

81-#1023 - 4742

ASSESSMENT REPORT

Geology, Percussion Drilling and  
Geochemical Analyses

SKUHUN GROUP OF MINERAL CLAIMS

November 1981

Paul Ruck



9792

ASSESSMENT REPORT

GEOLOGY, PERCUSSION DRILLING AND GEOCHEMICAL ANALYSES  
ON THE  
SKU 1 - 2245 (11), SKU 2 - 2246 (11), SKU 3 - 3072 (11) and  
GOOD NEWS 1 - 2374 (1) - Kamloops Mining Division  
SKU 4 - 757 (11) - Nicola Mining Division

Latitude: 50°18'N  
Longitude: 120° 57'W  
NTS Location: 92I/6E, 7W

OWNER: PEARL RESOURCES LTD., 3300-1055 W. Georgia St.  
Vancouver, B.C. V6E 3R3

OPERATOR: SMD MINING CO. LTD., 330-1130 W. Pender Street,  
Vancouver, B.C. V6E 4A4

By  
PAUL RUCK  
November 6, 1981

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## INTRODUCTION

### Location and Access

The Sku Claim Group is located at latitude 50°18'N; longitude 120°57'W, near the southern end of the Guichon Creek Batholith about 30.4 km northwest of Merritt, B.C. (Figure 1). The claims lie immediately south of Skuhun Creek and approximately 2500 m east of its confluence with Skuhost Creek.

Access to the property is via Skuhun Creek road from Highway 8 for 12.5 km. A four-wheel drive vehicle is recommended in wet weather conditions.

### Property

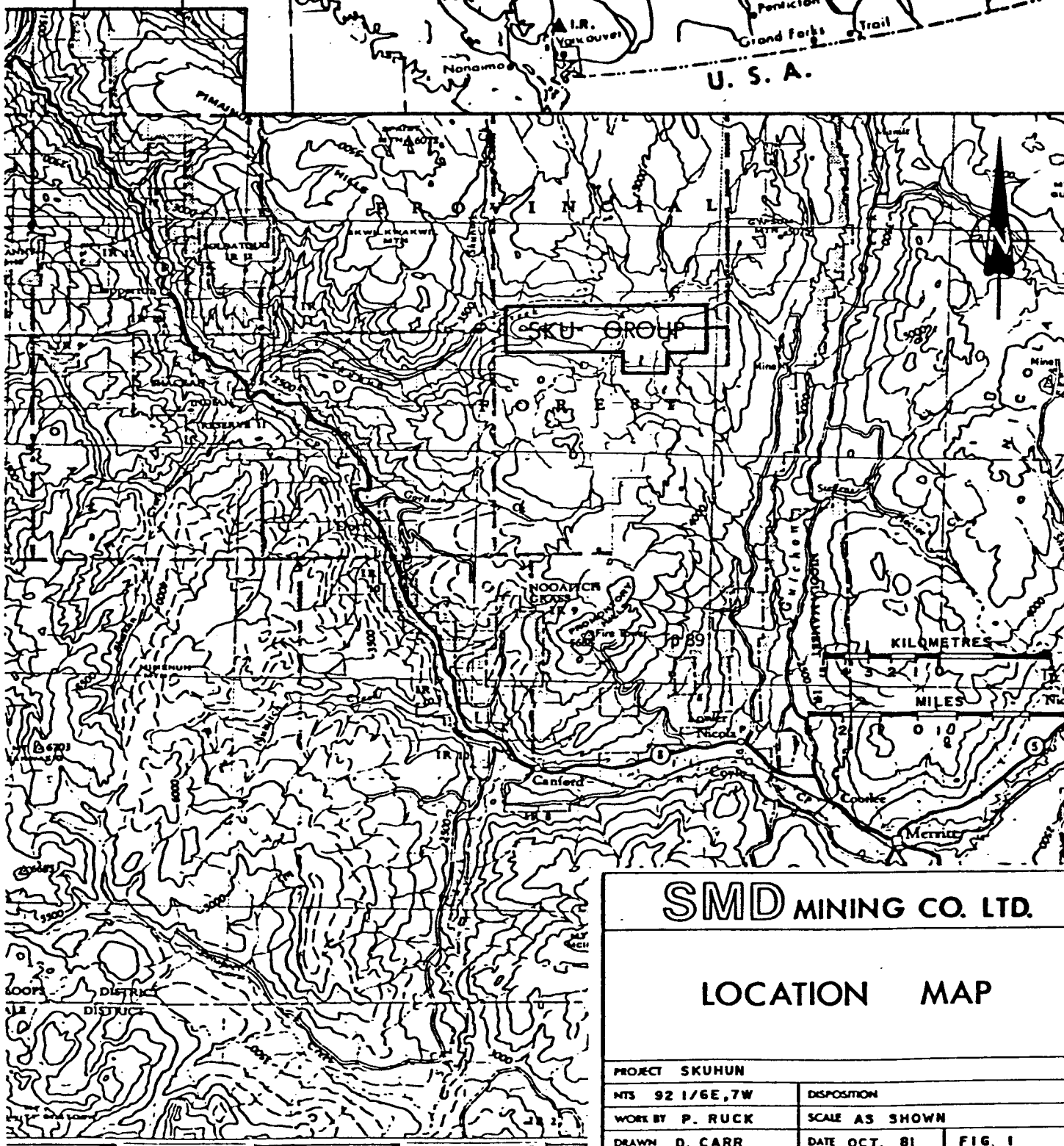
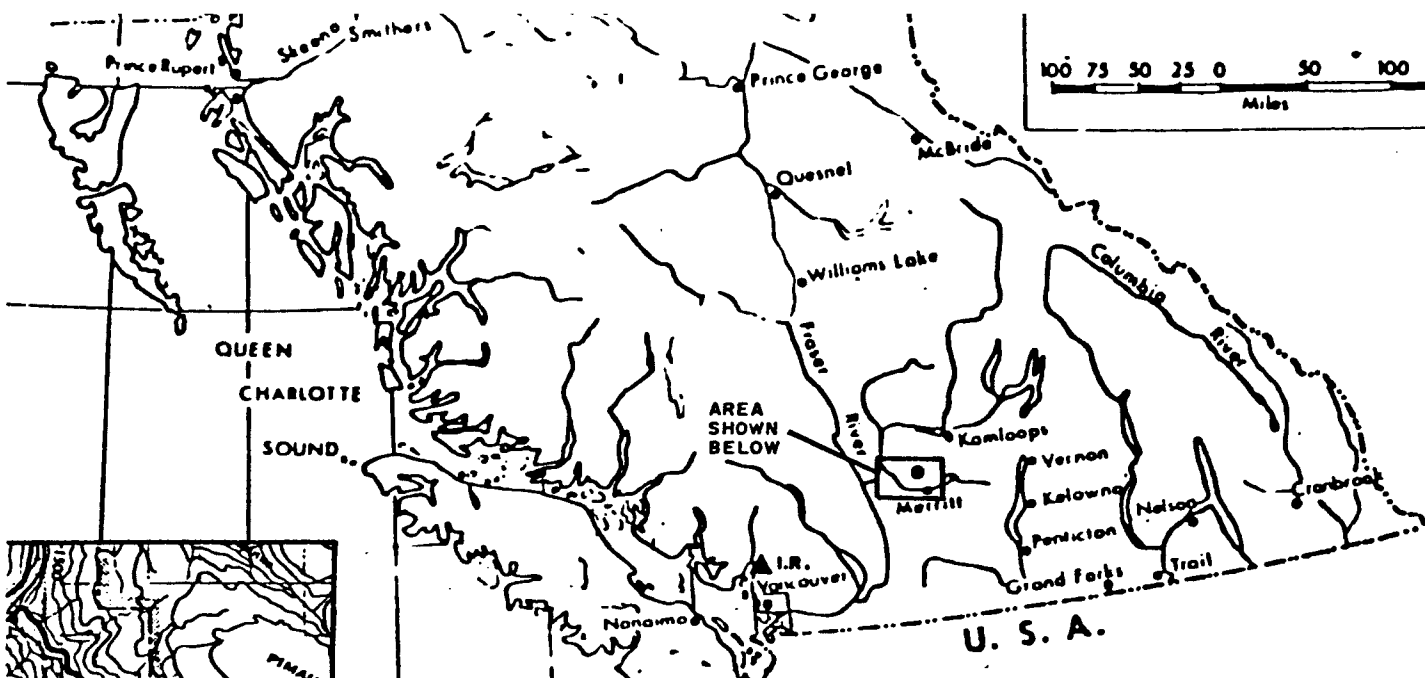
The property was acquired from Pearl Resources Ltd. in May 1981. The claim group, known as the Sku Group, consists of 82 units (Figure 2). The claim names, record numbers, recording dates, and number of units are as follows:

<u>Name</u>	<u>Record No.</u>	<u>Date of Recording</u>	<u>No. of Units</u>
Sku 1	2245	79/11/08	20
Sku 2	2246	70/11/08	20
Sku 3	3072	80/11/10	16
Sku 4	757	79/11/08	6
Good News 1	2374	80/01/28	20

The Sku 1-3 and Good News 1 claims are located in the Kamloops Mining Division and the Sku 4 claim is located in the Nicola Mining Division.

### Previous Work

The claim area and adjoining ground has been explored by Pearl Resources Ltd. (1979-80), Cities Service Minerals Corp. (1975-76), Canex Placer (1969-70) and Cominco (1969-81). The Ministry of Mines and Petroleum Resources mapped the area between 1969 and 1974.

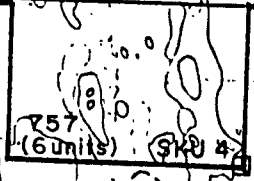
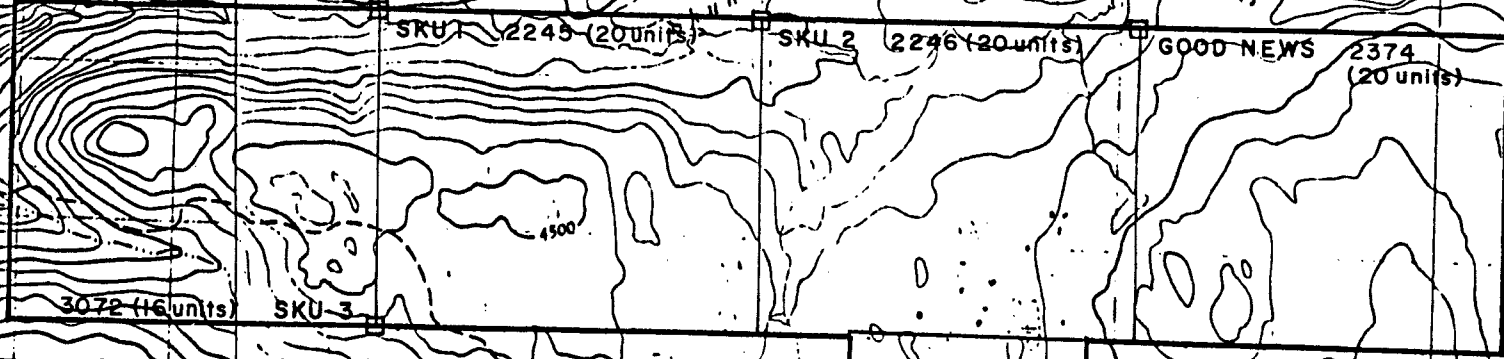


**SMD MINING CO. LTD.**

**LOCATION MAP**

PROJECT SKUHUN	DISPOSITION
NTS 92 1/6E,7W	SCALE AS SHOWN
WORK BY P. RUCK	DATE OCT. 81
DRAWN D. CARR	FIG. 1

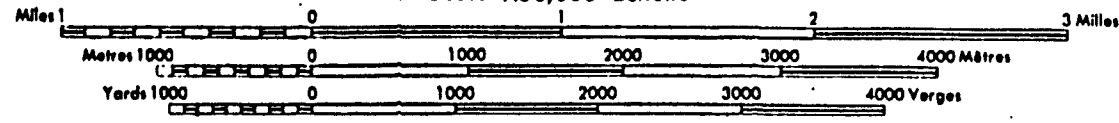
# FOREST



**SMD MINING CO. LTD.**

## CLAIM MAP

Scale 1:50,000 Échelle



PROJECT SKUHUN		
NTS 92 1/6E, 7W	DISPOSITION	
WORK BY P. RUCK	SCALE 1:50,000	
DRAWN D. CARR	DATE NOV. 81	FIG. 2

Pearl Resources Ltd. drilled seven percussion holes to test depths to bedrock and to obtain geological information and rock samples. The location of these holes is shown in Drawing SK1-1 (in map pocket). The highest values were 419 ppm copper and 5 ppm molybdenum.

Cities Service Minerals Corporation drilled three rotary drill holes north of Skuhun Creek (northwest of the Sku 1 claim) (Drawing SK1-1). No sulphide mineralization or hydrothermal alteration were reported.

Canex Placer and Cominco conducted magnetic, induced polarization-resistivity and geochemical surveys over parts of the Sku claim area and adjoining ground. Canex subsequently drilled eight percussion holes in the eastern section of Sku 2 (Drawing SK1-1).

### Geology

The Sku claims are located along the southern margin of the central core of the Guichon Batholith immediately east of the intersection of the Lornex and Skuhun Creek Faults. The claims overlie the Bethsaida quartz monzonite-Bethlehem granodiorite and the Bethlehem granodiorite-Chataway granodiorite contacts (Drawing SK1-1). The claims cover a zone of fractured rock located along the east-west trending Skuhun Creek Fault which is believed to occur within the northern claim boundary. Minor amounts of malachite and chalcopyrite were noted in outcrops on the Sku 1 claim, near percussion drill holes 80-1 and 80-2.

The copper-molybdenum deposits in the Highland Valley occur where major faults are intersected by other faults or structural features and where intense fracture zones and northerly-trending dyke swarms are associated with the Bethsaida-Bethlehem phase contact.

The Sku claim group covers an area geologically and structurally similar to the Highland Valley. The Skuhun Creek Fault is one of the major faults transecting the inner core of the Guichon Batholith. Two northerly-striking dyke swarms outcrop just north of the Sku claim area (Drawing SK1-1), and are projected to intersect the Skuhun fault within the claim.



The interpretation of magnetic surveys and airphotos suggests the presence of several north-south trending cross-faults which intersect the Skuhun Creek Fault and other lineaments. The areas of intersection would be expected to have the highest fracture density and the greatest potential for mineralization.

Much of the bedrock within the Sku claims is thickly covered by glacial debris. This condition predicates drilling as a means of evaluation.

#### Work Proposed

A geological survey and a percussion drilling program was proposed to test zones of predicted high fracture density at major structural lineament intersections.

#### WORK COMPLETED

##### Geology

The geological survey was undertaken to measure the density and orientation of fractures to identify areas of high fracture density related to intersecting structural features.

Fracture densities were measured in the outcrops on the claims and within a 500-1000 m wide zone around the claim boundaries. (Drawing SK1-2 in map pocket). This was done by measuring 10 m intervals on outcrops and counting the number of fractures within the interval that fell into each of the 18 ten degree (0°-180°) divisions.

