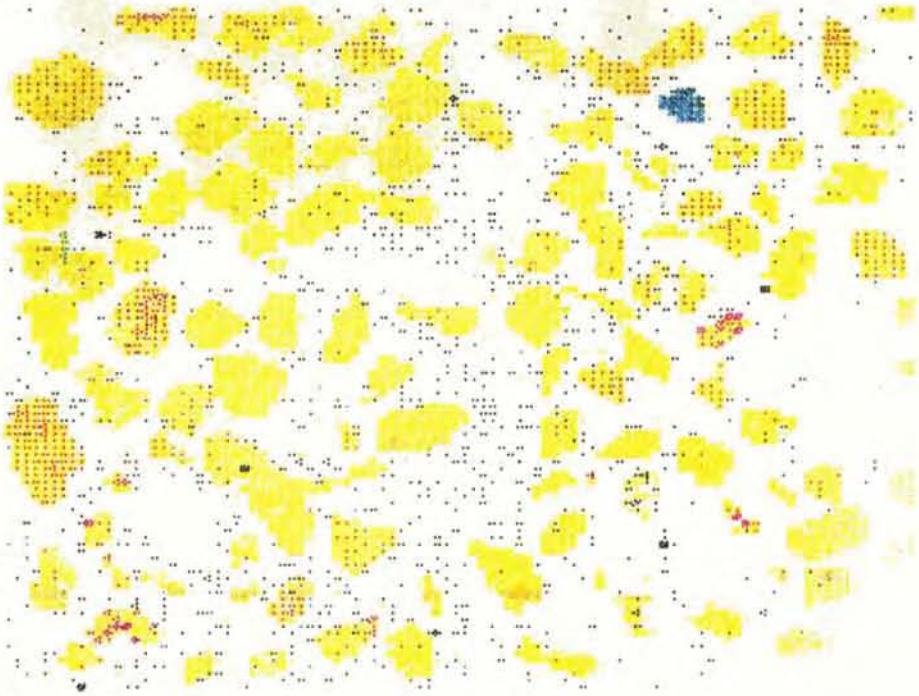


Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan

SEM area scan and photograph of magnetites, chromites & ilmenites - JACK -6SS

PLATE 5



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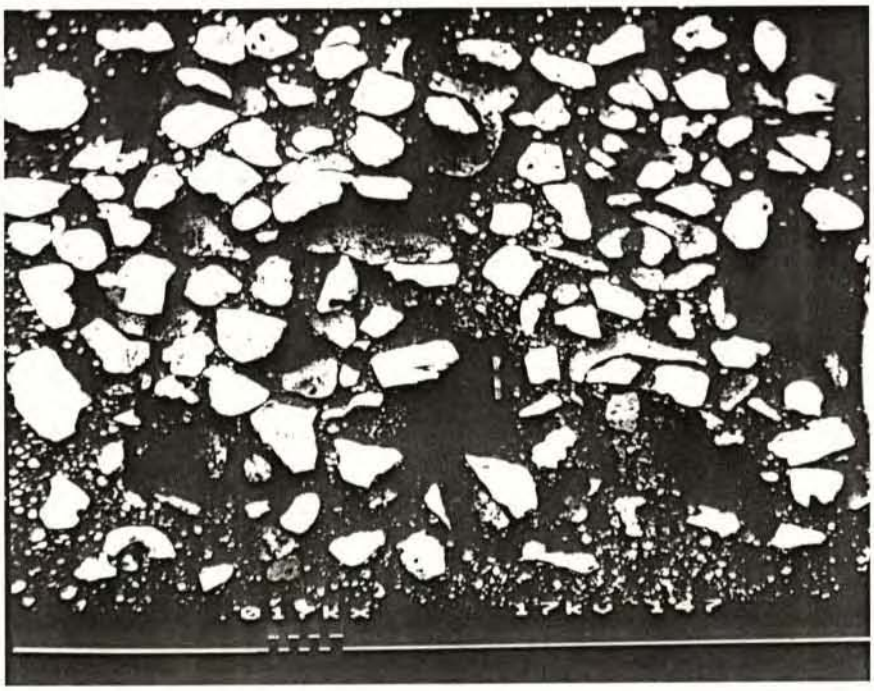
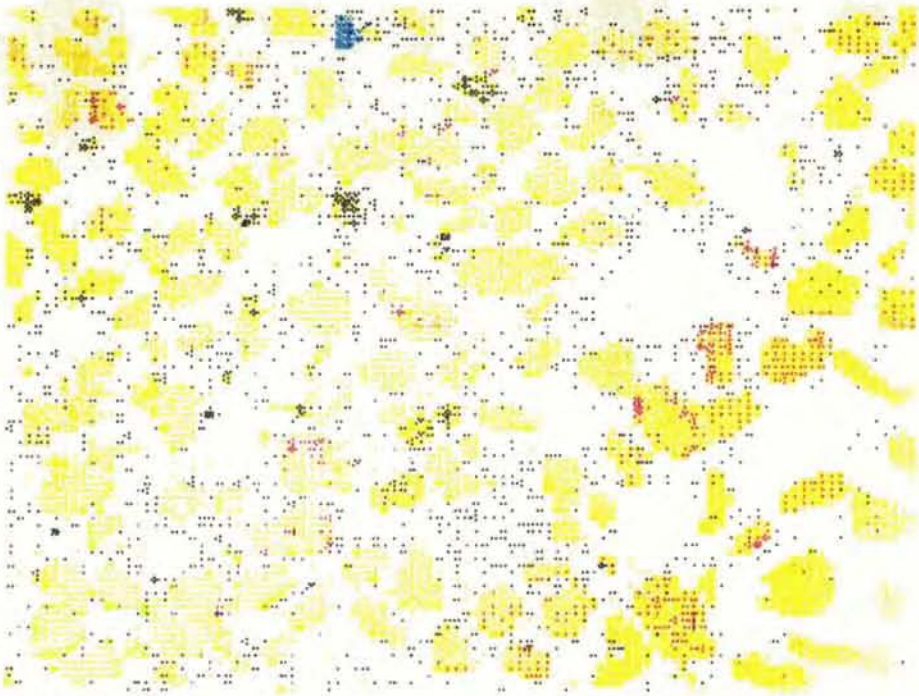
MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan



SEM area scan and photograph of magnetites, chromites & ilmenites - JACK -6SS

PLATE 6

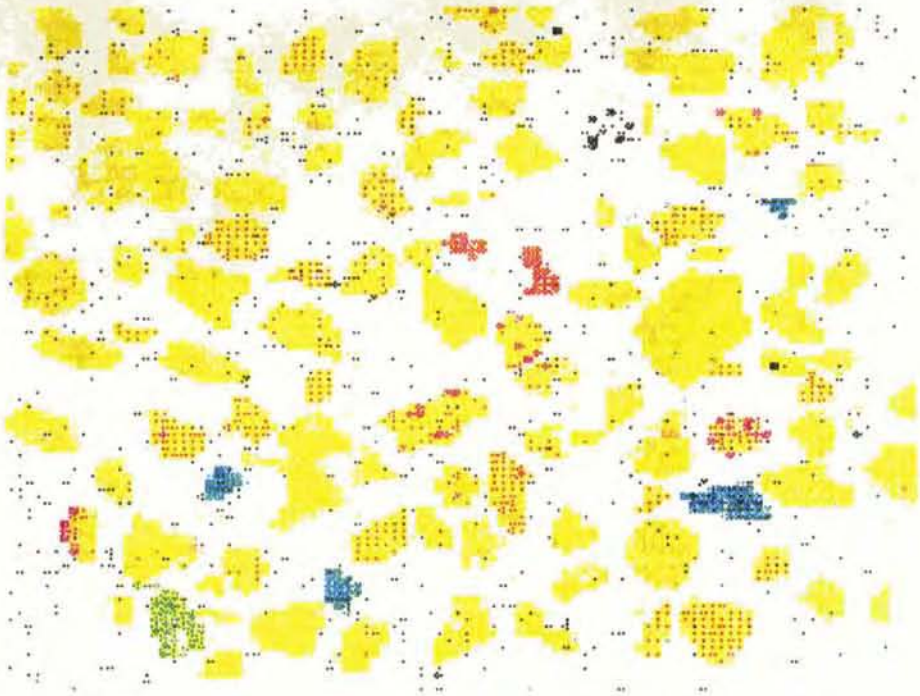


Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan

SEM area scan and photograph of magnetites, chromites & ilmenites - JACK -6SS

PLATE 7

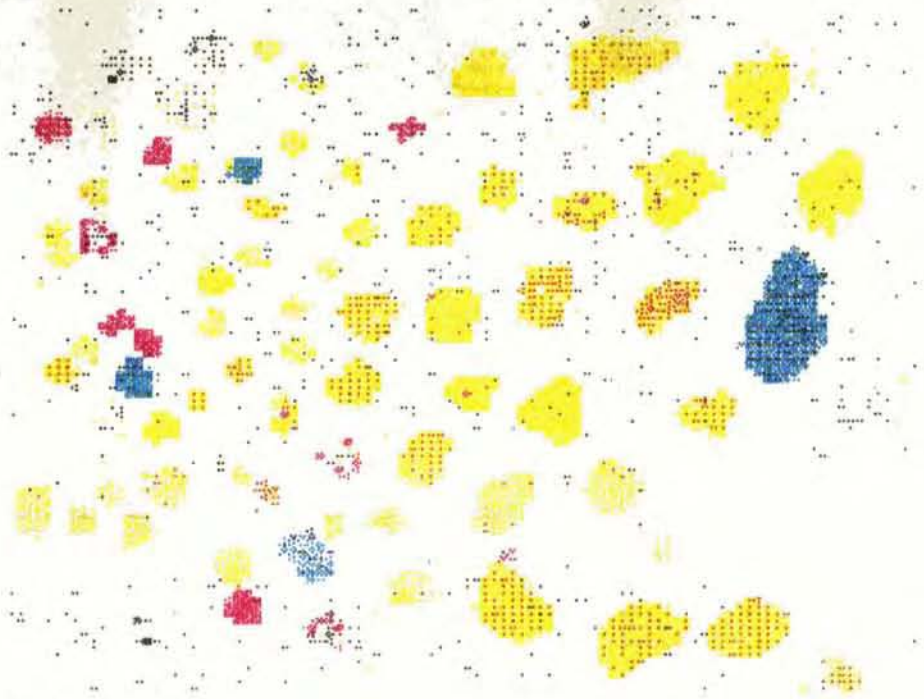


Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan

SEM area scan and photograph of magnetites, chromites and ilmenites - JACK -6SS

PLATE 8

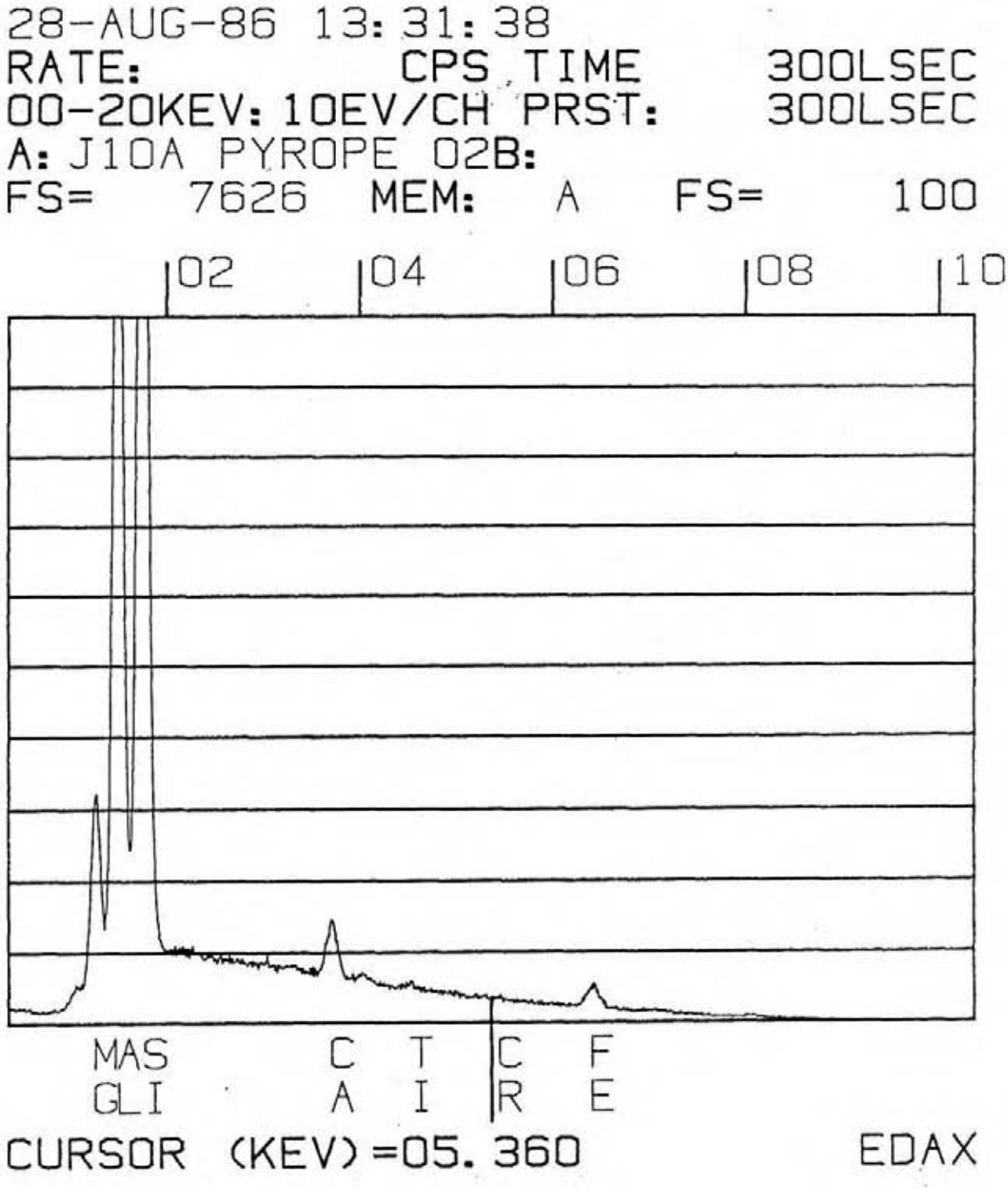


Q,3,$

MG	TI	CR	FE	EDAX
BLACK	MAGENTA	CYAN	YELLOW	EDscan

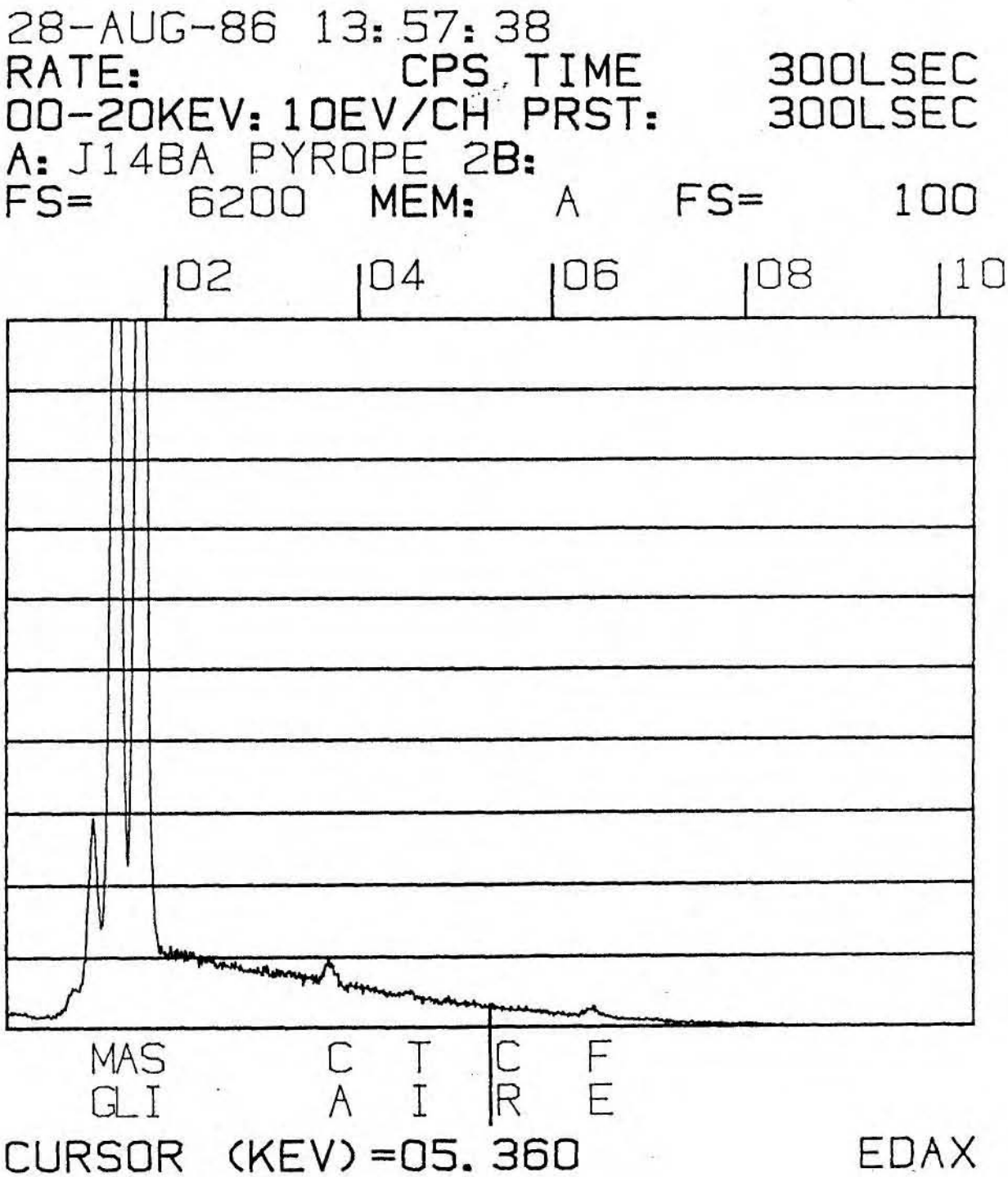
