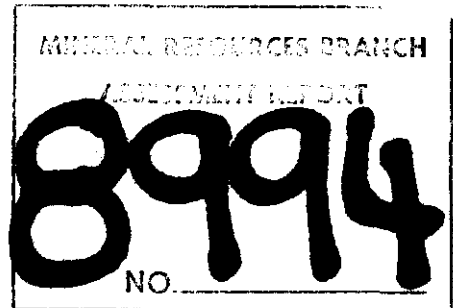


REPORT ON  
DIAMOND DRILLING

by  
G.R. Peatfield, P.Eng.

on the



RED 9 M.C.  
(part of the RED-CHRIS Property)

Situated north of Kluea Lake  
in the Liard Mining Division

57°43'N, 129°45'W

NTS 104H/12W

owned by  
TEXASGULF CANADA LTD.  
SILVER STANDARD MINES LTD  
NORCEN ENERGY RESOURCES LTD.

work by  
TEXASGULF INC.

March 1981

Vancouver, B.C.

## TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
Location, Access and Terrain	1
Property History and Definition	1
Summary of Work Completed	5
Diamond drilling	5
Work distribution	5
GEOLOGY	5
DIAMOND DRILLING	7
BIBLIOGRAPHY	
APPENDIX A: Summary Drill Logs	
APPENDIX B: Summary of Assays and Analyses	
APPENDIX C: Statements of Qualification	
APPENDIX D: Statement of Expenditures	

## LIST OF FIGURES

<u>Fig. No.</u>	<u>Title</u>	<u>Scale</u>	<u>Page</u>
1	Location Map	c. 1:9,100,000	2
2	Detailed Location Map	1:250,000	3
3	Claim Grouping Sketch	1:50,000	4
4	Drill Hole Location Map	1:4,800	6

## INTRODUCTION

### Location, Access and Terrain

The RED-CHRIS property is located immediately north of Kluea Lake, in northwestern British Columbia (see Figure 1). The most convenient supply and transportation centre is Terrace, some 365 km to the south.

Access to the claims is presently by helicopter from the Stewart Cassiar highway. There is regular scheduled air service (in summer) from Terrace to Iskut (or Eddontenajon), about 20 km to the northwest of the claims. Food, lodging and rudimentary services are available at various points along the highway along Eddontenajon Lake. Float equipped fixed-wing aircraft can land on Eddontenajon Lake or Kinaskan Lake, where the base-camp for this programme was located (see Figure 2). There is a rough tote-road from a point near the western end of Ealue Lake to the claims; this road was not used during the present programme, owing to the lack of a tractor to move the drill, and because the job was of very limited scope.

The claims are located on a plateau east of Todagin Mountain, sloping downward to valley level on the east. Maximum elevations are about 1700 m, and the property relief is about 700 m. The western half of the property is mostly at or above timber line, while the eastern portion lies below and is covered by scrub trees. Water is sufficiently abundant for drilling throughout the summer season.