Contouring the data failed to show any discernable patterns of fracture density relative to prominent or interpreted structural features. This was partly due to the scarcity of outcrop in many of the claim areas.

The map area was subsequently divided into five domains and the fracture orientations in each domain were plotted on rose diagrams. The results show the prominent fracture strike(s) in each domain (Drawing SK1-2). This data can be used to determine the optimum drill hole orientation.

Although most of the prominent fracture orientations and trends of the interpreted structural lineaments in each of the domains are generally parallel, some of the principal fracture directions seem to be unrelated to any of the interpreted structural features. These fractures could be associated with unrecognized structures.

The rose diagrams do not indicate the attitude of the fractures in the map area.

#### Road Construction

Approximately 4 km of roads were constructed to supplement the existing extensive road network to provide access to the drill sites. (Drawing SK1-1, in map pocket).

#### Percussion Drilling

The zones of predicted high fracture density at projected lineament intersections in areas of anticipated shallow overburden were percussion drilled. Nine vertical holes were drilled for an aggregate length of 713.3 metres.

#### Sample Preparation

The drill cuttings from each hole were collected in 3.05 m (10 ft) intervals and split 1:8 to obtain approximately 2 kg for geochemical analysis. About 50 g were taken from each sample and washed. The plus 3 mm fraction was stored in a vial for future use. A portion of the remaining washed sample was divided into plus 3 mm and minus 3 mm fractions and glued to mylar strips for petrological study. A description of the cuttings examined by B. Kite and the author is included in Appendix "A".

#### Analyses

The drill cuttings were analyzed geochemically for copper and molybdenum by Acme Analytical Laboratories Ltd. of Vancouver. The results of the analyses are included in Appendix "B".

## Discussion

The percussion drilling program did not identify any areas of significant copper-molybdenum mineralization. Percussion holes 81-4 and 81-8 were abandoned in overburden, leaving these areas unexplored.

All holes averaged in the range of 14 to 178 ppm copper and 1.1 to 1.8 ppm molybdenum (Table 1). Percussion holes 81-1 and 7 contained the highest copper content, averaging 178 and 125 ppm copper respectively.

The percussion drilling program was designed to test areas of high fracture density at projected lineament intersections. Although there is no direct evidence that the areas drilled were strongly fractured, the presence of rusty pyrite and magnetite throughout most of the holes indicates that the rocks have been fractured. Minor to moderate argillic and propylitic alteration was noted in all holes, and was most intense in hole 81-1.

Holes 81-1, 2 and 8, as well as testing lineaments, were also drilled in an area where a southeast trending lobe of the regional magnetic low, reflecting the Bethsaida phase, projects onto the claims. This feature, though of lower intensity, is similar to the magnetic response at the intersection of the Lornex and Skuhun Creek faults. It may reflect a major structural lineament with potential to host mineralization. The slightly higher copper content in hole 81-1 offers some tenuous support for this possibility.

TABLE 1

SUMMARY OF PERCUSSION DRILLING

PDH No.	Collar Elevation	Overburden Thickness(m)	Depth(m)	Lithology	Average Cu(ppm)	Assay Mo(ppm)
81-1	1387	3.7	100.6	Granodiorite Quartz Monzonite	178	1.8
81-2	1387	8.8	51.8	Tonalite Quartz Monzonite	14	1.1
81-3	1372	11.6	100.6	Granodiorite Quartz Diorite	29	1.2
81-4	1257	39.6+	39.6	Abandoned in Overburden		
81-5	1257	5.2	100.6	Granodiorite	41	1.6
81-6	1280	5.2	100.6	Quartz Diorite Granodiorite	45	1.3
81-7	1250	20.4	100.6	Quartz Diorite Granodiorite	125	1.1
81-8	1334	42.7+	42.7	Abandoned in Overburden		
81-9	1303	7.0	76.2	Granodiorite	34	1.1

## RECOMMENDATIONS

A diamond drilling program consisting of 5 holes is recommended for Sku 1 and 3 claims in the area where the Bethsaida phase lies along the Skuhun Creek fault. This drilling would explore the Skuhun Creek fault, attendant structural lineament intersections and the Bethsaida phase in areas associated with ground magnetic lows that could be indicative of high sulphide concentration or strong alteration.

Two additional holes are required to replace percussion holes 81-4 and 81-8 which were abandoned.

STATEMENT OF COSTS

GEOLOGICAL SURVEY

FIELD WORK (September 13-27, 1981)

Wages:

2 Geological Assistants x 15 man days @ \$74.67/man day \$ 2,240.10

Accommodation:

14 days @ \$30.74/day 430.76

Living allowance:

2 men x 13 man days @ \$21.00/man day 546.00

Travel allowance:

2 men x 2 man days @ \$19.00/man day 76.00

Vehicle rental (includes gas and maintenance):

15 days @ \$50.00/day 750.00

\$ 4,042.86

OFFICE WORK

Drafting and compilation (September 28-October 4, 1981)

Wages:

2 Geological Assistants x 7 man days @ \$53.00/man day \$ 742.00

1 Geologist x 7 man days @ \$77.00/man day 539.00

1 Senior Geologist x 1 man day @ \$100.00/man day 100.00

1 Draftsman x 3 man days @ \$70.00/man day 210.00

\$ 1,591.00

PERCUSSION DRILLING

FIELD WORK

Contractor Costs:

Percussion Drilling, 713.3 metres @ \$23.92/metre  
October 19-24, 1981

\$ 17,064.00

Percussion Drilling (Cont'd)

Company Costs: (October 18-27, 1981)

Wages:

2 Geological Assistants x 10 man days @ \$74/67/man day \$ 1,493.40

Accommodation:

8 days @ \$48.00/day 384.00

Living Allowance:

2 men x 9 days @ \$21.00/day 378.00

Travel Allowance:

2 men x 1 day @ \$19.00/day 39.00

Vehicle Rental (includes gas and maintenance)

10 days @ \$50.00/day 500.00

Vials for sample cuttings 24.01

\$ 2,817.40

OFFICE WORK

Drafting and compilation (October 28-November 6, 1981)

Wages:

2 Geological Assistants x 10 man days @ \$53.00/man day \$ 1,060.00

1 Geologist x 2 man days @ \$77.00/man day 154.00

1 Senior Geologist x 1 man day @ \$100.00/man day 100.00

1 Technician x 2 mandays @ \$53.00/man day 106.00

1 Draftsman x 1 man day @ \$70.00/man day 70.00

\$ 1,490.00

Geochemical Analysis:

184 samples @ \$6.00/sample \$ 1,104.00

TOTAL \$ 22,475.40

Note: Of the \$28,109.26, the amount recorded on November 6, 1981 was: \$27,520.00

GRAND TOTAL \$28,109.26

PHYSICAL WORK

Road Construction (October 5-18, 1981)

Bulldozer, operator and assistant:

79 hours @ \$96.00/hr \$ 7,584.00

3 Slash Cutters x 13 man days @ \$70.00/man day 2,730.00

Meals and Accommodation:

2 men x 13 days @ \$81.00/day 1,053.00

Vehicle Rental (includes gas and maintenance):

13 days @ \$50.00/day 650.00

Chain Saw Rental: 160.00

Chain Saw maintenance and fuel: 83.00

TOTAL

\$ 12,260.00

Note: Of the \$12,260.00, the amount  
recorded on November 6, 1981  
was: \$12,200.00



