6066

Report of Trenching, Geological and Geochemical Survey, Iron Cap 1, 2, 3; Tedray 1, 2, 3, 5 and Grace claims.

Sulphurets Creek Property, 56° 30' N, 130° 15' W, Unuk River Area, Skeena Mining Division, British Columbia. 104B/9E

An Assessment Report of the 1976 Work Program on Tedray One Claim Group.

TEDRAY, IRONCAP

104B/9E

by Ed. Kruchkowski
Erik Ostensoe

Ed Kruchkowski
Erik K. Ostensoe

for Granduc Mines, Limited (N.P.L.)
November 1976

PART I

General Remarks

1. Introduction

The program of geological and geochemical evaluation of mineral claims located in the Sulphurets Creek area of Skeena Mining Division, British Columbia (figure 1) initiated by Granduc Mines, Limited in 1974 and extended in 1975 was further expanded in 1976. The prior years' work was reported in assessment reports dated January 1975 and July 1976.

The purpose of this report is to record details of 1976 work in the Northeastern corner of the Sulphurets Creek Property. During 1975 positively anomalous geochemical survey results were obtained in the vicinity of the Tedray 1 and 2 claims. The Iron Cap 1, 2, and 3 claims were staked on August 6, 1976 to assure adequate coverage of the possible north and east extensions of the possible mineral zone.

This report does not include the extensive background information provided in the 1974 and 1975 reports.

2. Claims

Tedray One claim group (No.1378) was established by Notice to Group dated August 3, 1976 and was amended by supplementary Notice to Group dated September 27, 1976. Current status is summarized as follows (also see figure 2):

Tedray One Group

Claims	No. of Units	Record Number	Month of Record
Tedray 1	2	153	August
Tedray 2	1	154	"
Tedray 3	3	155	"
Tedray 4	5	156	"
Tedray 5	10	157	"
Grace	6	152	"
Iron Cap 1	2	315	September
Iron Cap 2	1	316	"
Iron Cap 3	2	317	"

3. Logistics and Personnel

As in previous years, the 1976 field work at the Sulphurets Creek property was done by Erik Ostensoe and Ed Kruchkowski, geologists. They were assisted by Chris Hrkac, helper. Field work was done in the period August 4 to 14, 1976.

Qualifications of personnel are detailed in Appendix I.

