

84-#762 - 13064

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

13,064

4/85

**GEOLOGICAL AND GEOCHEMICAL REPORT**

Jock 1-5 Mineral Claims

Latitude 57°15' North

Longitude 126°52' West

N.T.S. 94E/2W and /7W

Omineca Mining Division

British Columbia

for

GOLDEN RULE RESOURCES LTD.

Calgary, Alberta

by

Gordon L. Wilson, B.Sc.

TAIGA CONSULTANTS LTD.

#100, 1300 - 8th Street S.W.

Calgary, Alberta T2R 1B2

February 15, 1984

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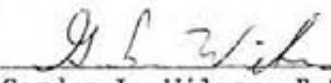
AUTHOR'S QUALIFICATIONS

I, Gordon L. Wilson, of 60 Ranchridge Road N.W. in the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Project Geologist with the firm of Taiga Consultants Ltd. whose offices are located at Suite 100, 1300 - 8th St. S.W., Calgary, Alberta.
2. I am a graduate of the University of Calgary, B.Sc. Geology (1977).
3. I have worked in the field of mineral exploration since 1973.
4. I have personally worked on the Jock claims on September 7, 1983.
5. I have not received nor do I expect to receive any interest, directly or indirectly, in the properties described herein nor in the securities of Golden Rule Resources Ltd., in respect of services rendered in the preparation of this report.

DATED at Calgary, Alberta, this 29th day of March, A.D. 1984.

Respectfully submitted,

  
\_\_\_\_\_  
Gordon L. Wilson, B.Sc.

CERTIFICATE

I. Ronald Kort Netolitzky, of 74 Wildwood Drive S.W. in the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a consulting geologist with the firm of Taiga Consultants Ltd., whose offices are located at Suite 100, 1300 - 8th Street S.W., Calgary, Alberta.
2. I am a graduate of the University of Alberta, B.Sc. Geology (1964), and of the University of Calgary, M.Sc. Geology (1967).
3. I have practised my profession continuously since 1967.
4. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
5. I have personally directed the exploration work carried out on the Jock claims and described herein, during September 1983.
6. Other than owning shares of and being a director and officer in Golden Rule Resources Ltd., I did not receive and do not expect to receive any interest, directly or indirectly, in the property described herein or in the securities of Golden Rule Resources Ltd. in respect of services rendered in the preparation of this report.

DATED at Calgary, Alberta, this 29th day of March, A.D. 1984

Respectfully submitted,

\_\_\_\_\_  
Ronald Kort Netolitzky, M.Sc., P.Geol.

SUMMARY

"Second pass" reconnaissance prospecting and geochemical (rock and silt) sampling carried out in September 1983 have identified a number of gold and silver anomalies in rocks and silts.

Heavy snow conditions prevented detailed mapping or anomaly source determinations; however, prospecting programs were carried out in the vicinity of anomalies locating a number of large quartz boulders as well as silicified, potassic altered outcrops. Several of the locations examined contained weak chalcopyrite, malachite, and galena mineralization along silicified fractures. Previous mapping carried out by Fox (1982) revealed the presence of a series of easterly trending fracture zones which apparently have acted as the primary controlling feature for the emplacement of the noted quartz-feldspar porphyry dykes and the noted potassic alteration pattern. Recently identified gold and silver anomalies on the Jock 2 and 5 claims are associated with these structural features.

## INTRODUCTION

### Location and Access

The Jock 1 to 5 mineral claims form a contiguous block of claims in N.T.S. map-areas 94E/2W and 94E/7W, approximately 475 km northwest of Prince George. The claims are situated over a number of northerly flowing tributaries of Jock Creek, approximately 12 km north of the confluence of the Finlay and Firesteel Rivers (Figure 1). The approximate geographic coordinates of the claims are 57°15' North latitude and 126°52' West longitude (Figure 2). The claims are normally accessible only by helicopter.

### Property and Ownership

The claims are located in the Omineca Mining Division and are entirely owned by Golden Rule Resources Ltd. of Calgary, Alberta. The claims are more specifically described as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record Number</u>	<u>Date of Record</u>
Jock 1	4	2699	} April 8, 1980
Jock 2	18	2700	
Jock 3	15	2701	
Jock 4	20	2702	
Jock 5	4	2703	
	<u>61</u>		

### Physiography and Glaciation

The claims lie within the Cassiar Mountains physiographic subdivision of the Interior Plateau. The region is entirely glaciated and is characterized by wide U-shaped drift-filled major valleys, and deeply cut V-shaped upland valleys. Mountain peaks in the area average 1,980 metres ASL in elevation, and rise fairly abruptly from the major valleys.