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APPENDIX A

DRILL LOGS FOR P.D. HOLES 81-1, 2, 3, 5, 6, 7 AND 9

PERCUSSION DRILL LOGS - SKUHUN

Percussion Hole 81-1

0 - 3.7 m	Overburden
3.7 - 9.1 m	Plagioclase (55%) - Kspar (25%) - Quartz (20%) Biotite (7%) - Hornblende (7%). Minor carbonate chlorite-muscovite-sericite alteration GRANODIORITE.
9.1 - 12.2 m	As above, but hornblende greater than biotite. Minor chlorite-epidote-carbonate-muscovite alteration. GRANODIORITE
12.2 - 15.2 m	Plagioclase (55%) - Kspar (30%) - Quartz (15%) Biotite (5%) - Hornblende (5%) Minor epidote chlorite - carbonate alteration. Trace muscovite- sericite. QUARTZ MONZONITE
15.2 - 18.3 m	Plagioclase (55%) - Kspar (20%) - Quartz (25%) Biotite (5%) - Hornblende (10%). Minor chlorite- epidote-carbonate-muscovite alteration. Some Fe-oxide staining. GRANODIORITE
18.3 - 21.3 m	Plagioclase (55%) - Kspar (35%) - Quartz (10%) Biotite (5%) - Hornblende (5%). Minor epidote- chlorite alteration. Some sericite-carbonate alteration. QUARTZ MONZONITE
21.3 - 24.4 m	Plagioclase (60%) - Kspar (20%) - Quartz (20%) Biotite (10%) - Hornblende (5%). Minor chlorite- epidote alteration. Some muscovite-sericite-carbonate alteration. GRANODIORITE
24.4 - 27.4 m	Plagioclase (55%) - Kspar (30%) - Quartz (15%) Biotite (10%) - Hornblende (5%). Minor chlorite epidote alteration. Some muscovite-sericite- carbonate alteration. QUARTZ MONZONITE
27.4 - 30.5 m	Plagioclase (60%) - Kspar (15%) - Quartz (25%) Biotite (10%) - Hornblende (5%). Minor chlorite- epidote-carbonate alteration. Trace muscovite- sericite alteration. GRANODIORITE
30.5 - 33.5 m	As above, but hornblende greater than biotite. Mod- erate chlorite-epidote alteration. Minor sericite- carbonate alteration. GRANODIORITE
33.5 - 36.6 m	As above, but less chlorite-epidote and more muscovite-sericite alteration. GRANODIORITE.
36.6 - 39.6 m	As above, but trace pyrite. GRANODIORITE
39.6 - 42.7 m	As above, but minor chlorite-epidote-sericite-

(39.6-42.7 m) carbonate alteration. GRANODIORITE

42.7 - 45.7 m As above. GRANODIORITE

45.7 - 48.8 m As above. GRANODIORITE

48.8 - 51.8 m As above, but moderate sericite and minor chlorite-epidote-carbonate alteration. GRANODIORITE.

51.8 - 54.9 m As above, but trace malachite and pyrite GRANODIORITE

54.9 - 57.9 m As above, but trace malachite. GRANODIORITE

57.9 - 61.0 m As above, but minor sericite alteration. GRANODIORITE

61.0 - 64.0 m As above, but only trace sericite alteration. GRANODIORITE

64.0 - 67.1 m Plagioclase (55%) - Kspar (35%) - Quartz (10%) Biotite (10%) - Hornblende (7%). Moderate chlorite-epidote alteration. Minor sericite-carbonate alteration. QUARTZ MONZONITE

67.1 - 70.1 m As above. QUARTZ MONZONITE

70.1 - 73.2 m As above. QUARTZ MONZONITE

73.2 - 76.2 m Plagioclase (55%) - Kspar (20%) - Quartz (25%) Biotite (7%) - Hornblende (5%). Moderate chlorite-epidote-carbonate alteration. Minor sericite alteration. GRANODIORITE

76.2 - 79.3 m As above, except minor chlorite-epidote-carbonate sericite alteration. GRANODIORITE

79.3 - 82.3 m As above. GRANODIORITE

82.3 - 85.4 m Plagioclase (55%) - Kspar (30%) - Quartz (15%) Biotite (10%) - Hornblende (7%). Minor epidote chlorite-carbonate alteration. Minor Fe-oxide stain. QUARTZ MONZONITE

85.4 - 88.4 m As above, QUARTZ MONZONITE

88.4 - 91.5 m As above, but increased chlorite-epidote-carbonate alteration. QUARTZ MONZONITE

91.5 - 94.5 m As above, but with decreased carbonate alteration. QUARTZ MONZONITE

94.5 - 97.6 m As above, but also includes trace malachite. QUARTZ MONZONITE

97.6 - 100.6 m As above, but includes minor muscovite - sericite alteration. No malachite. QUARTZ MONZONITE.

Summary: Granodiorite becoming quartz monzonitic at depth. Approximately 10-15% mafics, mainly biotite and hornblende in equal amounts. Weak to moderate epidote alteration after plagioclase. Variable kaolinization of plagioclase throughout. Mafics variably chloritized. Trace to minor amounts of magnetite and hematite throughout. Trace malachite staining at 51.8 - 57.9 and 94.5 - 97.6 m intervals.

Percussion Hole 81-2

0 - 8.8 m	Overburden
8.8 - 12.2 m	Plagioclase (70%) - Kspar (5%) - Quartz (20-25%) Biotite (5%) - Hornblende (10%). Trace chlorite- carbonate alteration. Some limonitic stained fragments. TONALITE
12.2 - 15.2 m	As above. TONALITE
15.2 - 18.3 m	Plagioclase (50-55%) - Kspar (15-20%) - Quartz (25%) Biotite (5%) - Hornblende (10%). Minor chlorite- sericite-carbonate alteration. Trace pyrite. GRANODIORITE
18.3 - 21.3 m	As above, but only trace chlorite-sericite alteration. Rust staining. GRANODIORITE
21.3 - 24.4 m	As above, but with moderate epidote-chlorite sericite-carbonate alteration. Trace pyrite GRANODIORITE.
24.4 - 27.4 m	Plagioclase (75-80%) - Kspar (5%) - Quartz (15-20%) Biotite (5%) - Hornblende (5%). Minor epidote- chlorite-carbonate and trace muscovite-sericite alteration. QUARTZ DIORITE
27.4 - 30.5 m	As above, but with moderate chlorite-sericite and trace epidote alteration. Trace malachite. Some rusty staining. QUARTZ DIORITE
30.5 - 33.5 m	As above. Trace malachite. QUARTZ DIORITE
33.5 - 36.6 m	Plagioclase (50-55%) - Kspar (20%) - Quartz (20-25%) Biotite (5%) - Hornblende (10%). Moderate chlorite and minor epidote-carbonate-sericite alteration. Some rust staining. GRANODIORITE.
36.6 - 39.6 m	Plagioclase (50%) - Kspar (30-35%) - Quartz (10-15%) Biotite (3%) - Hornblende (3%). Minor chlorite- carbonate and trace epidote-sericite alteration. Trace pyrite. QUARTZ MONZONITE
39.6 - 42.7 m	As above, but with increased chlorite-carbonate (calcite) alteration. QUARTZ MONZONITE
42.7 - 45.7 m	As above. QUARTZ MONZONITE
45.7 - 48.8 m	As above. QUARTZ MONZONITE
48.8 - 51.8 m	As above, but with minor chlorite-carbonate-epidote and trace sericite alteration. QUARTZ MONZONITE

## Summary:

Tonalite changing to granodiorite, quartz diorite and ultimately quartz monzonite with depth. 10-15% mafics, principally biotite and hornblende, the latter being more abundant. Mafics are weakly to moderately chloritized. Weak to moderate epidotization of plagioclase. Sericitization variably weak to moderate. Carbonate (calcite) and magnetite throughout. Trace malachite staining of individual grains noted 27.4 - 33.5 m interval.