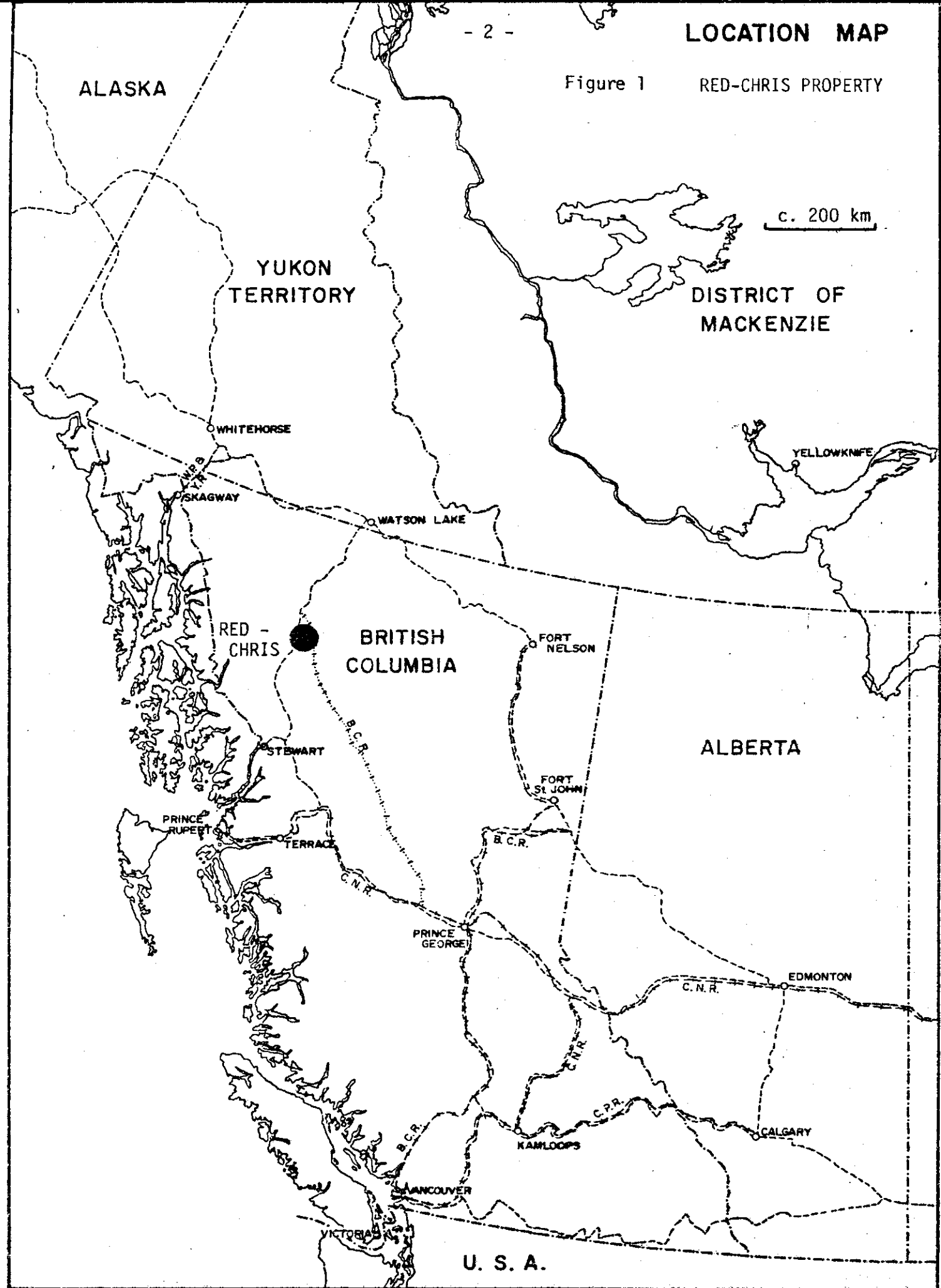
### Property History and Definition

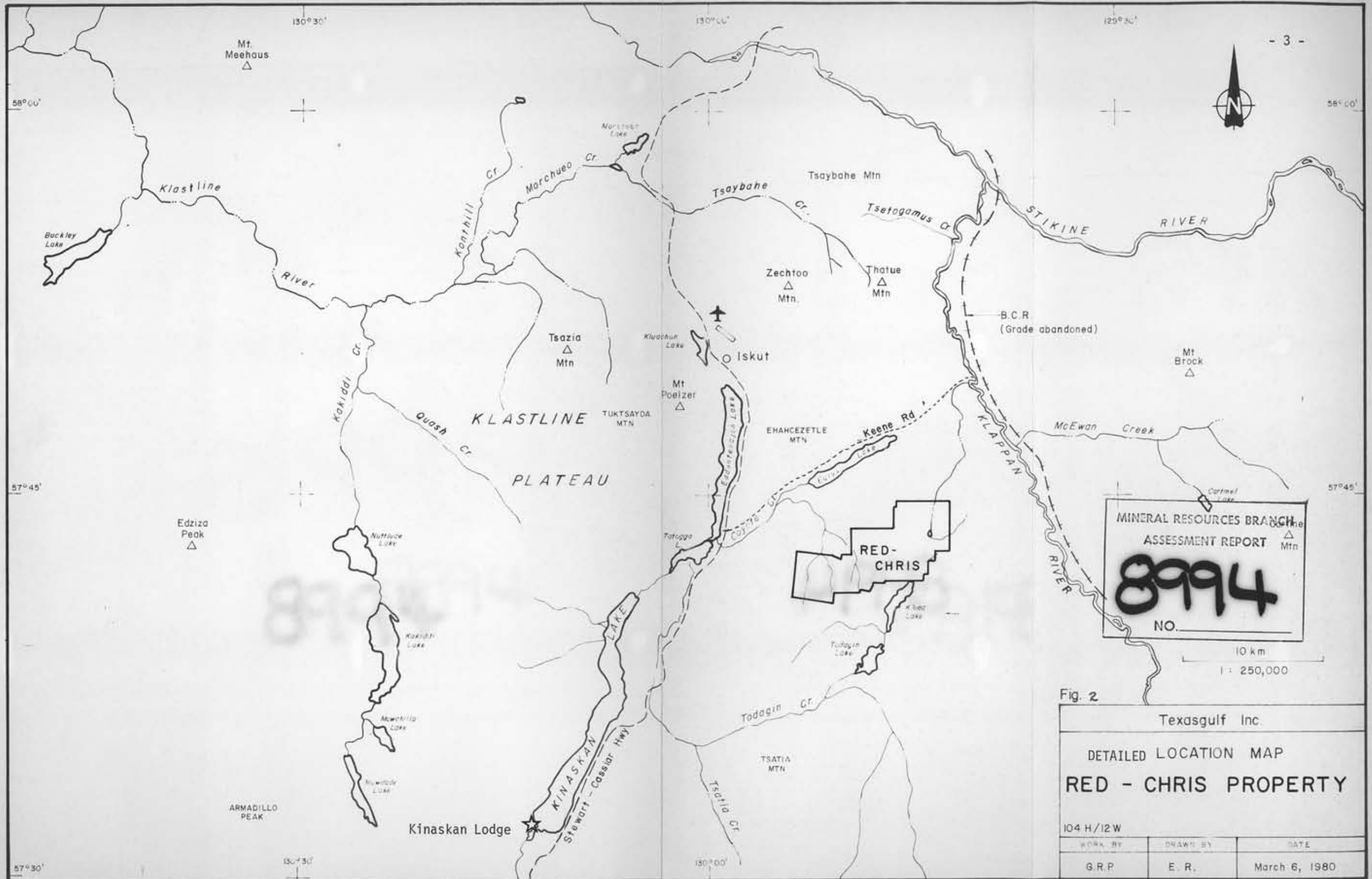
The present RED-CHRIS property comprises 120 old claims, 8 old fractional claims, and 19 MGS claims aggregating 113 units (see Figure 3). The ground was originally held as two properties, the RED by Silver Standard Mines Ltd., and the CHRIS by Great Plains Development Co. of Canada Ltd.