The claims are situated over three prominent northeasterly-trending ridges that separate northeasterly-flowing tributaries of Jock Creek. Elevations at the property range from 1,300 to 1,800 metres ASL. Topo-

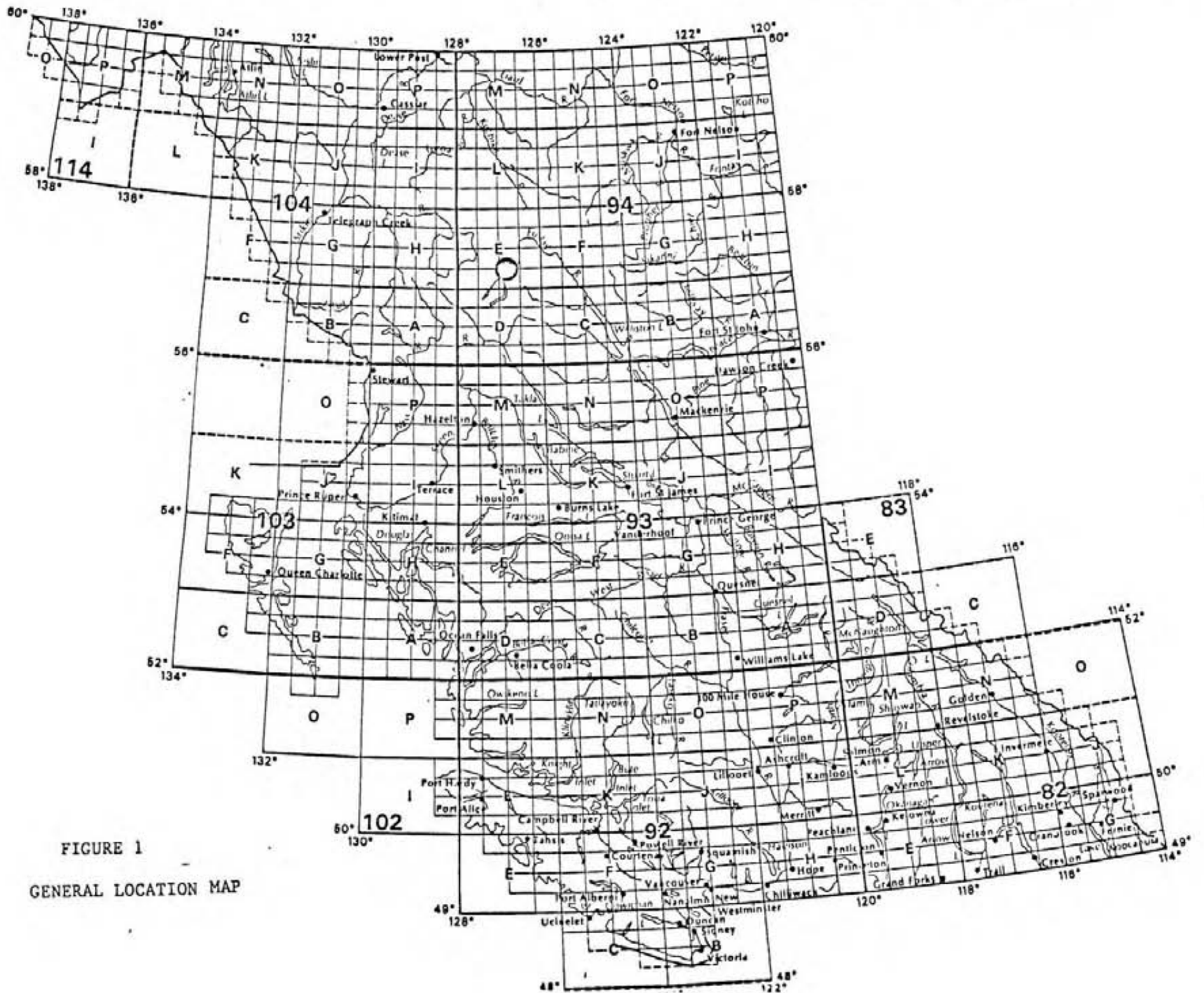
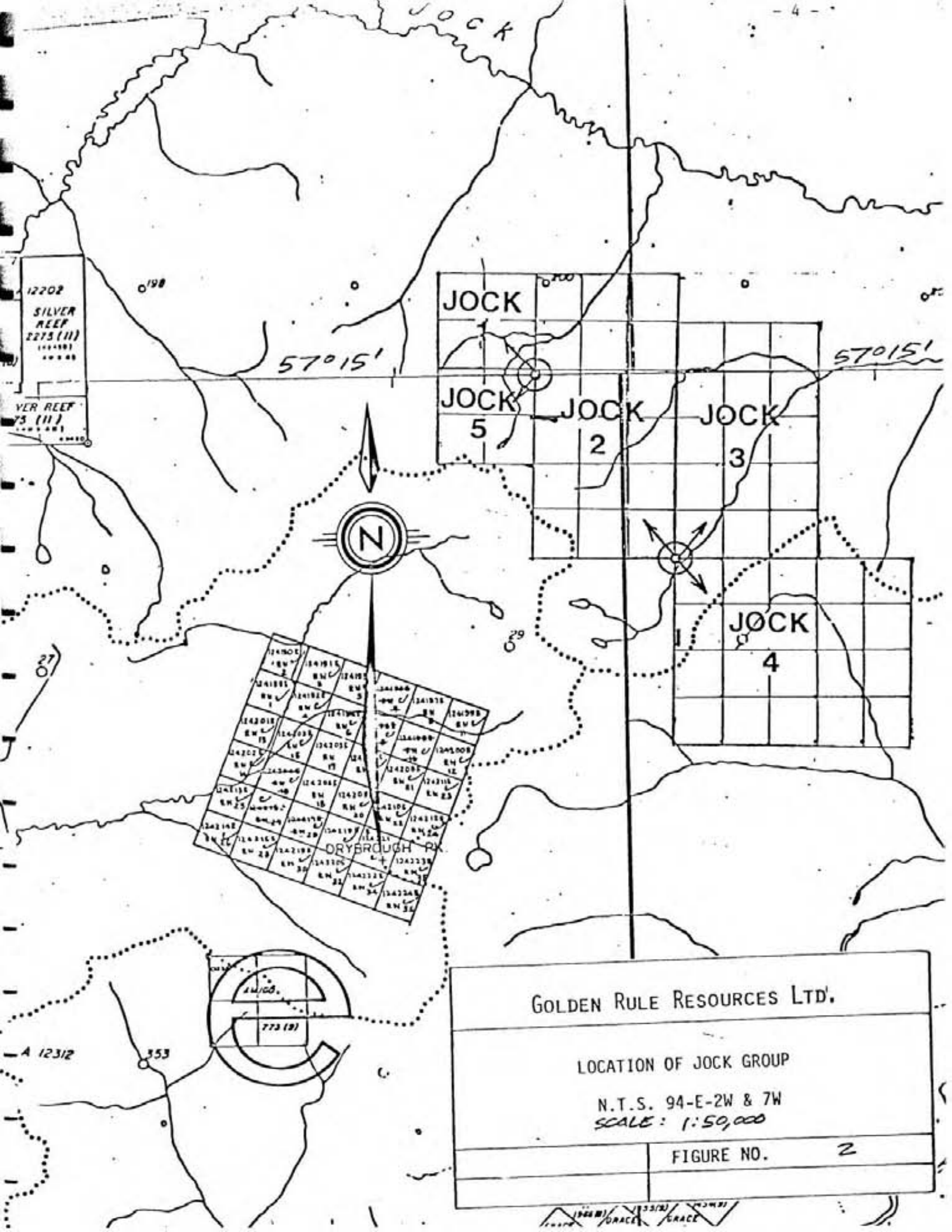