CONTENTS

ILLUSTRATIONS

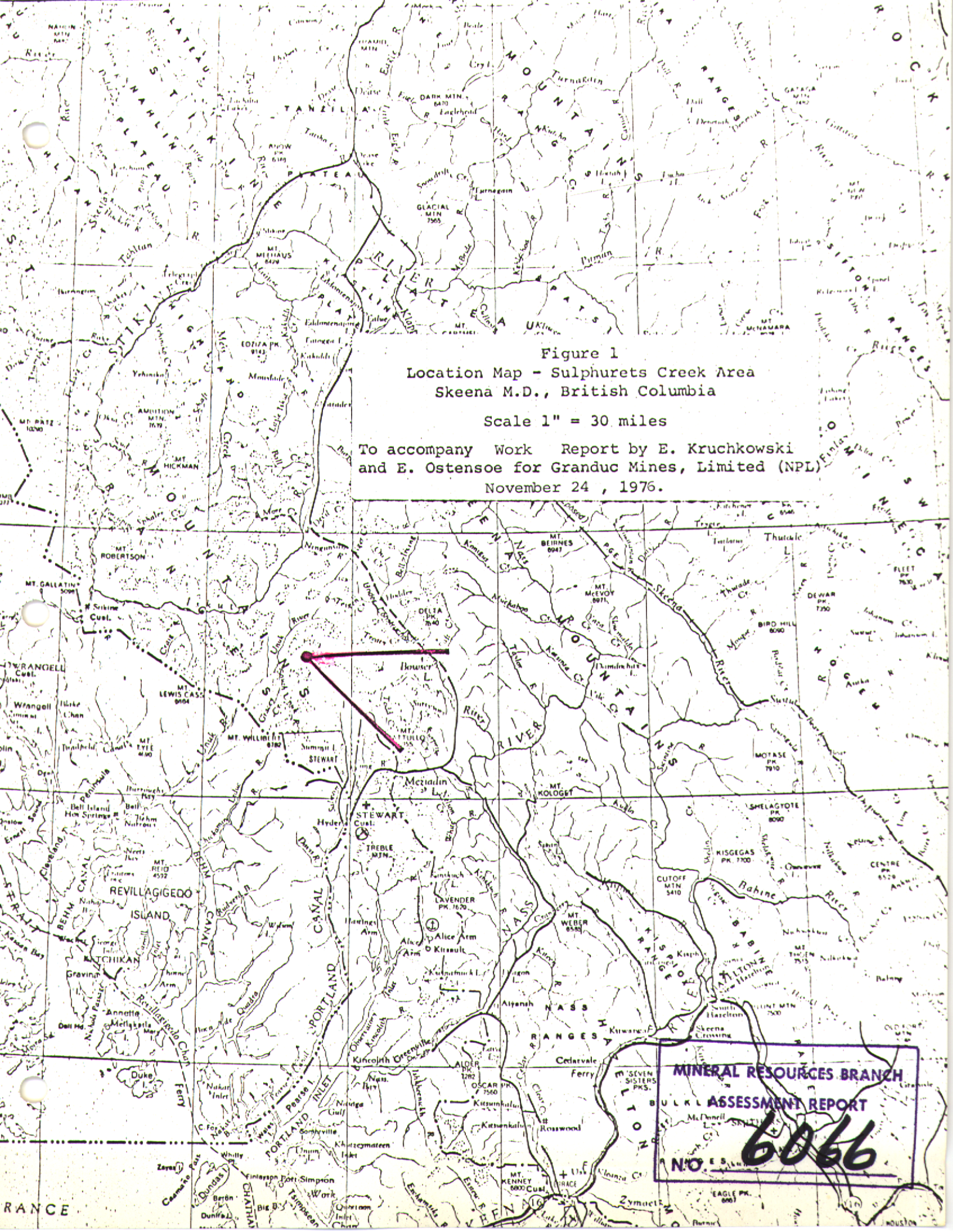


Figure 1
Location Map - Sulphurets Creek Area
Skeena M.D., British Columbia

Scale 1" = 30 miles

To accompany Work Report by E. Kruchkowski and E. Ostensoe for Granduc Mines, Limited (NPL)
November 24 , 1976.