# LOCATION MAP

Figure 1 RED-CHRIS PROPERTY

c. 200 km

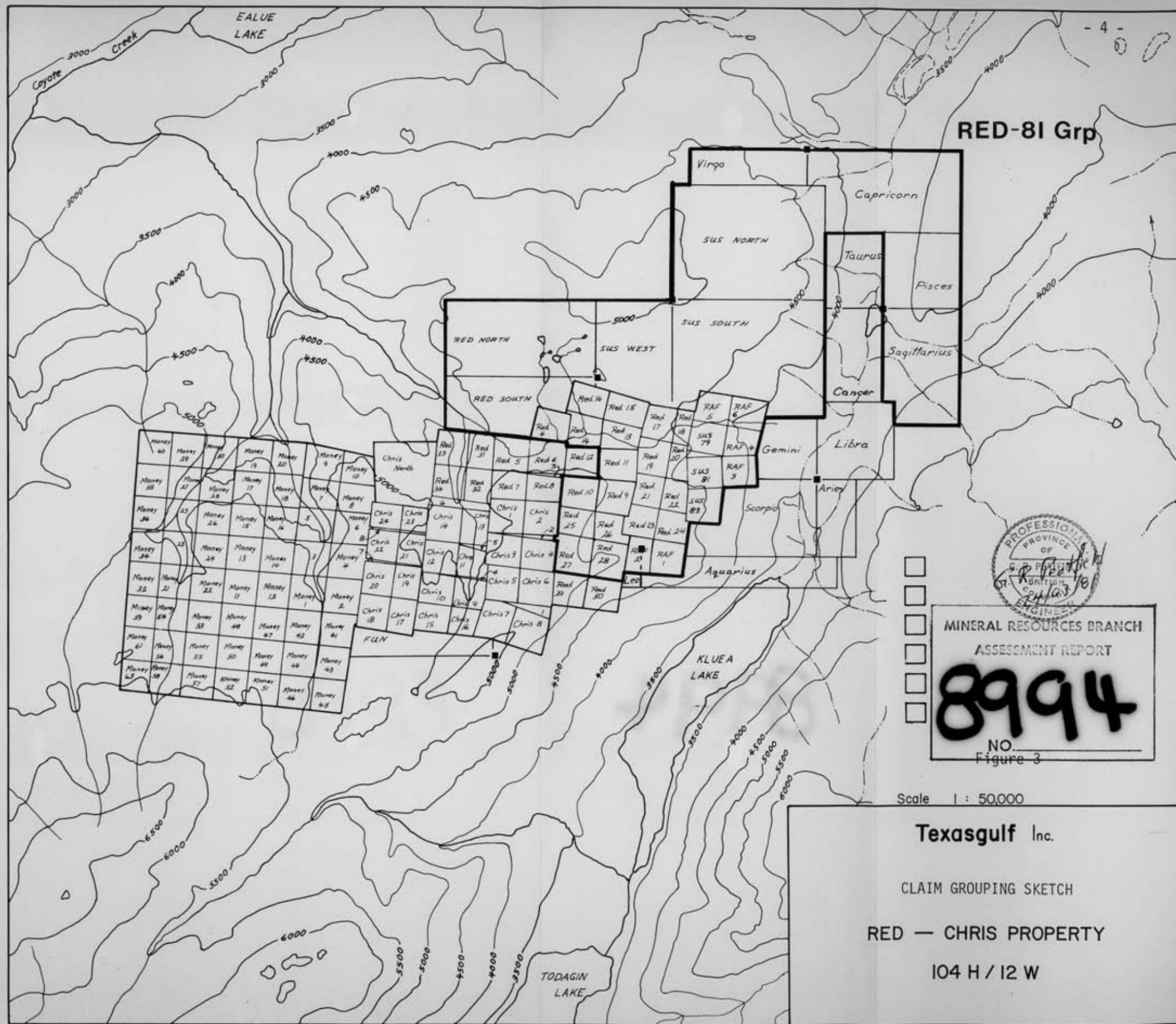




MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8994**  
 NO. \_\_\_\_\_

Fig. 2

Texasgulf Inc.		
DETAILED LOCATION MAP		
RED - CHRIS PROPERTY		
104 H/12 W		
WORK BY	DRAWN BY	DATE
G.R.P.	E. R.	March 6, 1980



RED-81 Grp



- 
- 
- 
- 
- 
- 

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8994**  
 NO. \_\_\_\_\_  
 Figure 3

Scale 1 : 50,000

**Texasgulf Inc.**  
 CLAIM GROUPING SKETCH  
 RED — CHRIS PROPERTY  
 104 H / 12 W

(now Norcen Energy Resources Ltd.). The properties were pooled in 1974, under the terms of an option agreement between the two above Companies and Ecstall Mining Ltd. (now Texasgulf Canada Ltd.). The claims are registered in the names of:

Texasgulf Canada Ltd.	60%
Silver Standard Mines Ltd.	20%
Norcen Energy Resources Ltd.	20%

During the period 1973 to 1980, Texasgulf Inc., on behalf of the owners, completed a total of 75 diamond drill holes (13,119 m) and 44 percussion drill holes (3,178 m), as well as extensive geological, geochemical and geophysical surveys. This work has been described in various reports submitted for assessment work credit.

A modest reserve, quoted as 41 million tonnes grading 0.56% Cu and about 0.3 ppm Au, has been outlined in two zones. Development of the property appears unlikely in the foreseeable future.

#### Summary of Work Completed

##### Diamond drilling

During the period Aug. 22 to Aug. 31, 1980, two BQ diamond drill holes, totalling 626.3 m, were completed on the property. Cores were analyzed geochemically for Cu or, in the better grade sections, assayed for Cu, Au and Ag.

##### Work distribution

The diamond drilling described in this report was restricted to the Red 9 mineral claim (see Figure 4).

#### GEOLOGY

The geology of the RED-CHRIS property has been described by Panteleyev (1975, 1977). Two zones of copper-gold stockwork mineralization