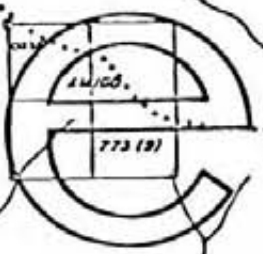
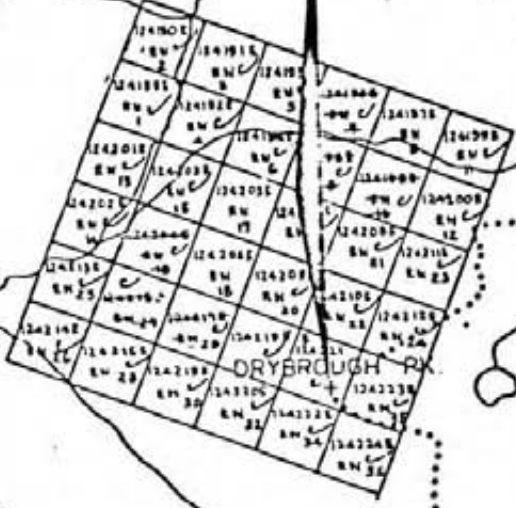
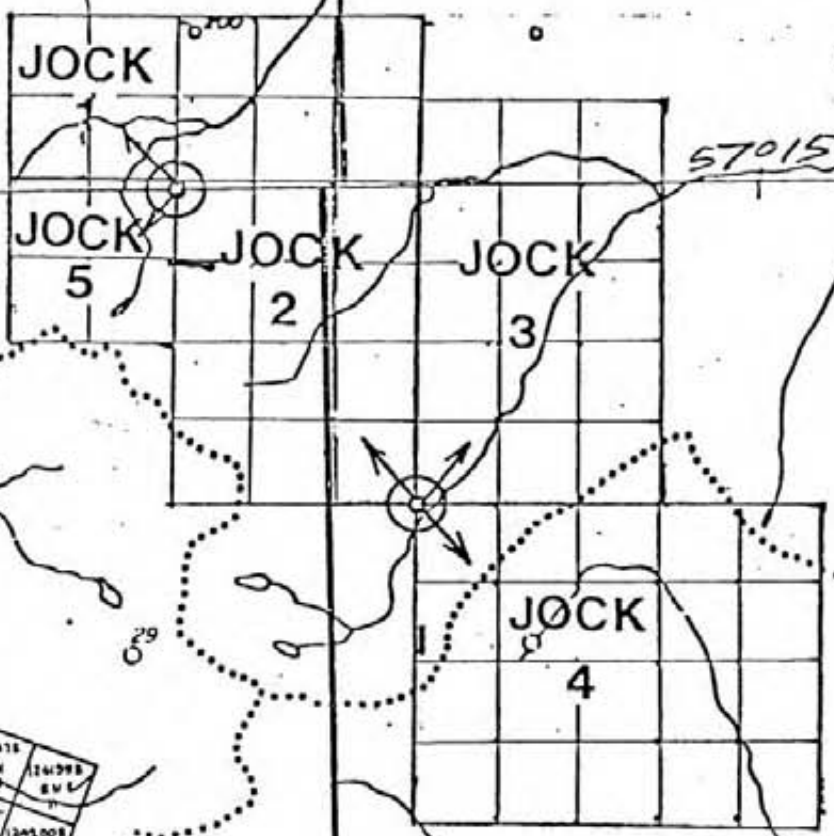
FIGURE 1  
GENERAL LOCATION MAP



12202  
SILVER REEF  
2275 (11)  
VER REEF  
75 (11)

57°15'

57°15'



GOLDEN RULE RESOURCES LTD.,

LOCATION OF JOCK GROUP

N.T.S. 94-E-2W & 7W

SCALE: 1:50,000

FIGURE NO. 2



graphic relief is extreme, and the area is characterized by cirques, razor-crested ridges, extensive talus, and alpine moraines. Streams commence flowing from tarns at a number of locations in the area of the claims.