SEM area scan and photograph of magnetites & chromites - JACK -6SS

PLATE 9



SEM spectrum collected on a brown, possibly kimberlitic pyrope grain from the JACK 10 rock sample

PLATE 10



SEM spectrum collected on a brown, possibly kimberlit pyrope grain from the JACK 14B rock sample

PLATE 11

"O " STOICHIOMETRY
VALENCE RATIO(MG)= 1.0
VALENCE RATIO(AL)= 1.5
VALENCE RATIO(SI)= 2.0
VALENCE RATIO(TI)= 2.0
VALENCE RATIO(MN)= 1.0
VALENCE RATIO(FE)= 1.5
KV=20. TILT=40.0 TKOFF=56.0
BKG PT1= 2.4 BKG PT2= 9.0
NOST
20-NOV-84

CONCENTRATION

	WT.%	AT.%	"O ".%	%S.E.
MGK	5.20	5.93	8.63	1.43
ALK	0.52	0.53	0.98	7.15
SIK	0.30	0.29	0.63	9.49
TIK	28.08	16.24	46.84	0.37
MNK	0.27	0.14	0.36	13.94
FEK	29.77	14.77	42.57	0.46
O	35.85	62.09		
	100.00			

Quantitative analysis of a potentially kimberlitic ilmenite grain - JACK 10 rock

PLATE 14

```
LIST-%-ZAF:
LABEL = J10A PYROPE 02
29-AUG-86    10:01:44
  300.013  LIVE SECONDS
KV= 15.    TILT=40.    TKOFF=43.
           ZAF CORRECTION
```

ELEM	K	Z	A	F
MGK	0.0529	1.018	1.000	1.018
ALK	0.1877	0.987	0.976	1.012
SIK	0.2111	1.015	0.876	1.000
NBL	0.0010	0.809	0.952	1.000
CAK	0.0133	0.982	0.980	1.001
CRK	0.0005	0.888	1.000	1.006
FEK	0.0135	0.885	1.003	1.000