Percussion Hole 81-3

0 - 11.6 m	Overburden
11.6 - 15.2 m	Plagioclase (60-65%) - Kspar (15%) - Quartz (20-25%) Biotite (5%) - Hornblende (7%). Moderate chlorite- carbonate and minor epidote-sericite alteration. GRANODIORITE
15.2 - 18.3 m	As above. GRANODIORITE
18.3 - 21.3 m	As above, but with increased epidote. GRANODIORITE
21.3 - 24.4 m	As above but decreased epidote and trace sericite alteration. GRANODIORITE
24.4 - 27.4 m	As above. GRANODIORITE
27.4 - 30.5 m	As above, except increased carbonatization. GRANODIORITE
30.5 - 33.5 m	As above, but trace pyrite. GRANODIORITE
33.5 - 36.6 m	As above, but with moderate chlorite-carbonate and minor epidote-sericite alteration. GRANODIORITE
36.6 - 39.6 m	As above, but increased sericite and decreased carbonate. GRANODIORITE
39.6 - 42.7 m	As above, but with moderate chlorite-carbonate alteration and trace epidote. GRANODIORITE
42.7 - 45.7 m	Plagioclase (65%) - Kspar (20%) - Quartz (15%) Biotite (7%) - Hornblende (5%). Moderate chlorite- carbonate, minor sericite and trace epidote altera- tion. Trace pyrite. QUARTZ MONZONITE
45.7 - 48.8 m	As above, but with increased sericite. No pyrite. QUARTZ MONZONITE
48.8 - 51.8 m	Plagioclase (75-80%) - Kspar (5%) - Quartz (15-20%) Biotite (10%) - Hornblende (5%). Moderate chlorite- carbonate-sericite and trace epidote alteration. Biotite increasingly altered to chlorite. Some rusty staining. QUARTZ DIORITE
51.8 - 54.9 m	As above, but no rust staining. QUARTZ DIORITE
54.9 - 57.9 m	As above, but with moderate epidotization and decreased sericite alteration. QUARTZ DIORITE
57.9 - 61.0 m	As above. QUARTZ DIORITE
61.0 - 64.0 m	Plagioclase (50-55%) - Kspar (30-35%) - Quartz (15-20%) Biotite (5%) - Hornblende (5%). Moderate chlorite- carbonate and minor epidote-sericite alteration. QUARTZ MONZONITE



- 64.0 - 67.1 m Plagioclase (75-80%) - Kspar (5%) - Quartz (15-20%)  
Biotite (7%) - Hornblende (5%). Moderate chlorite  
-carbonate and minor epidote-sericite alteration.  
QUARTZ DIORITE
- 67.1 - 70.1 m As above, but trace epidote. QUARTZ DIORITE
- 70.1 - 73.2 m As above, except chlorite decreased and only  
trace Kspar. QUARTZ DIORITE.
- 73.2 - 76.2 m As above. QUARTZ DIORITE
- 76.2 - 79.3 m As above. QUARTZ DIORITE
- 79.3 - 82.3 m As above, but with moderate chlorite-carbonate,  
minor sericite and trace epidote alteration.  
QUARTZ DIORITE
- 82.3 - 85.4 m As above. QUARTZ DIORITE
- 85.4 - 88.4 m As above, but with trace pyrite. QUARTZ DIORITE
- 88.4 - 91.5 m As above, no pyrite. QUARTZ DIORITE
- 91.5 - 94.5 m As above except carbonate increased (5%). Trace  
pyrite. QUARTZ DIORITE
- 94.5 - 97.5 m As above, no pyrite. QUARTZ DIORITE
- 97.5 - 100.6 m As above. QUARTZ DIORITE

## Summary:

Granodiorite becoming quartz diorite at depth.  
Mafics 5-15%, mainly biotite and hornblende with  
the former more abundant. Quartz monzonite phase  
(possibly a dike) between 61-64.0 m. Mafics  
variably chloritized, weak to moderate. Epidotization  
decreasing with depth. Carbonatization moderate,  
becoming strong (5-10%) with depth. Sericitization  
weak - minor throughout. Trace magnetite throughout.

Percussion Hole 81-5

0 - 5.2 m	Overburden
5.2 - 9.1 m	Plagioclase (65%) - Kspar (10%) - Quartz (25%) Biotite (5%) - Hornblende (5%). Minor carbonate and trace chlorite-epidote-sericite alteration. GRANODIORITE
9.1 - 12.2 m	As above, but with increased chlorite and epidote alteration. GRANODIORITE
12.2 - 15.2 m	As above. GRANODIORITE
15.2 - 18.3 m	As above, but with minor chlorite-carbonate and trace epidote-sericite alteration. GRANODIORITE
18.3 - 21.3 m	As above. GRANODIORITE
21.3 - 24.4 m	As above, but decreased chlorite-carbonate alteration. Trace muscovite. GRANODIORITE
24.4 - 27.4 m	As above but with trace muscovite and phlogopite. GRANODIORITE
27.4 - 30.5 m	As above, but minor chlorite-carbonate alteration. GRANODIORITE
30.5 - 33.5 m	As above, but no muscovite or phlogopite. GRANODIORITE
33.5 - 36.6 m	As above, with trace phlogopite. GRANODIORITE
36.6 - 39.6 m	As above, but with minor phlogopite and only trace hornblende. GRANODIORITE
39.6 - 42.7 m	As above, GRANODIORITE
42.7 - 45.7 m	As above, GRANODIORITE
45.7 - 48.8 m	As above, but with trace malachite. GRANODIORITE
48.8 - 51.8 m	As above, but with increased chlorite-carbonate alteration and hornblende (5%). No malachite. Some rusty staining. GRANODIORITE
51.8 - 54.9 m	As above, but with increased sericite alteration. GRANODIORITE
54.9 - 57.9 m	Plagioclase (50-55%) - Kspar (30-35%) - Quartz (15-20%) Biotite (5%) - Hornblende (5%). Minor chlorite- carbonate-sericite and trace epidote alteration. QUARTZ MONZONITE

57.9 - 61.0 m	As above, but increased sericite alteration. QUARTZ MONZONITE
61.0 - 64.0 m	As above, but biotite (10%) greater than amphibole (5%). QUARTZ MONZONITE
64.0 - 67.1 m	As above. QUARTZ MONZONITE
67.1 - 70.1 m	As above. QUARTZ MONZONITE
70.1 - 73.2 m	As above, but with decreased sericite (trace) QUARTZ MONZONITE
73.2 - 76.2 m	As above, but with minor chlorite-carbonate-epidote alteration. QUARTZ MONZONITE
76.2 - 79.3 m	As above, but with minor phlogopite. QUARTZ MONZONITE
79.3 - 82.3 m	Plagioclase (55-60%) - Kspar (15-20%) - Quartz (25%) Biotite (7%) - Hornblende (3%). Minor chlorite-carbonate-epidote and trace sericite alteration. Minor phlogopite. GRANODIORITE
82.3 - 85.4 m	As above, but with decreased epidote (trace) alteration. GRANODIORITE
85.4 - 88.4 m	As above. GRANODIORITE
88.4 - 91.5 m	As above, but only trace phlogopite present. GRANODIORITE
91.5 - 94.5 m	As above. GRANODIORITE
94.5 - 97.6 m	As above. GRANODIORITE
97.6 - 100.6 m	As above, but no phlogopite. GRANODIORITE

## Summary:

Granodiorite changing to quartz monzonite back to granodiorite with increasing depth. Mafics 10-15% with biotite more abundant than hornblende. Weak to minor epidotization and variable kaolinization of plagioclase throughout. Sericitization weak overall. Minor phlogopite present in middle intervals where amphibole is absent or present in only trace amounts. Magnetite and carbonate present throughout in minor amounts.