#### 1983 Exploration Program

Work carried out in 1983 consisted of helicopter-supported reconnaissance prospecting, geochemical sampling, and detailed rock and silt sampling, in an effort to further evaluate the existing anomalies.

In September 1983, a four-person crew was mobilized into the property. During the program, 61 silt samples and 34 rock samples were collected from the claims area, and submitted for geochemical analyses. Prospecting and geological mapping were severely hampered due to heavy snow conditions; however, areas previously not examined were adequately prospected with encouraging results.

## REGIONAL GEOLOGY

The claims are underlain by intermediate to acidic volcanic rocks of the Lower Jurassic Toodoggone Formation. The Toodoggone volcanics form a belt 5 - 20 km wide and 100+ km long which is currently the focus of intense precious metals exploration. The belt hosts the Baker deposit, currently being mined by DuPont of Canada Ltd., and another potentially economic deposit known as the Amethyst-Gold Breccia Zone, currently being explored by Serem Ltd.

Four principal subdivisions of the Toodoggone Formation are now recognized. The following descriptions of these subdivisions are excerpted from B.C. Ministry of Mines Paper 1981-1 (p.125) by T. G. Schroeter.

Lower Volcanic Division. This is dominantly a pyroclastic assemblage including purple agglomerate and grey-to-purple dacitic tuffs.

Middle Volcanic Division. This is an acidic assemblage including rhyolites, dacites, 'orange' crystal to lithic tuffs, and quartz feldspar porphyries. It includes welded tuff. The 'orange' colour of the tuffs resulted from oxidization of the fine-grained matrix while the rock was still hot. A coeval period of explosive volcanism included the formation of 'laharic' units and intrusion of syenomonzonite bodies and dykes. This event was accompanied by explosive brecciation along zones of weakness, predominantly large-scale faults and attendant splays, followed by silicification and deposition of precious and base metals to varying degrees in the breccias. Rounded fragments of Omineca intrusive rocks are rare components in Toodoggone tuffs.

Upper Volcanic - Intrusive Division. This division consists of grey-to-green-to-maroon crystal tuffs and quartz-eye feldspar porphyries.

Upper Volcanic - Sedimentary Division. This division consists of lacustrine sedimentary rocks (sometimes varved), stream bed deposits, and possible local fanglomerate deposits and interbedded tuff beds.

PROPERTY GEOLOGY

Geological mapping on the Jock claims was hampered by heavy snow conditions, thus was effected on a need-to-know basis and restricted to major clear bedrock exposures. The results are presented at a scale of 1:10,000 on Map 1.

Partial mapping of the property during the 1981 program indicated that the claims are underlain primarily by members of Divisions 1 and 2 of the Toodoggone Formation. Fox (1982) reports the presence of porphyritic green and purple feldspar and hornblende-feldspar andesitic flows and tuffs on the property. In the central area of the Jock 2 claims and in the northwestern part of the Jock 3 claim, large blocks of Upper Triassic Takla Group volcanisedimentary rocks are faulted against the Toodoggone formational rocks. Several quartz-feldspar porphyry dykes were noted cutting the Toodoggone rocks. These are enclosed by envelopes of intense fracturing with moderate epidotization and silicification.

Fox (1982) reported similar fracture systems transecting the property which trend easterly and are marked by wide epidote and silicified alteration zones. Pyrite is widely disseminated throughout the most intensely fractured and silicified sections.

In the field, the silicification is noted in detail to be more intermittent than first appears. Silicified rock clearly grades over short distances into recognizable andesitic to dacitic flows. In addition, the siliceous outcrops appear to be interspersed with more recessive outcrops of tuffaceous material showing uniform chlorite, epidote, pyrite alteration levels. If the silicate rocks represented a porphyry type quartz-sericite pervasive alteration zone, then the intervening tuffaceous outcrops should also show higher than propylitic alteration effects, which was not noted. Thus, the silicification does not appear to be of the porphyry type, but enhances the potential for epithermal precious metal deposition.

## GEOCHEMISTRY

### Sampling and Analytical Procedures

A total of 39 soil samples and 33 rock samples were collected along reconnaissance and detailed traverses. Detailed grid-controlled sampling was carried out around existing anomalies. In addition, 50 silt samples were collected during reconnaissance traverses. Soil and silt samples were air-dried and submitted to TerraMin Research Labs Ltd. in Calgary, Alberta, for analyses. All samples were analyzed for gold and silver. Au-in-rock analyses were carried out by a combined fire assay and atomic absorption technique. Au- and Ag-in-silts and soils analyses were performed by standard (wet) atomic absorption procedures.