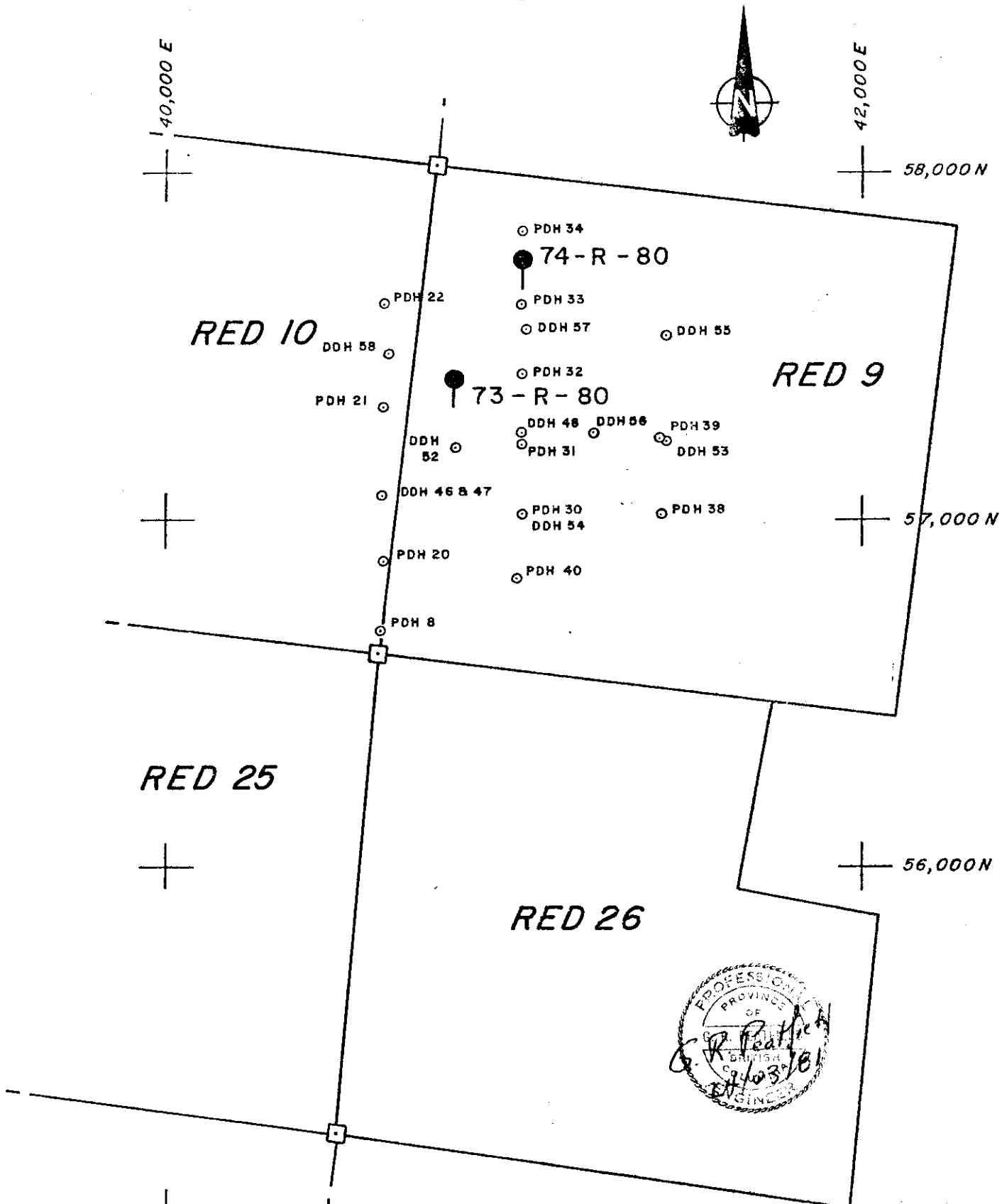


Figure 4

Scale 1:4,800

grid is in feet

Texasgulf Inc.			
1980			
DRILL HOLE LOCATIONS			
WORK BY	DRAWN BY	DATE	DRWG. NO.
GRP	GRP	Feb 81	
200	0	200	400 600
Scale in Feet			



occur, within an elongate highly altered subvolcanic intrusive complex of monzonitic composition, enclosed by andesitic to basaltic volcanic and volcanoclastic rocks of Late Triassic age.

The present drilling was within the smaller but relatively high-grade "East Zone", which is a narrow, steeply dipping zone of intense quartz veining carrying strong chalcopyrite (and rarely bornite) mineralization, with some pyrite and hematite (probably derived from magnetite).

#### DIAMOND DRILLING

This report concerns the results of a programme consisting of two diamond drill holes completed during 1980, as follows:

DDH 73-R-80	(180°/-45°)	264.7 m
DDH 74-R-80	(180°/-45°)	361.6 m

Summary drill logs for the holes are included as Appendix A, analyses and assays are tabulated in Appendix B. The core is stored on the property.

The holes were drilled as part of a continuing programme aimed at fully defining the size and shape of the "East Zone". The results were moderately encouraging, and show that, in some areas at least, bornite becomes more abundant with depth. The zone is open at depth, and preliminary analyses of drill data suggest that it may represent a plunging "shoot".