Percussion Hole 81-6

0 - 5.2 m	Overburden
5.2 - 9.1 m	Plagioclase (80-85%) - Kspar (trace) - Quartz (15-20%) Biotite (10%) - Hornblende (5%). Minor sericite and trace chlorite-epidote-carbonate alteration. Minor phlogopite. QUARTZ DIORITE
9.1 - 12.2 m	As above, but hornblende (trace) decreased. QUARTZ DIORITE
12.2 - 15.2 m	As above. QUARTZ DIORITE
15.2 - 18.3 m	As above, but Kspar (5%) increased. Trace malachite. QUARTZ DIORITE
18.3 - 21.3 m	As above, but no malachite, only trace phlogopite. QUARTZ DIORITE
21.3 - 24.4 m	As above, but hornblende (2-3%) increased. QUARTZ DIORITE
24.4 - 27.4 m	As above. QUARTZ DIORITE
27.4 - 30.5 m	As above, but with minor chlorite-carbonate and trace epidote-sericite alteration. Trace hornblende. QUARTZ DIORITE
30.5 - 33.5 m	As above, but Kspar decreased and trace phlogopite. QUARTZ DIORITE
33.5 - 36.6 m	As above, but with increased carbonate alteration. QUARTZ DIORITE
36.6 - 39.6 m	As above, but with minor chlorite-carbonate-epidote and trace sericite alteration. QUARTZ DIORITE
39.6 - 42.7 m	As above. QUARTZ DIORITE
42.7 - 45.7 m	Plagioclase (70-75%) - Kspar (5%) - Quartz (20-25%) Biotite (10%) - Hornblende (2-3%). Minor chlorite- carbonate-epidote-sericite alteration. TONALITE
45.7 - 48.8 m	As above. TONALITE
48.8 - 51.8 m	As above, but with minor phlogopite and muscovite. TONALITE
51.8 - 54.9 m	As above. TONALITE
54.9 - 57.9 m	As above. TONALITE

57.9 - 61.0 m	Plagioclase (65%) - Kspar (10%) - Quartz (25%) Biotite (10%) - Hornblende (2-3%). Minor chlorite-carbonate-sericite-epidote alteration. Trace muscovite and phlogopite. GRANODIORITE
61.0 - 64.0 m	As above, biotite and hornblende altered to chlorite. GRANODIORITE
64.0 - 67.1 m	As above. GRANODIORITE
67.1 - 70.1 m	As above. GRANODIORITE
70.1 - 73.2 m	As above. GRANODIORITE
73.2 - 76.2 m	As above, but only trace hornblende, and decreased epidotization (trace). GRANODIORITE
76.2 - 79.3 m	As above. GRANODIORITE
79.3 - 82.3 m	As above. GRANODIORITE
82.3 - 85.4 m	As above. GRANODIORITE
85.4 - 88.4 m	As above, but Kspar increased. GRANODIORITE
88.4 - 91.5 m	As above, but increased epidotization and trace malachite. GRANODIORITE
91.5 - 94.5 m	As above, but with increased sericite. No malachite GRANODIORITE
94.5 - 97.6 m	As above. GRANODIORITE
97.6 - 100.6 m	As above. GRANODIORITE

## Summary:

Quartz diorite changing to tonalite (42.7 - 57.9 m interval), becoming granodioritic at depth. Mafics 10-15% with biotite more abundant than hornblende. Hornblende present in trace amounts at depth. Overall minor alteration except for local chloritization of biotite and variable epidotization and kaolinization of plagioclase. Minor carbonate and trace magnetite throughout. Trace malachite staining noted at intervals between 15.2 and 18.4 m and 88.4 and 91.5 m.

Percussion Hole 81-7

0 - 20.4 m	Overburden
20.4 - 24.4 m	Plagioclase (80-85%) - Kspar (3-5%) - Quartz (15-20%) Biotite (5%) - Hornblende (2%). Minor carbonate and trace chlorite-epidote-sericite alteration. QUARTZ DIORITE
24.4 - 27.4 m	As above, but with minor chlorite-carbonate alteration and trace hornblende. QUARTZ DIORITE
27.4 - 30.5 m	As above. QUARTZ DIORITE
30.5 - 33.5 m	As above, but with increased sericite alteration. QUARTZ DIORITE
33.5 - 36.6 m	As above. QUARTZ DIORITE
36.6 - 39.6 m	Plagioclase (60-65%) - Kspar (15%) - Quartz (20-25%) Biotite (10%) - Hornblende (trace). Minor chlorite- carbonate-epidote-sericite alteration. GRANODIORITE
39.6 - 42.7 m	As above. GRANODIORITE
42.7 - 45.7 m	As above. GRANODIORITE
45.7 - 47.9 m	As above. GRANODIORITE
47.9 - 51.8 m	As above. GRANODIORITE
51.8 - 54.9 m	As above, but Kspar decreased to 7%, biotite increased to 15% and only trace epidote alteration. GRANODIORITE
54.9 - 57.9 m	Plagioclase (70-75%) - Kspar (3-5%) - Quartz (20-25%) Biotite (15%) - Hornblende (2-3%). Minor chlorite- carbonate-sericite and trace epidote alteration. TONALITE
57.9 - 61.0 m	As above, but hornblende only trace. TONALITE
61.0 - 64.0 m	As above, but Kspar only trace and biotite increased to 25-30%. TONALITE
64.0 - 67.1 m	Plagioclase (65-70%) - Kspar (10%) - Quartz (20-25%) Biotite (10%) - Hornblende (trace). Minor chlorite- carbonate sericite and trace epidote alteration. GRANODIORITE
67.1 - 70.1 m	As above. GRANODIORITE
70.1 - 73.2 m	As above, but with increased hornblende and decreased biotite. GRANODIORITE
73.2 - 76.2 m	As above, but with increased sericitization.

76.2 - 79.3 m As above. GRANODIORITE  
79.3 - 82.3 m As above, but with decreased sericite (trace) and carbonate (trace). Trace pyrite. GRANODIORITE  
82.3 - 85.4 m As above, but with trace amphibole. No pyrite. GRANODIORITE  
85.4 - 88.4 m As above, but with trace pyrite. GRANODIORITE  
88.4 - 91.5 m As above, but no pyrite. GRANODIORITE  
91.5 - 94.5 m As above but no pyrite. GRANODIORITE  
94.5 - 97.6 m As above, but with minor chlorite-carbonate-epidote-sericite alteration and trace pyrite. GRANODIORITE  
97.6 - 100.6 m As above. GRANODIORITE

## Summary:

Quartz diorite changing to granodiorite with depth with a possible tonalitic dike between 54.9 and 64.0 m. Mafics 10-12% with biotite predominant. Generally weak to minor alteration overall, except for local chloritization of biotite. Variable epidotization and kaolinization of plagioclase throughout. Minor carbonate and trace magnetite throughout. Trace pyrite at several intervals.