### Results

Statistical analysis of geochemical data sets was not done due to the small sample population.

### Silts

Marginally anomalous and anomalous Ag-in-silt values occur at sample sites DD-17, DD-30, and DD-31 (7600, 1120, and 4800 ppb Ag respectively).

Weakly anomalous Au-in-silt values occur at sample sites DD-6 and DD-33 (212 and 104 ppb Au respectively).

None of the Ag-in-silt values (taken by themselves) warrants follow-up work. Au-in-silt values were also weak, and by themselves or combined with realized Ag-in-silt values, do not warrant further follow-up investigation.

The above weakly anomalous silts are described below:

1. DD-17 was collected from a frozen streambed in an area underlain primarily by a purple hornblende-feldspar porphyry, generally without structure, and lacking any type of mineralization.

2. DD-30 was collected from a frozen streambed in the vicinity of a northwesterly trending quartz-pyrite fracture zone to the south and a northeasterly trending quartz-pyrite fracture zone to the north. The anomalous Au-in-silt value (DD-33) 100 metres to the north indicates these quartz-bearing structures are possibly enriched in gold.

### Rocks

The results of rock sampling carried out during the 1983 program were encouraging, with several marginally anomalous gold and silver values obtained from a number of strongly altered fracture zones. Detailed rock sample descriptions are provided in Appendix III.

### Soils

Targets for soil sampling were pre-existing Au- and Ag-in-soil and/or talus fines locations:

RDS-10	1100 ppb Ag
RDS-12	20 ppb Au
RDS-18	740 ppb Au
RDS-22	1400 ppb Ag
TN-32	1400 ppb Ag
TN-40	20 ppb Au
TN-44	20 ppb Au
TN-48	1200 ppb Ag

Detailed grids were placed over each location except RDS-18 which could not be located due to heavy snow conditions. Here, a grid was established just east of the estimated location, over an exposure of repressive fractured and silicified fractured pyritic zone, striking  $110^{\circ}$  and dipping  $40^{\circ}N$ .

The results of the sampling of TN-32, TN-40, TN-44, and TN-48 failed to reproduce the original particular Au or Ag values. However, upgrading was experienced from perimeter samples returning higher values in Au and/or Ag than originally realized. On TN-32, two samples returned Au-in-soil values of 24 ppb compared to the original 10 ppb Au. On TN-40, three samples

returned Ag-in-soil values of 680, 390, and 540 ppb Ag compared to the original 300 ppb Ag; one sample returned 12 ppb Au compared to the original of 10 ppb Au. On TN-44, three samples returned Au-in-soil values of 24, 28, and 24 ppb Au compared to the original anomalous value of 20 ppb Au; Ag-in-soil values were slightly higher in three locations (1910 ppb Ag compared to 800 ppb Ag) from the original location. On TN-48, all Au-in-soil values were higher than the original 5 ppb Au location, with values to 18 ppb Au; Ag-in-soil values returned lower values.

Detailed geochemical evaluations of RDS-10 and RDS-12 resulted in upgrading the original anomalies, with all samples around RDS-10 returning values higher than the original 5 ppb Au. One sample returned 388 ppb Au-in-soil and was collected approximately 20 metres southeast of the original. Ag-in-soil values around RDS-10 were slightly upgraded, with two samples returning values of 1550 and 1670 ppb Ag. One sample returned 22 ppb Au-in-soil compared to the original 20 ppb Au at location RDS-12. Location RDS-18, anomalous in Au (740 ppb) was not found due to heavy snow; however, a grid was placed over an area of interest just east of the expected position. Here, a silicified fracture zone trending  $110^{\circ}$  was partly exposed carrying disseminated pyrite to 10%. Silicification appears to be fracture-controlled throughout the exposed section. One narrow sheared quartz vein was noted within a zone of intense fracturing and cross-fracturing. Au-in-soil values reached 56 ppb, with seven samples returning values over 20 ppb Au-in-soil. Ag-in-soil samples returned values lower than previously realized in the area.

CONCLUSIONS AND RECOMMENDATIONS

"Second pass" reconnaissance exploration and follow-up detailed work on the Jock claims has identified several weakly anomalous Ag- and/or Au-in-soils and stream silts locations that warrant only limited follow-up work. Further geological mapping of the claims has identified several extensively altered fracture zones which appear to be related to the emplacement of the easterly-trending quartz-feldspar porphyry dykes seen to be cutting the Toodogone volcanics on the Jock 1 and 2 claims. Rock sampling carried out on a reconnaissance and detailed level failed to identify significant Au or Ag values.

The major structures examined during this program involved the northeasterly and the northwesterly trending fracture-fissure zones noted on the Jock 1, 2, 3, and part of 5 claims. These were zones of weak fracturing and shearing, showing widespread moderate silicification and carried very weak copper mineralization along fracture surfaces only. Rock samples collected from these features returned only low gold and silver values.