ELEM	CPS	WT % ELEM	OXIDE
MGK	52.1577	5.11	8.47
ALK	299.5437	19.25	36.37
SIK	437.4307	23.73	50.78
NBL	0.9166	0.13	0.19
CAK	21.8924	1.39	1.94
CRK	0.5233	0.06	0.09
FEK	9.5696	1.52	2.17

Semi Quantitative analysis
of a brown pyrope grain
from JACK 10

PLATE 12

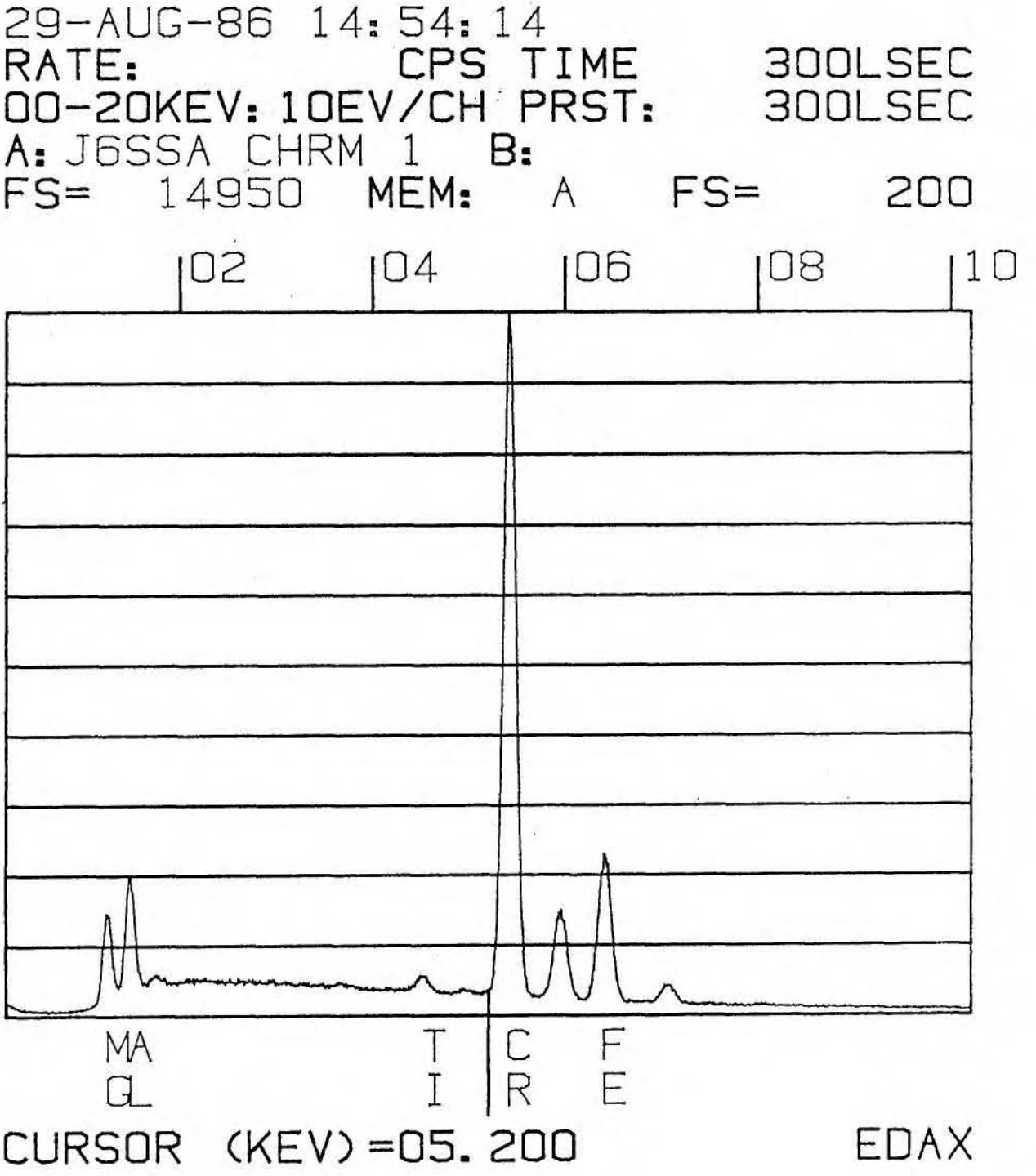
```
LIST-%-ZAF:
LABEL = J14BA PYROPE 2
29-AUG-86    10:05:20
  300.009  LIVE SECONDS
KV= 15.    TILT=40.    TKOFF=43.
           ZAF CORRECTION
```

ELEM	K	Z	A	F
MGK	0.0449	1.017	1.015	1.021
ALK	0.2103	0.986	0.993	1.012
SIK	0.2102	1.013	0.874	1.000
CAK	0.0052	0.980	0.980	1.001
TIK	0.0017	0.892	0.994	1.001
CRK	0.0004	0.887	1.001	1.003
FEK	0.0054	0.884	1.003	1.000

ELEM	CPS	WT % ELEM	OXIDE
MGK	35.2789	4.26	7.07
ALK	267.3819	21.23	40.11
SIK	347.1928	23.75	50.81
CAK	6.8131	0.54	0.76
TIK	1.6866	0.19	0.31
CRK	0.2867	0.04	0.06
FEK	3.0832	0.61	0.88