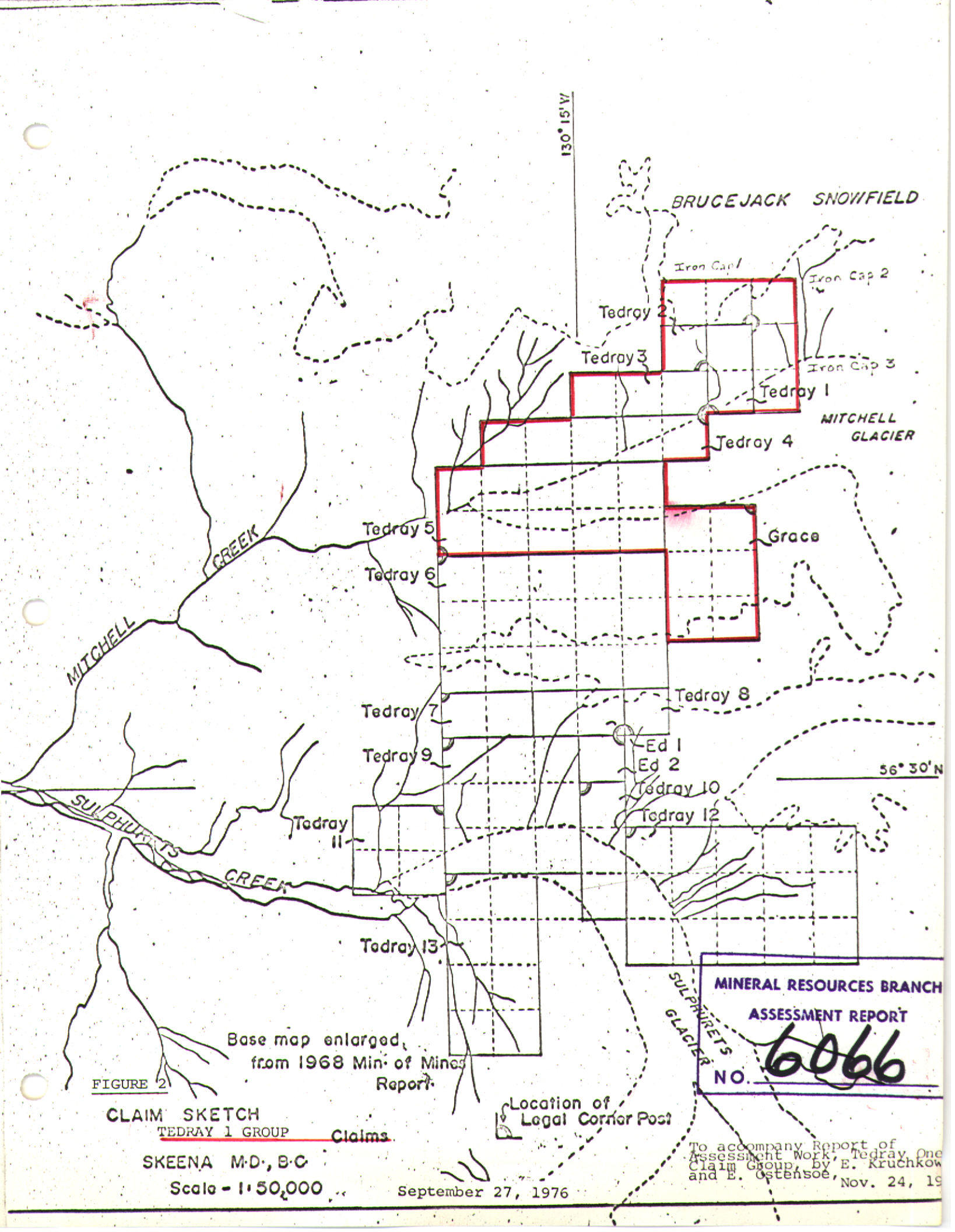


FIGURE 2

CLAIM SKETCH

TEDRAY 1 GROUP Claims

SKEENA M.D., B.C.

Scale - 1:50,000

September 27, 1976

To accompany Report of Assessment Work, Tedray One Claim Group, by E. Kruchkow and E. Ostensoe, Nov. 24, 19

After completion of field work samples were variously assayed and analysed by Chemex Labs Ltd. of North Vancouver, British Columbia. Rock geochemical samples were examined by Mr. Kruchkowski with the aid of a binocular microscope and a small sawn slice from each was stored as a permanent reference sample. Maps displaying the 1976 data were prepared by Mr. Kruchkowski. Drafting services were provided by C. L. Cory.

Personnel and field equipment were mobilized from Vancouver, B. C. by truck and air service. Some field equipment was taken from storage at Stewart, B.C. Stewart, the town closest to the Sulphurets Creek property, was the base for all expediting, supplies and services. A Bell model 206 (Jet Ranger II) helicopter based there was used for required service trips and for camp moves. For safety and convenience in the field, regular radiotelephone contact was maintained with a station at Stewart. The tent camp was situated at elevation 4040 feet on a rock ledge near the north side of Mitchell Glacier.

4. Work Done

56 rock geochemical samples, numbers 1107 through 1162 inclusive, were collected from the northeast corner of the Sulphurets Creek property. Fourteen samples, numbered 1163 through 1176 inclusive, were collected from the Grace and Tedray 5 claims close to the south side of Mitchell Glacier. Seven bedrock trenches totalling 92 feet in length were excavated and sampled (figure 3).

Rock type and structural and sulfide mineral data observed and recorded at each rock geochemical sample site were the basis for the geology compiled in figure 4. Rock geochemistry maps for molybdenum, lead and silver (figures 5 through 7 respectively) were contoured by combining the newly obtained analytical data with that of previous years.

5. Analytical Procedures

Samples consisting of between one and two pounds of fresh or reasonably unweathered bedrock were submitted to Chemex Labs Ltd. After passing through a jaw-crusher and a gyratory crusher, the sample was split through a "Jones" splitter to obtain about 250 grams of material. The latter quantity was pulverized in a contamination-free ring pulverizer to - 100 mesh size. Accurately weighed ten grams and 0.5 gram portions were then prepared and digested.

The 10 gram sample was ashed at 550°C then twice heated to dryness in aqua regia. The resulting residue was dissolved in 25% hydrochloric acid and aspirated through a Varian Techtron Atomic Absorption Spectrophotometer. Two readings were obtained: One for silver (Ag++) and the other for the interference factor which was then subtracted from the first quantity to give a net corrected value for silver content.

The 0.5 gram sample was digested using 3 ml. of 70% perchloric acid and 2 ml. of concentrated nitric acid for two and one-half hours at 203°C. The solution was then diluted with distilled water to 25 ml volume, and heavy particles were allowed to settle out. The clear solution was processed through the atomic absorption unit and readings were obtained for lead and molybdenum.