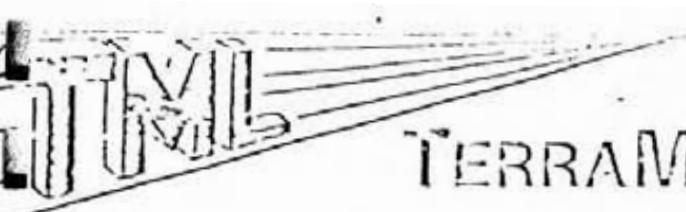
The type of alteration noted to be associated with the northeasterly and the northwesterly trending zones is generally the quartz-albite-epidote-pyrite suites. In contrast to the stronger easterly trending fractures zones, potassic-feldspar alteration patterns were not noted even in the presence of the feldspar porphyry dykes.

Further work on the property should consist of detailed structural and alteration analyses, with coincident rock and soil sampling of both primary and secondary fracture zones.

A P P E N D I X I

Analytical Techniques





# TERRAMIN RESEARCH LABS LTD.

14-2235 - 30th Avenue N.E. Calgary, Alberta T2E 7C7  
(403) 276-8668

Rex Silver Mines Ltd.

## ANALYTICAL METHOD FOR GOLD AND SILVER

Approximately 1 assay ton of prepared sample is fused with a litharge/flux charge to obtain a lead button. The lead button is cupelled to obtain a prill. The prill is dissolved in nitric/hydrochloric acids (aqua regia), and the resulting solution is analysed by atomic absorption spectroscopy.



# TERRAMIN RESEARCH LABS LTD.

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Rex Silver Mines Ltd.

## SAMPLE PREPARATION

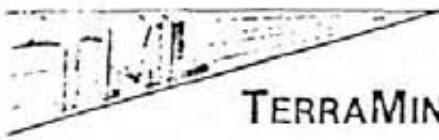
Soil and sediment samples are dried and sieved to -80 mesh (approx. 200 micron).

### Rock Samples:

The entire sample is crushed to approx. 1/8" maximum, and split divided to obtain a representative portion which is pulverized to -200 mesh (approx 90 micron).

A P P E N D I X   I I

Geochemical Analyses



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job # 83-332

Date

Client Project GR-BC-7

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Sample No.	Au ppb	Ag ppb
DD-JA L 0+00 S 0+12.5 W	42	760
0+00	24	600
0+12.5	20	400
L 0+75 S 0+12.5 W	-12	310
0+00	14	450
L 1+00 S 0+12.5 E	28	880
0+25	40	540
0+37.5	56	630
RGB L 9+25 E 0+12.5 N	20	410
0+00	6	800
0+12.5 S	66	500
L 10+00 E 0+12.5 N	64	1550
0+00	12	940
0+12.5 S	14	610
L 10+25 E 0+12.5 N	84	820
0+00	388	1670
0+12.5 S	10	700
GG L 23+50 N 6+00 E	14	1680
L 22+00 N 14+75 E	6	6100
L 18+50 N 7+00 E	-4	1440
7+25	22	780
7+50	-4	560
7+75	-2	800
8+25	8	780
8+50	-4	360



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## ANALYTICAL REPORT

Job # 83-332

Date

Client Project GR-BC-7

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Sample No.	Au ppb	Ag ppb
DD-J-01	-20	-100
02	8	40
03	10	210
04	-12	440
05	14	70
06	212	740
07	6	360
08	4	200
30	44	1120
31	36	4800
32	20	210
33	104	120
34	36	260
35	24	230
36	40	180
37	12	750
38	16	440
39	28	340
40	28	300



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## ANALYTICAL REPORT

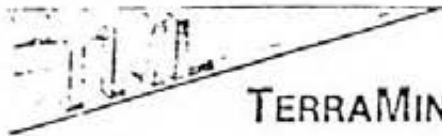
Job # 83-332

Date

Client Project GR-BC-7

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Sample No.	Au	Ag
Silt	ppb	ppb
Jock S.H. 01	-30	330
02	8	520
03	16	280
04	30	350
05	16	430
06	50	350
07	44	420
08	8	320
09	24	400
10	36	480
11	16	350
12	16	350
13	40	240
14	90	350
15	32	170
16	16	320
17	8	120
18	32	360
19	16	280
20	64	520



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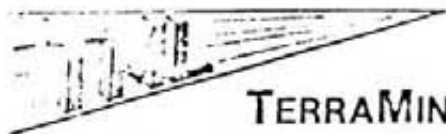
Job # 83-332

Date

Client Project GR-BC-7

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Sample No. <u>Soil</u>	Au ppb	Ag ppb
GW-R-S-01	10	200
02	I.S.	
03	10	350
04	8	190
05	16	550
06	8	360
07	30	1400
08	56	1750
09	72	780
10	58	13300
11	280	450
12	16	680
13	10	200
14 (1) ?	24	240
14 (2) ?	-25	380
15	12	360
16	-16	300
17	76	200
18	26	200
20	26	140
21	1820	610
22	76	570
23	184	440
24	22	560
RGB-J 4+00 E 0+12.5 S	8	230



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## ANALYTICAL REPORT

Job # 83-332

Date

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Sample No.	Au ppb	Ag ppb
<u>Silt</u>		
DD-J-09	4	220
10	10	280
11	12	400
12	8	520
13	8	320
14	8	390
15	10	200
16	4	640
17	14	7600
18	8	720
19	4	280