Semi Quantitative analysis
of a brown pyrope grain
from JACK 14B

PLATE 13



SEM spectrum of a chromite grain from the JACK -6SS sample

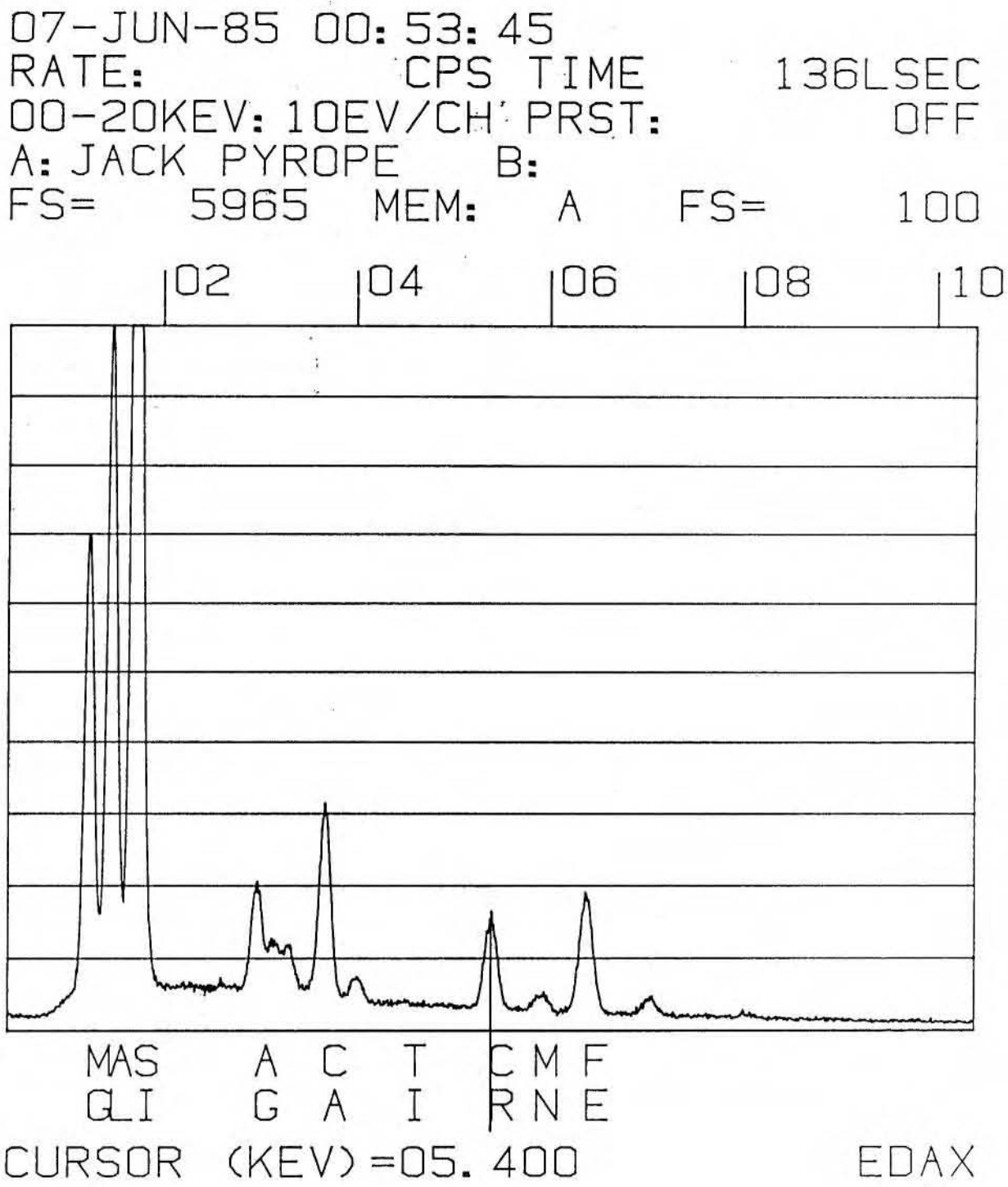
PLATE 15

```
LIST-%-ZAF:
LABEL = J6SSA CHRM 1
29-AUG-86    09:44:39
  300.002  LIVE SECONDS
KV= 15.    TILT=40.    TKOFF=43.
           ZAF CORRECTION

 ELEM    K       Z       A       F

 MGK  0.0362  1.112  0.615  1.001
 ALK  0.0288  1.085  0.711  1.001
 SIK  0.0016  1.123  0.789  1.001
 CAK  0.0012  1.079  0.990  1.053
 TIK  0.0076  0.985  1.000  1.156
 CRK  0.4327  0.981  1.003  1.024
 FEK  0.1321  0.980  0.973  1.000
```

ELEM	CPS	WT % ELEM	OXIDE
MGK	49.4831	5.28	8.76
ALK	63.7563	3.73	7.04
SIK	4.4833	0.18	0.38
CAK	2.6600	0.10	0.15
TIK	13.3199	0.67	1.11
CRK	596.0633	42.94	62.77
FEK	130.3459	13.85	19.80