## BIBLIOGRAPHY

- PANTELEYEV, A. 1975. WINDY, RED, CHRIS, SUS. in Geology, Exploration and Mining in British Columbia-1974. B.C. Department of Mines and Petroleum Resources. Victoria, B.C., 1975, pp. 340-343.
- PANTELEYEV, A. 1977. CHRIS, RED, SUS, WINDY. in Geology in British Columbia-1975. B.C. Ministry of Mines and Petroleum Resources. Victoria, B.C., 1977, pp. G85-G87.

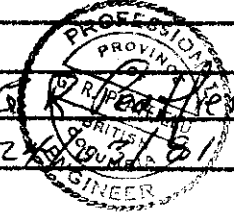
APPENDIX A

Summary Drill Logs


PROPERTY: RED-CHRIS		<h1 style="margin: 0;">TEXASGULF INC.</h1> <h2 style="margin: 0;">DRILL HOLE LOG</h2>		HOLE NO. DDH73-R-80										
LOCATION (grid) "East Zone"				CLAIM: RED 9										
LOCATION (survey)				SECTION:										
AZIM: 180 <sup>0</sup> ELEV:                  DIP: -45 <sup>0</sup>				LOGGED BY: H.R. Schmitt										
DEPTH: 264.7m          CORE SIZE: B.Q.		DIP TEST		DATE LOGGED: Aug. 1980										
STARTED: Aug. 22, 1980		<table border="1" style="margin: auto;"> <tr> <th style="width: 33%;">DEPTH</th> <th style="width: 33%;">AZIM</th> <th style="width: 33%;">DIP</th> </tr> <tr> <td>264.7 m</td> <td>184<sup>0</sup></td> <td>-40<sup>0</sup></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		DEPTH	AZIM	DIP	264.7 m	184 <sup>0</sup>	-40 <sup>0</sup>				DRILLING CO.: Longyear Canada	
DEPTH	AZIM	DIP												
264.7 m	184 <sup>0</sup>	-40 <sup>0</sup>												
COMPLETED: Aug. 26, 1980														
CORE RECOVERY: good to excellent														
DEPTH		REC'Y	DESCRIPTION											
FROM	TO													
0	6.1m		Casing											
6.1	52.3m	excellent	<p>Fine-grained feldspar porphyry - monzonitic intrusive. Rock is competent, grey-green to buff, mottled, showing strong to intense quartz-sericite-pyrite alteration. Mineralization is dominantly pyrite, with a few short sections carrying some very weakly disseminated chalcopyrite. Below 28 m the pyrite content increases markedly mostly in fractures and veinlets. Some pyritic veinlets have strong associated silicification, but true quartz veinlets are rare.</p>											
52.3	53.0m	excellent	Fault zone											
53.0	100.0m	excellent	<p>The rock continues as above the fault, but there is a marked increase in the amount of chalcopyrite (3 to 4 times) although grades are only about 0.1% Cu. Silicification and sericite alteration appear to increase with depth. Chalcopyrite remains remarkably consistent, generally as very fine disseminations.</p>											

TEXASGULF INC.		DRILL HOLE LOG		HOLE NO. 73-R-80	PAGE NO. 2
DEPTH		REC'Y	DESCRIPTION		
FROM	TO				
100.0	101.0m	excellent	Fault zone		
101.0	119.7m	excellent	Rock is as above the fault, with perhaps somewhat more pyrite, and local zones of pyrite-quartz veining. This section terminates on a small fault.		
119.7	146.0m	excellent	Sericitic feldspar porphyry with some hematite after magnetite. Weak quartz vein stockworks carry pyrite and chalcopyrite, with pyrite generally subordinate. Locally, there are traces of bornite. Hematite is characteristic of this rock type. Faults are common at the bottom of this section.		
146.0	214.0m	good to excellent	The rock is similar to that above, but the intensity of quartz veining increases markedly, as does the chalcopyrite content. There are several short local zones of faulting and brecciation. Bornite is common in some areas of quartz veining, pyrite is uncommon.		
214.0	219.0m	excellent	The rock is much the same as above, but the sulphide content is much higher, predominantly pyrite in semi-massive streaks up to 2 or 3 cm thick.		
219.0	226.0m	excellent	As above, but with much less chalcopyrite.		