Percussion Hole 81-9

0 - 7.0 m Overburden

7.0 - 12.2 m Plagioclase (60%) - Kspar (7-10%) - Quartz (30%)  
Biotite (5%) - Hornblende (5%). Minor chlorite-  
carbonate-epidote alteration. Trace muscovite.  
GRANODIORITE

12.2 - 15.2 m As above, but with trace epidotization. GRANODIORITE

15.2 - 18.3 m As above, but increased biotite (15%). GRANODIORITE

18.3 - 21.3 m As above but increased chloritization of mafics,  
minor phlogopite. GRANODIORITE

21.3 - 24.4 m As above. GRANODIORITE

24.4 - 27.4 m As above, but with increased epidotization and  
decreased hornblende (1%). GRANODIORITE

27.4 - 30.5 m As above, but only trace epidote. GRANODIORITE

30.5 - 33.5 m As above. GRANODIORITE

33.5 - 36.6 m As above. GRANODIORITE

36.6 - 39.6 m As above. GRANODIORITE

39.6 - 42.7 m As above. GRANODIORITE

42.7 - 45.7 m As above, but hornblende increased (5%).  
GRANODIORITE

45.7 - 48.8 m As above, but only trace hornblende. Trace pyrite.  
GRANODIORITE

48.8 - 51.8 m As above, but no pyrite. GRANODIORITE

51.8 - 54.9 m As above. GRANODIORITE

54.9 - 57.9 m As above. GRANODIORITE

57.9 - 61.0 m As above. GRANODIORITE

61.0 - 64.0 m As above, but with minor sericite alteration.  
GRANODIORITE

64.0 - 67.1 m As above, but with some phlogopite. GRANODIORITE

67.1 - 70.1 m As above. GRANODIORITE

70.1 - 73.2 m As above. GRANODIORITE



73.2 - 76.2 m      As above.    GRANODIORITE

Summary:                    Granodiorite throughout. Mafics 10-15%, biotite more abundant than hornblende, with progressive disappearance of latter with depth. Overall weak to minor alteration, except for local chloritization of biotite.

Comments:                    It should be noted that the estimated percentages of light coloured minerals are very subjective because no staining of the Kspar was done prior to examining the cuttings.

STATEMENT OF QUALIFICATIONS

I am a B.Sc (Honours) Geology graduate of Lakehead University, Thunder Bay, Ontario (1981).

I am a member of the C.I.M. My work experience consists of three summers of exploration geology in Quebec, Ontario prior to graduation, and seven months in British Columbia with SMD Mining Co. Ltd.

Blair Kite

APPENDIX B

GEOCHEMICAL ANALYSES OF DRILL CUTTINGS  
OF PERCUSSION HOLES 81-1, 2, 3, 5, 6, 7 AND 9



To: Saskatchewan Mining Development Corp.  
#330 - 1130 W. Pender St.,  
Vancouver, B.C.  
V6E 4A4  
c.c. Mr. Steven Earle, Saskatoon

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6  
phone:253 - 3158

File No. 81-1758

Type of Samples P. Cutting

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

Project : Skuhun 4944 Req.No.: 0566

SAMPLE No.	Mo	Cu																			
PDH 1 12- 30	1	72																			1
30- 40	1	106																			2
40- 50	2	255																			3
50- 60	12	186																			4
60- 70	3	215																			5
70- 80	2	136																			6
80- 90	1	230																			7
90-100	1	192																			8
100-110	1	166																			9
110-120	1	168																			10
120-130	1	98																			11
130-140	3	148																			12
140-150	2	125																			13
150-160	3	345																			14
160-170	3	126																			15
170-180	1	520																			16
180-190	1	142																			17
190-200	1	84																			18
200-210	1	82																			19
210-220	1	330																			20
220-230	1	168																			21
230-240	1	128																			22
240-250	1	225																			23
250-260	2	146																			24
260-270	1	205																			25
270-280	1	110																			26
280-290	1	102																			27
290-300	1	98																			28
300-310	1	360																			29
310-320	1	164																			30
320-330	1	166																			31
																					32
																					33
																					34
																					35
																					36
																					37
																					38
																					39
																					40

All reports are the confidential property of clients  
results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Oct. 29, 1981

DATE REPORTS MAILED Nov. 9, 1981

ASSAYER Dean Toye

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER





File No. 81-1701

Type of Samples Percussion

Disposition cuttings

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Mo	Cu																				
PDH-3 270-280	1	21																			1	
280-290	1	34																				2
290-300	1	44																				3
300-310	2	46																				4
310-320	1	38																				5
320-330	2	40																				6
																						7
																						8
PDH-5 17- 30	2	43																				9
30- 40	1	60																				10
40- 50	2	45																				11
50- 60	2	33																				12
60- 70	1	38																				13
70- 80	1	24																				14
80- 90	1	19																				15
90-100	1	19																				16
100-110	2	25																				17
110-120	3	25																				18
120-130	3	50																				19
130-140	1	22																				20
140-150	1	27																				21
150-160	1	43																				22
160-170	2	30																				23
170-180	1	27																				24
180-190	2	35																				25
190-200	2	56																				26
200-210	1	47																				27
210-220	1	40																				28
220-230	1	52																				29
230-240	1	38																				30
240-250	4	37																				31
250-260	1	34																				32
260-270	1	70																				33
270-280	2	50																				34
280-290	1	60																				35
290-300	1	53																				36
300-310	2	50																				37
310-320	3	60																				38
320-330	1	60																				39
																						40

All reports are the confidential property of clients  
 A" results are in PPM.  
 LOCATION:.....  
 DETERMINATION:.....

DATE SAMPLES RECEIVED Oct. 26, 1981  
 DATE REPORTS MAILED Nov. 9, 1981  
 ASSAYER Dean Toy  
 DEAN TOYE, B.Sc.  
 CHIEF CHEMIST  
 CERTIFIED B.C. ASSAYER







APPENDIX C

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Paul Ruck, of the City of Vancouver, in the Province of British Columbia, hereby certify the following:

I am a geologist currently employed with SMD Mining Co. Ltd. at 330-1130 West Pender St, Vancouver, B.C.

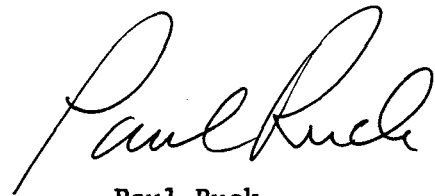
I am a graduate of the University of Ottawa with a B.Sc Geology (1978). I subsequently obtained the degree of M.Sc. Applied (Mineral Exploration) from McGill University in 1981.

I have worked as an exploration geologist while attending post-graduate school at McGill University.

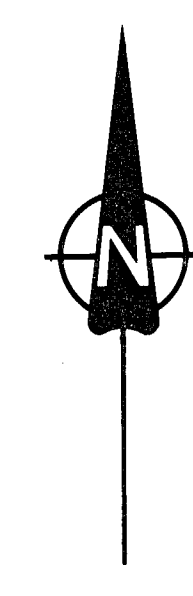
I am a member of the Canadian Institute of Mining and Metallurgy and the Geological Association of Canada.

I hold no interest in the properties or securities of SMD Mining Co. Ltd., nor do I expect to receive any interest directly or indirectly.

This report is based on work completed between September 13, 1981 and November 6, 1981, and upon the reports of the British Columbia Ministry of Mines.