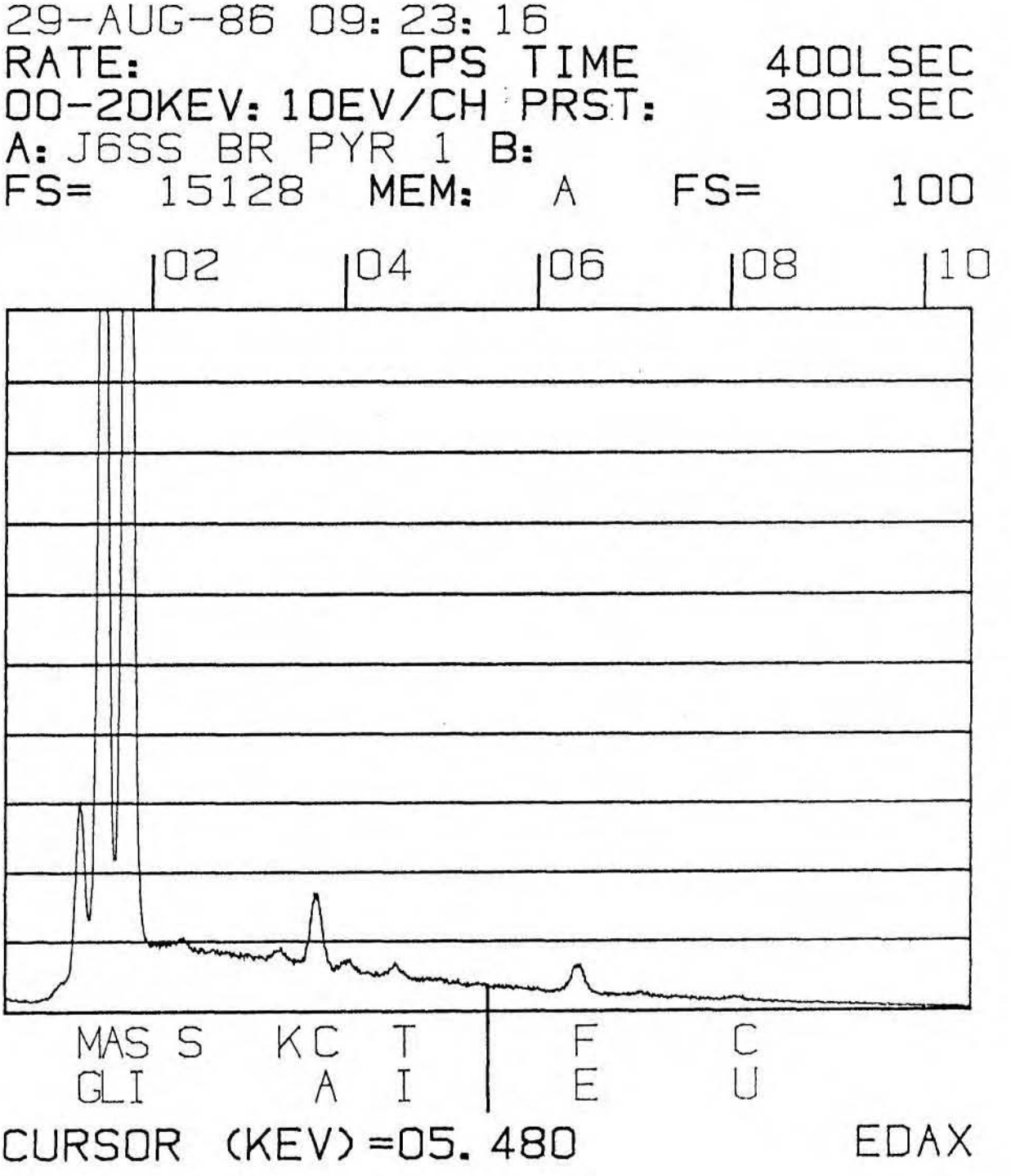
Semi quantitative analysis
of a chromite grain from
JACK -6SS