DEPTH		REC'Y	DESCRIPTION
FROM	TO		
226.0	228.0m	excellent	Fault zone
228.0	246.0m	excellent	Intensely altered feldspar porphyry, sericitic and with moderately to intensely developed quartz veining but generally less sulphides than previously. Hematite is still common. Faulting becomes more common with depth, and quartz veining diminishes.
246.0	253.0m	excellent	Major fault zone.
253.0	264.7m	excellent	Strongly altered feldspar porphyry with local zones of faulting and strong pyrite. Chalcopyrite content is uniformly low. Quartz veining is rare.
			E.O.H. @ 264.7m

*per G. R. P. H.*  


PROPERTY: RED-CHRIS		<h1 style="margin: 0;">TEXASGULF INC.</h1> <h2 style="margin: 0;">DRILL HOLE LOG</h2>		HOLE NO. DDH 74-R-80										
LOCATION(grid)"East Zone"				CLAIM: RED 9										
LOCATION(survey)				SECTION:										
AZIM: 180° ELEV:          DIP: -45°				LOGGED BY: H.R. Schmitt, R.E. Meyers										
DEPTH: 361.6m          CORE SIZE: B.Q.		DIP TEST		DATE LOGGED: August-September 1980										
STARTED: August 28, 1980		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>DEPTH</td> <td>AZIM</td> <td>DIP</td> </tr> <tr> <td colspan="3">Not Surveyed</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		DEPTH	AZIM	DIP	Not Surveyed						DRILLING CO.: Longyear Canada	
DEPTH	AZIM			DIP										
Not Surveyed														
COMPLETED: August 31, 1980														
CORE RECOVERY: good to excellent														
DEPTH		REC'Y	DESCRIPTION											
FROM	TO													
0	4.6m		Casing											
4.6	54.0m	good to excellent	Fine feldspar or hornblende-feldspar porphyry - monzonite intrusive. Rock is competent pale green to buff, mottled, with strong to intense quartz-sericite-pyrite alteration. Mineralization is dominantly pyrite, with very rare chalcopyrite. There are a few well developed quartz veinlets, but no stockwork. Very minor faults and breccia zones are scattered throughout the section.											
54.0	100.0m	excellent	Rock is essentially as above, but with more abundant pyrite and traces of chalcopyrite, especially in veinlets with or without quartz. Hematite becomes notable in this section. There seems to be a tendency toward increased silicification with depth.											
100.0	150.0m	excellent	Essentially as above, with less sulphides and a lower copper content. There is very weak quartz veining and local stockwork throughout. The vein intensity rises with depth, but copper content remains low.											

DEPTH		REC'Y	DESCRIPTION
FROM	TO		
150.0	285.8m	excellent	Again, there is little change in rock type, but the vein intensity and sulphide content rise, and copper content increases slightly. Silicification and sericite alteration have become strong to intense. Although the density of quartz veining, intensity of alteration, and copper content vary somewhat throughout this section, there is no essential difference in the rock type.
285.8	289.6m	excellent	Breccia, with sericitically altered fragments in a quartz-carbonate matrix.
289.6	299.0m	excellent	Strongly altered and fractured porphyry with some quartz veining and moderate sulphide content, much as above the breccia zone.
299.0	325.0m	excellent	This section is a similar rock but with intense quartz vein stockworking and much increased chalcopyrite content, with some bornite locally. This section is very similar to the mineralized section (146-214m) in DDH-73-R-80.
325.0	346.0m	excellent	Altered and weakly mineralized feldspar porphyry essentially the same as the section above the strong mineralization, with perhaps slightly more copper.
346.0	361.6m	excellent	Major fault zone
			E.O.H. @ 361.6m
			<i>per</i>  <i>1/2/81</i>





APPENDIX B

Summary of Assays & Analyses

## Summary of assays and analyses

### Note:

Core samples were analyzed by Bondar-Clegg & Co. Ltd. in North Vancouver. Geochemical analyses for Cu involved hot Lefort aqua regia extraction followed by atomic absorption analysis. Assays were by standard techniques, including fire assay for precious metals.



LATITUDE: \_\_\_\_\_ AZIMUTH: 180° INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_LONGITUDE: \_\_\_\_\_ DIP: -45° INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_