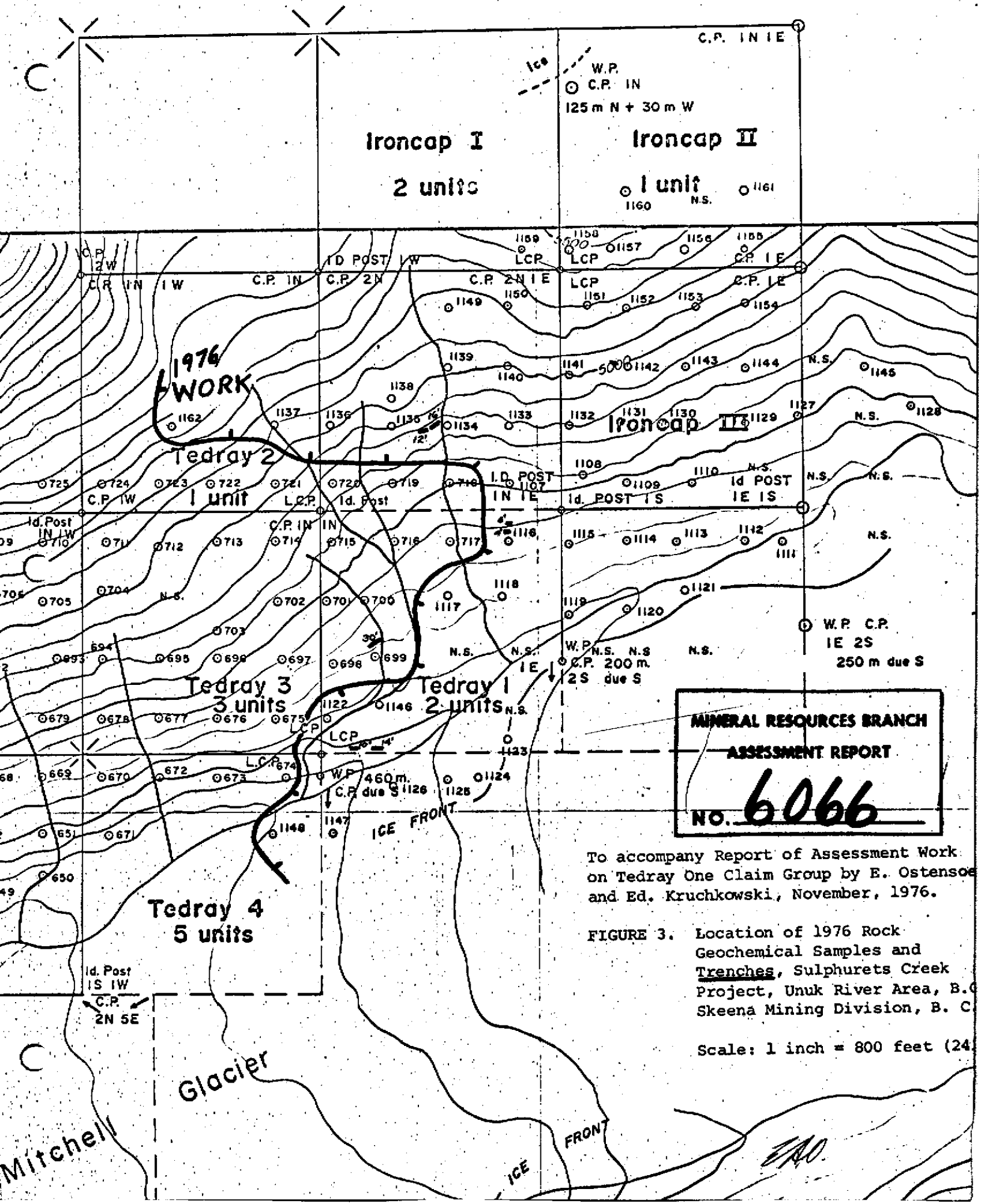
6. Treatment of Data

Geochemical data were added to base maps prepared in 1974 on scale of one inch to 800 feet (243 m). On these maps each sample site is identified by a small numbered circle and the particular geochemical value is plotted nearby using a slightly larger italicized script. The geochemical survey maps that accompany this report are portions of the full sized maps that were included in the previous reports.

Overall, it was found that geochemical values obtained in the Sulphurets Creek project area exhibited great variation, due, presumably, to the range of rock types present in the area and to the varying alteration and mineralization histories to which the area as a whole has been subjected. Consequently our contouring was designed to express relative abundances of metals rather than to be statistically defensible in the strictest sense.

For convenience parts of the geochemical maps were colored to reflect arithmetic multiples of abundances of metals: Yellow indicates metallic ion present in above general background levels for the area, probably little economic significance; blue - anomalous values, possibly close to economically significant mineralization; green - significantly anomalous quantities of metallic ion present in the rock; red - a high concentration of metallic ion.

Certificates of analysis for all rock geochemical samples are included in Appendix II of this report.



To accompany Report of Assessment Work on Tedray One Claim Group by E. Ostensoe and Ed. Kruchkowski, November, 1976.

FIGURE 3. Location of 1976 Rock Geochemical Samples and Trenches, Sulphurets Creek Project, Unuk River Area, B.C Skeena Mining Division, B. C.