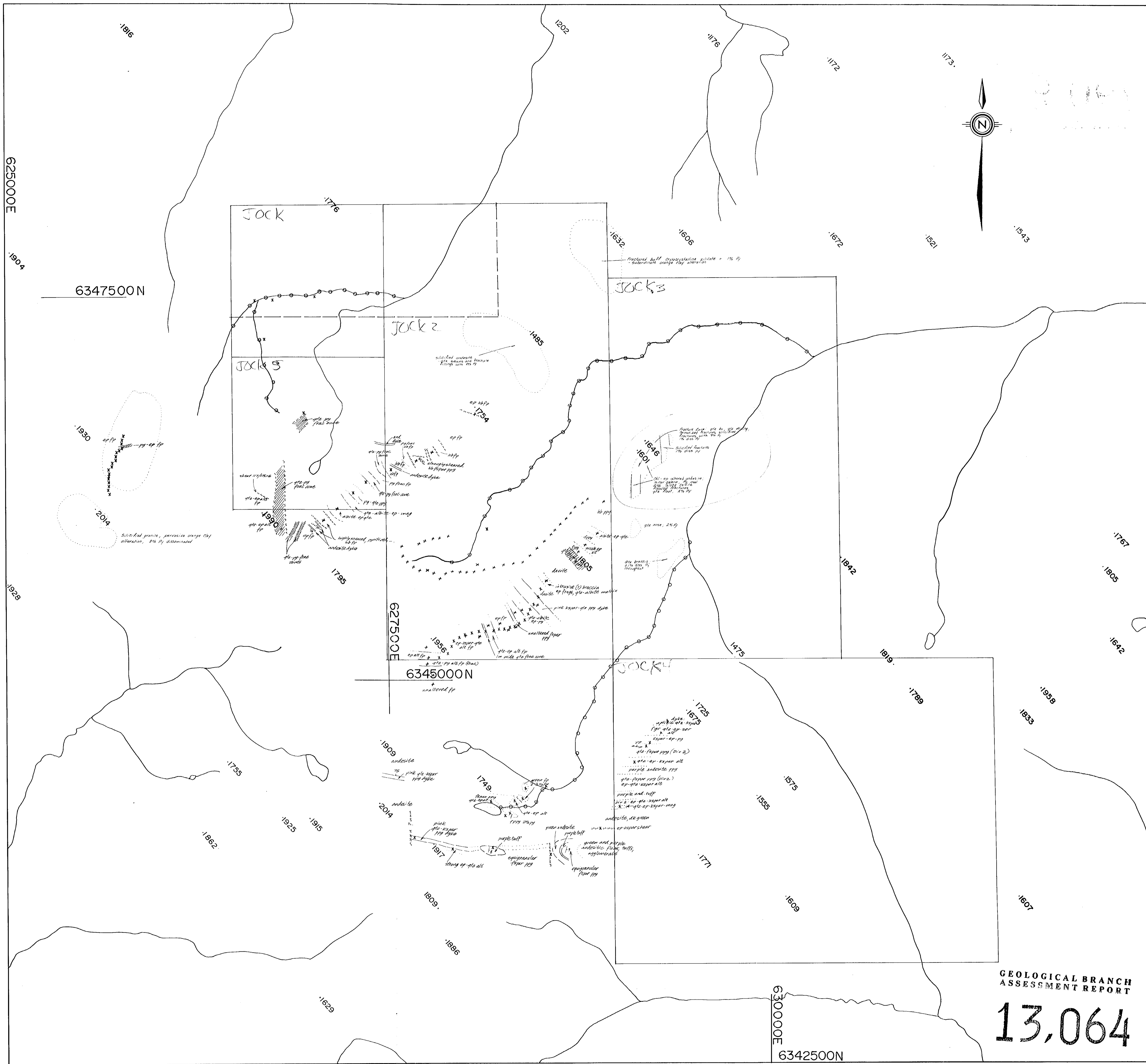
Jock

APPENDIX III

SCHEDULE A - PRO RATA COSTS

Exclusive of Personnel charges, Camp & Accommodation, Helicopter Support, and Post-Field Expenses (which are direct costs), all other costs are applied on a pro rata basis to the various claim blocks using a per-man-day formula (the entire project required 297 man days).

	<u>Project Gross</u>	<u>Per Man Day</u>
TRAVEL EXPENSES	4,073.06	13.71
FUEL	581.15	1.96
EXPEDITING	1,150.00	3.87
COURIER AND FREIGHT	1,754.90	5.91
DISPOSABLE SUPPLIES	1,557.91	5.25
MISCELLANEOUS: telephone, photocopying, maps, contract drafting (land update)	887.00	2.98
HANDLING CHARGES on third-party expenses	1,344.56	4.52
TRANSPORTATION 4x4 truck and 3/4-ton van	4,260.00	14.34
EQUIPMENT RENTALS two SBX-11 transceiver radios one Geonics VLF-EM-16 one proton magnetometer / base station	3,440.00	11.58
FIXED-WING SUPPORT	6,892.48	23.20
	<u>\$ 25,941.06</u>	<u>\$ 87.33</u>