PLATE 16



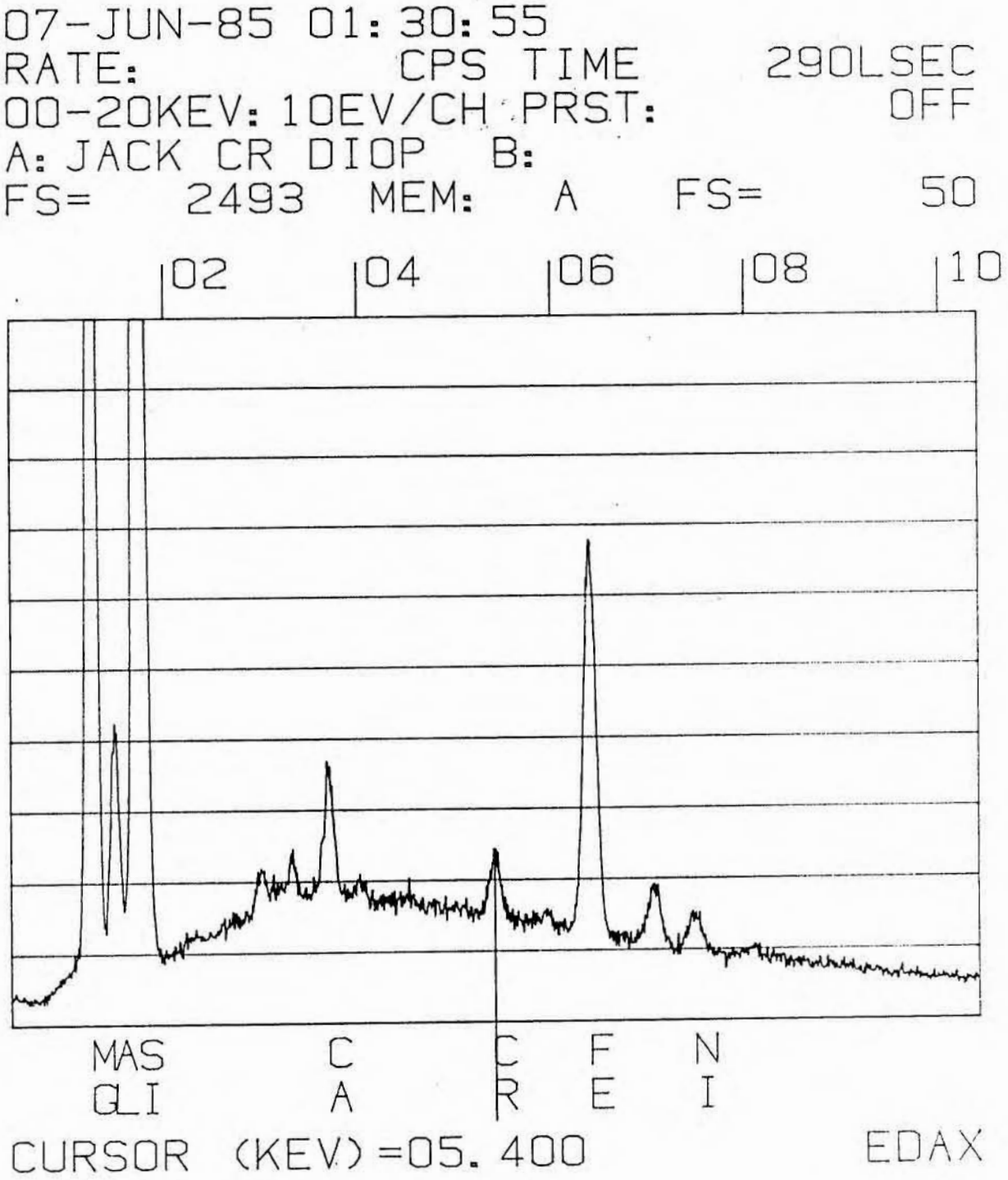
SEM spectrum collected on a possibly kimberlitic mauve pyrope - JACK -6SS sample

PLATE 17



SEM spectrum collected on a brown pyrope grain from the JACK -6SS =

PLATE 18



SEM spectrum collected on a possibly kimberlitic Chrome Diopside grain from the JACK -6SS sample

PLATE 19

APPENDIX "A"

STATEMENT OF EXPLORATION & DEVELOPMENT

Total Okanagan Helicopter	$ 4,942.75
Total field technical salaries (Brent Carr, Ken Heaton, Dan Tomlin), 4 wheel drive truck rentals, meals, accommodation, camp rentals and freight	5,476.06
Geologist C.Fipke field salary (Sept. 13 - 16/85) 4 days including travelling @ $300.00/day	1,200.00
Processing and S.E.M. analysis of 440.5 kg. glaciofluvial sample	7,288.46
Processing and S.E.M. analysis two 35 kg. rock samples #Jack 10 and 14B	4,140.10
Processing and Analysis 41 10 kg. samples -20 glaciofluvials	7,316.91
Report writing of geologists R. Capell and C. Fipke including selecting indicator grains for S.E.M. analysis, making S.E.M. polish sections 3 days @ $300.00	600.00
Drafting, copying, typing, proof reading and materials	400.00
	$31,364.28
Remove from PAC account of Dia Met if insufficient use PAC of C. Fipke or C.F. Minerals	4,935.72
	$36,300.00

APPENDIX B

STATEMENT OF QUALIFICATIONS

C.Fipke is a BSc Honors Geology graduate of the University of British Columbia. Between 1970 and 1977, C. Fipke worked as a geologist involved to a large extent in heavy mineral exploration and research for Kennecott Copper in New Guinea, Samedan Oil in Australia, Johannesburg Consolidated Investments in Southern Africa and Cominco Ltd. in Brazil and British Columbia. C. Fipke and L.M. Fipke organized C.F. Mineral Research Ltd. in 1977. Currently the C.F. Mineral Research heavy mineral laboratory which employs 25 to 35 people is involved in heavy mineral exploration and processing on behalf of many international companies.

DIAMOND INDICATOR BINOCULAR RESULTS
OF JACK CLAIMS AREA

0 1000 2000
metres

Chm.	Py.
Il.	Crd.

Chm. - Chromite
Py. - Pyrope
Crd. - Chrome Diopside
Il. - Ilmenite

*Contaminated

FIGURE 3