Scale: 1 inch = 800 feet (24

PART II

Geology & Geochemistry - 1976 Program

1. Introduction

Field observations in the oourse of the 1975 rock sampling work failed to recognize the presence of anomalous quantities of molybdenum, lead and silver in rocks near the east edge of Tedray 3 claim and in much of Tedray 1 claim. Metal values are masked by the prevalent heavy iron staining and the metallic minerals of the surficial portion of the heavily altered rocks are commonly mechanically and chemically eroded. The 1975 geochemical analyses indicated the possibility that abnormal quantities of metals might exist in the area and the 1976 work was designed to expand the rock geochemistry and geology grid and to re-check some of the anomalous sample sites by means of trenching. The Iron Cap 1, 2 and 3 claims, totalling 6 units, were staked to ensure title to all the terrain of possible interest.

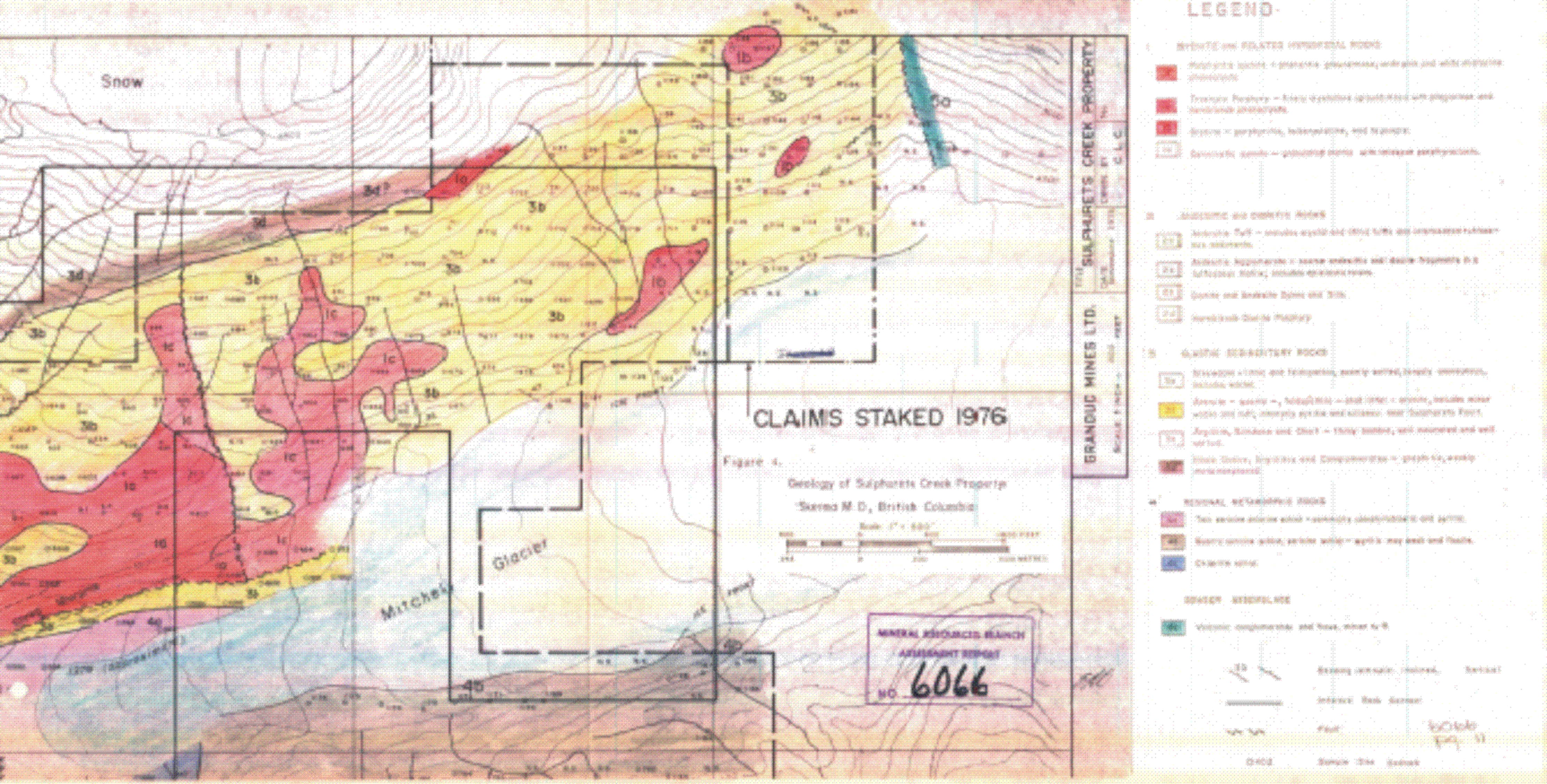
The results of the 1976 work are presented in figures 3 through 7 that accompany this report and in Appendix II.