Paul Ruck  
November 26, 1981



- LEGEND**
- 5 BETHSAIDA PHASE: Quartz monzonite to Granodiorite  
Stones Variety: Transitional between Bethlehem and Bethsaida phases
  - 5a
  - 4 BETHLEHEM PHASE: Granodiorite  
Transitional between Bethsaida and Highland Valley phases
  - 4a
  - 3d HIGHLAND VALLEY PHASE:  
Chatway Valley: Granodiorite  
Gulcher Variety: Granodiorite
  - 3b
  - 3bf Fine-grained Granodiorite, probably Gulcher Variety
  - 3a Transitional between Border and Highland Valley phases
  - 2 BORDER PHASE: Quartz diorite to Granodiorite
  - AIR PHOTO LINEAMENT
  - FAULT
  - GEOLOGIC BOUNDARY - DEFINED, ASSUMED
  - OUTCROP
  - DIKE SWARM AREA
  - GROUND MAGNETIC LOW
  - SK 81-1(15.7)100.6 1981 S.M.D. PERCUSSION DRILLING (coverburden depth), total depth
  - 80-1(1.0)33.5 PREVIOUS PERCUSSION DRILLING (coverburden depth), total depth
  - ◇ DIAMOND DRILL HOLE
  - ROTARY DRILL HOLE
  - TRENCH
  - 1981 S.M.D. BUILT ROAD
  - EXISTING ROAD

MINERAL DEVELOPMENT BRANCH  
 REGISTRATION NO. 9792

Scale 1:12,000

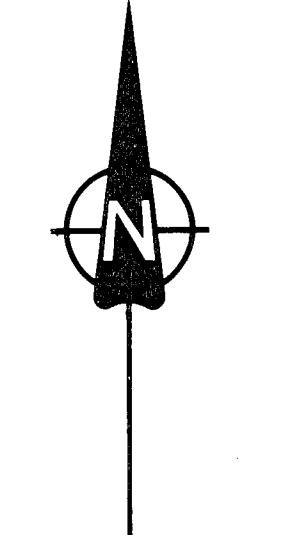
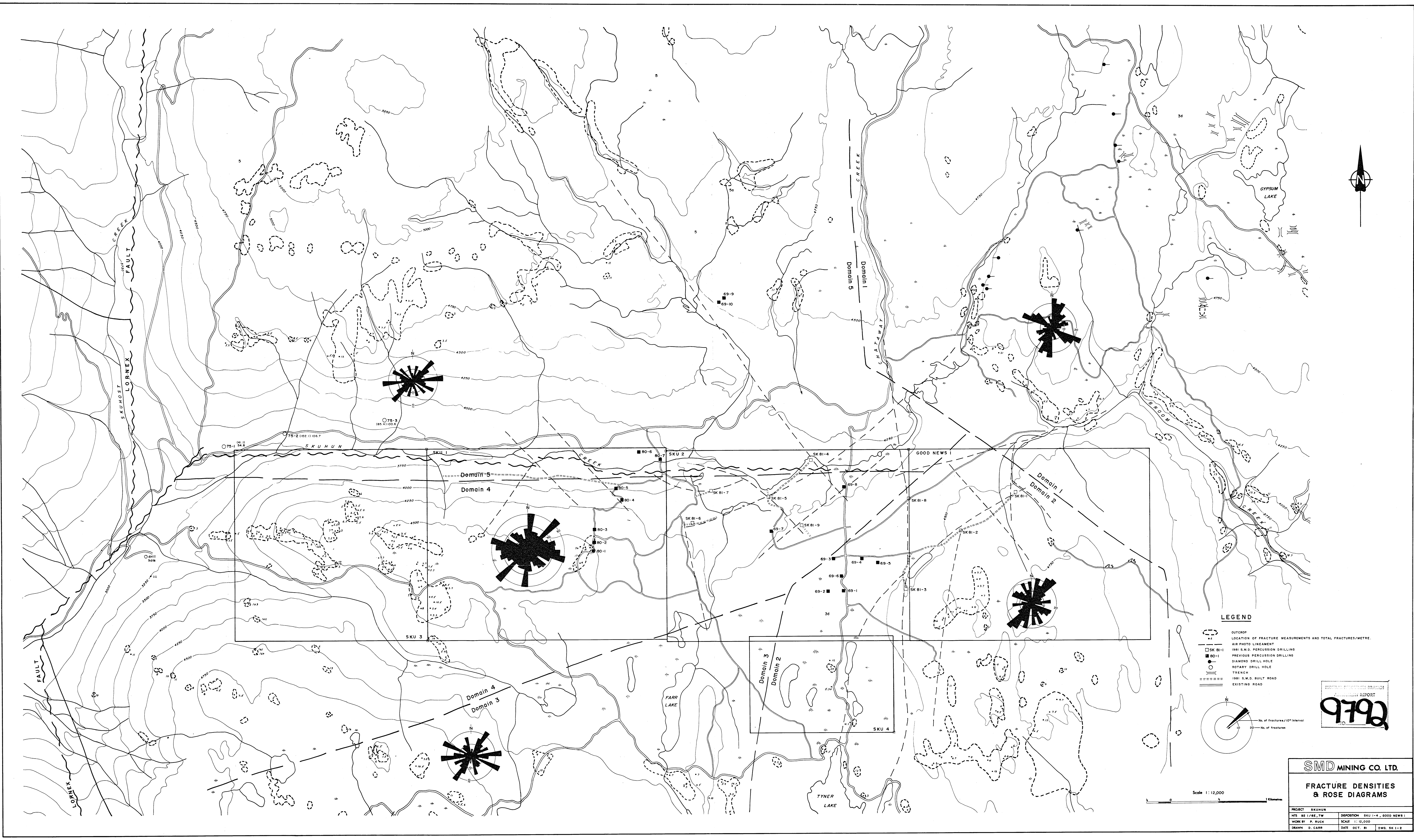
**SMD MINING CO. LTD.**

**GEOLOGY AND DRILL HOLE LOCATIONS MAP**

PROJECT	SKUHUN
N/S	92 / 1/8E, TW
DISPOSITION	SKU 1-4, GOOD NEWS 1
WORK BY	P. RUCK
SCALE	1:12,000
DRAWN	D. CARR
DATE	OCT. 81
DWG.	SK 1-1

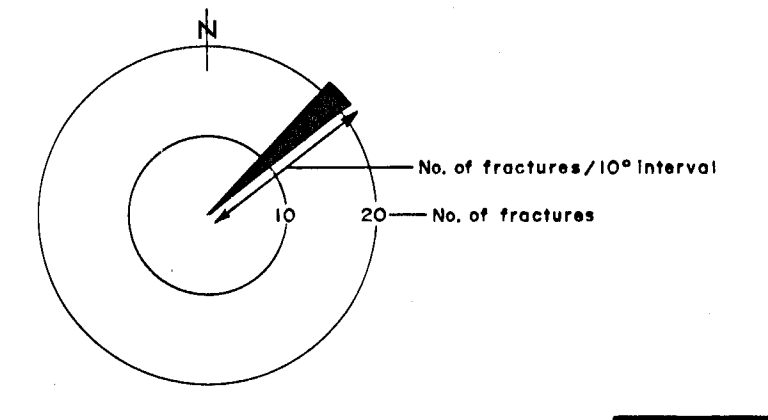
Note: Geology after W.J. McMillan  
 1975 preliminary map No. 30  
 B.C. Ministry of Mines and Petroleum Resources  
 Air photo interpretation: Paul Ruck  
 1981 S.M.D. BUILT ROAD  
 1981 S.M.D. PERCUSSION DRILLING





**LEGEND**

- OUTCROP
- LOCATION OF FRACTURE MEASUREMENTS AND TOTAL FRACTURES/METRE.
- AIR PHOTO LINEAMENT
- 1981 S.M.D. PERCUSSION DRILLING
- PREVIOUS PERCUSSION DRILLING
- DIAMOND DRILL HOLE
- ROTARY DRILL HOLE
- TRENCH
- 1981 S.M.D. BUILT ROAD
- EXISTING ROAD



INTERNATIONAL ENGINEERING DESIGN  
 CONSULTING REPORT  
**9792**

Scale 1:12,000

<b>SMD MINING CO. LTD.</b>	
<b>FRACTURE DIAGNOSIS &amp; ROSE DIAGRAMS</b>	
PROJECT SKUHUN	DISPOSITION SKU 1-4, GOOD NEWS 1
INTS 92 1/88, 7W	SCALE 1:12,000
WORK BY P. RUCK	DATE OCT. 81
DRAWN D. CARR	DWG. SK 1-2