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

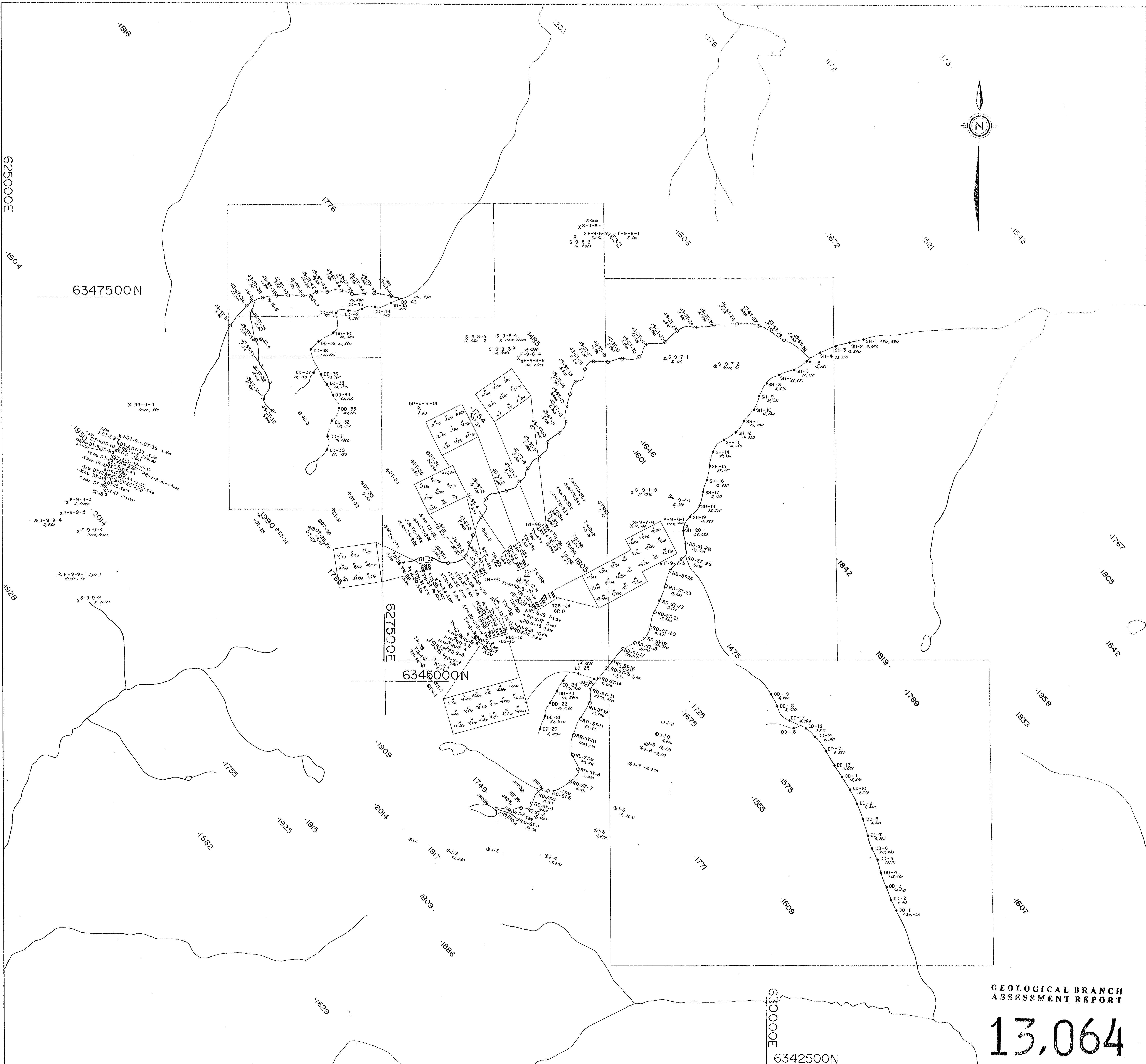
13,064

ABBREVIATIONS  
 q, qtz quartz  
 f, fsp feldspar  
 kspn potassium feldspar  
 p, psp plagioclase  
 hb hornblende  
 ser sericite  
 py pyrite  
 ep epidote, epidotized

PERMIT TO PRACTICE  
 TAIGA CONSULTANTS LTD.  
 Signature: *Richard H. [unclear]*  
 Date: Feb 1984  
 PERMIT  
 The Assessor  
 Geological Branch

GOLDEN RULE RESOURCES LTD.		
CHAPPELLE PROJECT		
MAP I	GEOLOGY	JOCK CLAIMS
PROJECT	GR-BC-7	NTS N4E-2W and 7W
SCALE 1:10,000		
TAIGA CONSULTANTS LTD.		

Revised October, 1983



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**13,064**

- Silt sample location: Au (ppb), Ag (ppb)
- × Talus lines Au (ppb), Ag (ppb) 1982 Program
- Rock sample location: Au (ppb), Ag (ppb)
- Silt sample location: Au (ppb), Ag (ppb) 1983 Program
- × Rock sample location: Au (ppb), Ag (ppb)

PERMIT TO PRACTICE  
TAIGA CONSULTANTS LTD.  
Signature: *[Signature]*  
Date: Feb 15, 1989  
PERMIT NUMBER: P 2000  
The Association of Professional Engineers,  
Geologists and Environmentalists of Alberta

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 2	3000' CLAIMS
PROJECT GR-BC-7	NTS N4E-2W and 7W
SCALE 1:10,000	
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