2. Discussion of Data

a) North of Mitchell Glacier

The 56 rock geochemical samples (#1107 to #1162) taken during 1976 from the slopes north of Mitchell Glacier extended the grid sampling easterly to the trace of Brucejack Fault and northerly to the overhanging ice cap that occupies the area between the head waters of Treaty Creek to the northeast, several north flowing tributaries of the Unuk River to the north and northwest and Mitchell Glacier to the south. Geological reconnaissance indicated that the strongly metamorphosed rocks of the Sulphurets mineral zone (unit 3B) mapped in the area adjacent to the west continue northerly and northeasterly across the Iron Cap 1, 2 and 3 claims. Several areas of trachyte porphyry (unit 1B) were mapped and it is recognized that the intrusive geology is likely much more complex than could be determined by our rapid coverage grid type of work. In particular it is probable that here, as elsewhere in Sulphurets Creek project area, numerous dykes and sills have been masked by the strongly developed foliation and by alteration, in particular by silicification and sulfidization.

Only one rock geochemical sample (#1128) was taken east of the Brucejack Fault. Geological observations confirmed that the Sulphurets mineral zone ends abruptly against this prominent linear feature and that the rocks immediately to the east thereof are sheared but otherwise unmetamorphosed argillic and arenaceous sediments. This observation is in accord with observations and assumptions made elsewhere in the region: that the



LEGEND
Snow
CLAIMS STAKED 1976
Figure 4.
Geology of Sulphurets Creek Property
Skeena M.D., British Columbia
Glacier
Mitchell
SULPHURETS CREEK PROPERTY
GRANDUC MINES LTD.
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO 6066

Brucejack Fault has a sizeable component of vertical displacement. North of Mitchell Glacier the result is that volcaniclastic rocks of the lower part of the Bowser Assemblage of Middle Jurassic age are in conjunction with clastic, and more siliceous, rocks of the Hazelton Assemblage that are assigned to the Lower Jurassic.

No additional information was gained concerning the relationship of unmetamorphosed clastic sedimentary rocks (unit 3d) that occur north of Mitchell Glacier and one mile west of the Brucejack Fault, to rocks of the underlying Sulphurets Creek mineral zone. The exposed section of the unmetamorphosed rocks there is in excess of 1,000 feet in thickness and the vari coloured more massive volcaniclastic rocks characteristic of the "middle" Bowser east of Brucejack Fault and on peaks at the head of Mitchell Glacier are not in evidence. More and better knowledge of the respective ages of the various rock units, i.e. of the Sulphurets mineral zone, of the sediments that overlie the Sulphurets Fault and of the sedimentary and volcaniclastic rocks east of Brucejack Fault, would greatly illuminate our knowledge not only of the Faults but of the potential for locating more of the Sulphurets mineral zone.

In addition to the Brucejack Fault, two less obvious faults were recognized during the 1976 work: the trace of one passes northeasterly through the campsite about 300 feet higher in elevation than the north side of Mitchell Galcier; the other crosses the northeastmost corner of the grid area at high elevation. Both faults are indicated on figure 4 and both are marked in the field by topographic linear features and by geological variations.

The fault at lower elevation near the campsite may be the same as that which was recognized in 1975 north of the lower portion of Mitchell Glacier. It appears to truncate the south side of a trachyte body (unit 1B) and the rocks south of its trace although generally similar to the typical Sulphurets mineral zone quartz sericite pyrite schists, are notably less intensely altered and have chlorite rather than sericite as the most prominent metamorphic mineral. The attitude of the fault is not known. Further west the strike appeared to be north-northeasterly with a gentle northwesterly dip. In the area of 1976 work a southerly dip is proposed on the basis of the observed and assumed traces of the fault across the hillside.

The fault recognized at higher elevation in the northeastmost corner of the grid area is marked by a strongly developed linear topographic depression. Sample number 1161 was taken from rocks that lie northeast of the fault. Rocks there are dark weathering argillites. It is not apparent whether they are a slice of the Bowser Assemblage that has been isolated by the Brucejack Fault and one or more its splays or whether it represents a relatively unaltered remnant of the Sulphurets mineral zone (Hazelton Assemblage) rocks. As discussed in a later section of this report, geochemically the rocks appear to be similar to the latter group.

Several sulphide minerals were observed north of Mitchell Glacier. As is the case elsewhere at the Sulphurets Creek project area, pyrite is present in abundance: in veins with quartz, in veinlets and tiny fractures, and disseminated in the foliated strongly altered rocks. Chalcopyrite is also widespread in occurrence. It is commonly rather pale in color and, especially where it is somewhat weathered, it may be disguised among the pyrite grains. Several occurrences of galena and sphalerite were found but neither mineral appears to be of any possible economic significance. Small amounts of grey non-crystaline mineral, tentatively identified as tetrahedrite, were found in several locations. Iron oxides are ubiquitous and malachite and azurite are present over portions of the steep bedrock slope directly north of the campsite.

Seven trenches were excavated north of Mitchell Glacier at sites close to the Mitchell Glacier, partway up the slope and at high elevation just below the small hanging glacier. Locations and dimensions of trenches are indicated on figure 3. Work was done using a "Cobra" drill, dynamite and hand tools. The purpose of the trenching was variously to expose fresh rock to confirm metal values indicated by the 1975 rock geochemical survey, to investigate narrow and rather lenticular occurrences of galena and sphalerite in carbonate-rich altered sheared zones in metasedimentary rocks and to obtain pyrite and chalcopyrite - bearing material for assaying purposes from some zones of dense material that could not otherwise be satisfactorily sampled.

b) South of Mitchell Glacier

Fourteen samples (#1163 to #1176) were taken south of Mitchell Glacier in order to give more complete survey coverage of the molybdenum-bearing area adjacent to the ice. The samples were taken from rock that has been exposed only a short time by the recession of the ice. No samples were taken east of Brucejack Fault in this area.

Sericite-talc schist and quartz sericite schist are present and, as elsewhere, foliation with easterly strike and steep dip is strongly developed. Molybdenite was recognized in several of the samples both as small disseminated flakes and more abundantly in association with quartz veins. Minor amounts of malachite stains were noted in the general vicinity of sample #1175. Pyrite was present at every sample site.

3. Discussion of Geochemical Analyses

South of Mitchell Glacier the 1976 geochemical work added to the dimensions of the molybdenum anomaly. Several samples are very high in molybdenum content (>500 ppm) and the zone persists to the ice margin. Lead values are uniformly low, perhaps somewhat lower than those reported in 1975 for samples of similar rocks taken from nearby sites. Silver geochemical values are also low.

North of Mitchell Glacier the 1976 work revealed erratic high molybdenum values in a narrow north-striking zone that includes samples #1131, (134 ppm Mo) and #1158 (154 ppm Mo). The abrupt termination of anomalous molybdenum values east and south of this zone is not explained by geological or geochemical factors that have been recognized. Apart from the north-south zone, the balance of the 1976 samples merely served to complete the contour patterns in a normal fashion. Lead and silver display similar and generally sympathetic variations. A pronounced linearity of the pattern of weakly anomalous lead and silver values is exhibited parallel to and immediately north of the trace of the northeast striking fault. In the extreme northeast corner of the survey grid, north of the fault trace sample number 1161 produced mixed results: the lead and molybdenum contents are anomalously high relative to those of nearby samples on the southwest side of the fault but the silver content is only slightly greater than that of the surrounding samples.

PART III

Conclusions and Recommendations

1. Conclusions

The 1976 rock geochemistry and geology work expanded coverage in the northeastern portion of the Sulphurets Creek project area and between the 1975 work and the south side of Mitchell Glacier. Six claim units were acquired by staking seven bedrock trenches were excavated. Additional information was gained concerning distribution of rock types and the nature of several fault structures. Seventy rock geochemical samples were collected and analysed for molybdenum, lead and silver and geochemical maps were added to and adjusted to reflect the new data.

2. Recommendations

Reconnaissance geochemical and geological work has been of great value in evaluating the Sulphurets mineral zone. Further progress will be achieved by employing more detailed methods. In particular geological mapping supplemented by petrographic studies is required. Better definition of rock types will aid the determination of structural patterns, a necessary step prior to initiation of drilling.

A P P E N D I X 1

STATEMENT OF QUALIFICATIONS

APPENDIX I. Statement of Qualifications

The professional qualifications of technical personnel engaged in the work reported on herein, are detailed below:

1. Ed Kruchkowski, B.Sc., Geologist - completed B.Sc. course at University of Alberta (Edmonton) in May 1972; in summers of 1969, 1971 and 1972 employed by Hecla Operating Company in Schaft Creek area as coresplitter, soil sampler and geologist respectively. In 1970 employed by consultant and assigned to projects in southeastern British Columbia. Employed by Hecla Operating Company as geologist from May, 1973 to June, 1974 and assigned to projects at Mess Creek, B.C. and Bute Inlet, B.C. under the direction of Erik Ostensoe and P. I. Conley, P.Eng. Employed by Granduc Mines, Limited (N.P.L.) from July, 1974 to present as geologist in charge of work on Sulphurets Creek property.

2. Erik A. Ostensoe, B.Sc. (Hons.), Member: Canadian Institute of Mining and Metallurgy, Association of Exploration Geochemists; geologist - completed B.Sc. Honours course at University of British Columbia in 1960 and course requirements of M.Sc. at Queen's University in 1966; employed by Newmont Mining Corporation of Canada Ltd., under direction of Dr. G. W. H. Norman, P.Eng., from May 1960 through August 1964 as field geologist in Granduc Mine area, B.C., by Mount Billings Venture in southeastern Yukon in summer 1965, by Scud Venture (Asarco) in Iskut River area, B.C. in summer 1966 and by Granduc Mines, Limited (N.P.L.) and Hecla Mining Company of Canada Ltd. from October 1966 to present as Chief Geologist and Exploration Supervisor respectively under the direction of P. I. Conley, P.Eng.

3. Chris Hrkac, student assistant, high school student now in senior year, lieutenant in Air Cadet Corps, employed in 1976 by R. O. Crosby & Associates as geophysical lineman and instrument operator in Merritt area, B.C. and by Granduc Mines, Limited (N.P.L.) as geochemical sampler, geological assistant and labourer in Stewart area, B.C.

A P P E N D I X 2

LEAD SILVER and MOLYBDENUM ANALYSES

rec'd Oct 18/76 EO

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38702

INVOICE NO. 18580

RECEIVED Sept. 28/76

ANALYSED Oct. 14/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings
Vancouver, B.C.

ATTN: Rock Geochem

SAMPLE NO. :	PPM Molybdenum	PPM Lead	PPM Silver
1107	9	16	1.5
1108	5	28	3.5
1109	<1	30	1.0
1110	<1	16	<0.5
1111	<1	10	1.5
1112	<1	6	0.5
1113	<1	26	<0.5
1114	9	12	1.5
1115	6	20	0.5
1116	76	34	2.0
1117	10	28	6.0
1118	26	6	6.5
1119	<1	12	<0.5
1120	<1	14	<0.5
1121	<1	8	<0.5
1122	198	10	3.0
1123	2	10	0.5
1124	<1	12	2.0
1125	<1	38	2.5
1126	<1	12	0.5
1127	<1	12	0.5
1128	<1	6	<0.5
1129	<1	6	0.5
1130	<1	10	1.5
1131	134	26	11
1132	5	18	<0.5
1133	5	10	2.5
1134	124	16	9.0
1135	9	250	3.0
1136	>500	12	2.5
1137	20	8	<0.5
1138	20	482	6.0
1139	4	120	3.5
1140	3	20	<0.5
1141	10	24	7.0
1142	15	12	<0.5
1143	<1	30	0.5
1144	<1	30	5.0
1145	<1	18	<0.5
1146	5	14	5.5
	9	96	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY:

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985 0648
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38703

INVOICE NO. 18580

RECEIVED Sept. 28/76

ANALYSED Oct. 14/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings
Vancouver, B.C.

ATTN:

SAMPLE NO. :	PPM Molybdenum	PPM Lead	PPM Silver
1147	4	34	1.5
1148	26	24	0.5
1149	2	10	1.5
1150	2	66	2.5
1151	14	88	4.5
1152	22	14	0.5
1153	< 1	8	<0.5
1154	< 1	10	<0.5
1155	< 1	18	1.0
1156	< 1	16	0.5
1157	1	14	1.0
1158	154	16	1.5
1159	10	117	5.0
1160	< 1	12	4.5
1161	4	74	2.0
1162	1	22	0.5
1163	64	18	1.5
1164	2	14	1.5
1165	76	6	<0.5
1166	330	6	0.5
1167	78	10	0.5
1168	2	8	<0.5
1169	132	8	4.0
1170	80	6	1.0
1171	118	4	0.5
1172	260	8	2.5
1173	98	16	1.5
1174	>500	8	2.5
1175	>500	18	0.5
1176	10	8	1.5
Std.	8	94	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY:

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

TO WIT:

In the Matter of Affidavit for Application to Record work on Iron Cap 1, 2, 3; Tedray 1, 2, 3, 5; and Grace claims

I, ERIK A. OSTENSOE

of 2009, 1177 West Hastings Street, Vancouver

in the Province of British Columbia, do solemnly declare that the following costs were incurred in a field program of mineral exploration that included trenching, geological mapping, and rock geochemical sampling on Iron Cap 1 - 3, Tedray 1 - 3, 5 and Grace claims located at Mitchell Glacier, Sulphurets Creek area, Skeena M.D., B.C. and for geochemical analyses, drafting, printing and report preparation subsequent to completion of field work:

1)	All applicable wages and payroll costs	$2,169.00
2)	All transportation costs except helicopter air fares	218.00
3)	Helicopter service	675.00
4)	Costs of expediting, accommodation and storage at Stewart, B.C.	200.00
5)	Groceries and supplies	550.00
6)	Drafting and printing	173.00
7)	Analyses - cost of preparation ($1.25/spl), molybdenum, lead and silver determinations ($2.60/spl) - 70 samples	269.00
	Total applicable expenditures	$4,254.00

Includes trenching cost

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the city of Vancouver, in the Province of British Columbia, this 26th

Erik A. Ostensoe.