ELEVATION: \_\_\_\_\_ INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_

SAMPLE No.	METRES		Cu			Au			Ag	Cu
	FROM	TO	%	AVG	AVG	oz/ton	AVG	AVG	oz/ton	ppm.
16786	111.0	114.0								980
7	114.0	117.0								1220
8	117.0	120.0								455
9	120.0	123.0	0.28			0.005			0.02	
16790	123.0	126.0	0.34			0.005			0.02	
1	126.0	129.0	0.30			0.005			0.02	
2	129.0	132.0	0.41			0.008			0.02	
3	132.0	135.0	0.21			0.004			0.02	
4	135.0	138.0	0.34			0.007			0.02	
5	138.0	141.0	0.47			0.009			0.03	
6	141.0	144.0	0.49			0.007			0.02	
7	144.0	147.0	0.48			0.008			0.05	
8	147.0	150.0	0.81			0.015			0.08	
9	150.0	153.0	1.20			0.023			0.14	
16800	153.0	156.0	0.94			0.016			0.08	
16151	156.0	159.0	1.21			0.022			0.10	
2	159.0	162.0	1.38			0.027			0.12	
3	162.0	165.0	1.67			0.029			0.16	
4	165.0	168.0	1.22			0.026			0.23	
5	168.0	171.0	1.80			0.040			0.22	
6	171.0	174.0	1.52			0.029			0.15	
7	174.0	177.0	1.20			0.025			0.11	
8	177.0	180.0	1.21			0.029			0.08	
9	180.0	183.0	1.07			0.024			0.09	
16160	183.0	186.0	0.71			0.015			0.03	
1	186.0	189.0	1.28			0.025			0.10	
2	189.0	192.0	1.44			0.029			0.11	
3	192.0	195.0	1.14			0.025			0.08	
4	195.0	198.0	1.16			0.026			0.12	
5	198.0	201.0	1.08			0.025			0.08	
6	201.0	204.0	1.24			0.033			0.10	
7	204.0	207.0	0.93			0.021			0.10	
8	207.0	210.0	0.91			0.024			0.09	
9	210.0	213.0	0.96			0.024			0.13	
16170	213.0	216.0	1.50			0.043			0.27	







LATITUDE: \_\_\_\_\_ AZIMUTH: 180° INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_LONGITUDE: \_\_\_\_\_ DIP: -45° INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_

ELEVATION: \_\_\_\_\_ INCLINATION: \_\_\_\_\_ / \_\_\_\_\_ at \_\_\_\_\_

SAMPLE No.	METRES		Cu			Au			Aq	Cu
	FROM	TO	%	AVG	AVG	oz/ton	AVG	AVG	oz/ton	ppm.
16257	212.0	215.0								640
8	215.0	218.0								769
9	218.0	221.0								823
16260	221.0	224.0								1100
1	224.0	227.0								1420
2	227.0	230.0								806
3	230.0	233.0								970
4	233.0	236.0								1280
5	236.0	239.0								1260
6	239.0	242.0								916
7	242.0	245.0								1240
8	245.0	248.0								652
9	248.0	251.0								615
16270	251.0	254.0								1020
1	254.0	257.0								2400
2	257.0	260.0								1100
3	260.0	263.0								2800
4	263.0	266.0								2000
5	266.0	269.0								1760
6	269.0	272.0								2600
7	272.0	275.0								2700
8	275.0	278.0								4400
9	278.0	281.0								3400
16280	281.0	284.0								2600
1	284.0	287.0								2600
2	287.0	290.0								2100
3	290.0	293.0								1080
4	293.0	296.0								475
5	296.0	299.0	0.24			0.004			0.02	
6	299.0	302.0	0.44			0.007			0.06	
7	302.0	305.0	0.95			0.030			0.08	
8	305.0	308.0	1.18			0.040			0.10	
9	308.0	311.0	1.00			0.026			0.09	
16290	311.0	314.0	1.12			0.031			0.11	
91	314.0	317.0	0.71			0.020			0.11	





APPENDIX C

Statements of Qualification

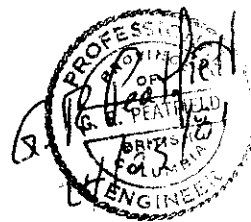
STATEMENTS OF QUALIFICATION

R.E. Meyers - Geologist

R.E. Meyers holds an M.Sc. degree in Geology from McGill University, granted in 1979. He has been employed by Texasgulf since December 1979, based in Vancouver.

H.R. Schmitt - Geologist

H.R. Schmitt obtained his B.Sc. degree in Geology from the University of British Columbia in 1977. He has been employed in a variety of positions by Texasgulf, for summer seasons from 1975, and was continuously employed by the Company from April 1978 to Sept. 1979. He is presently enrolled in post-graduate studies at U.B.C.



APPENDIX D

Statement of Expenditure

STATEMENT OF EXPENDITURES

RED-CHRIS PROPERTY  
(Diamond Drilling)

SALARIES AND FRINGE BENEFITS, TEXASGULF INC.

R.E. Meyers - Geologist Period Sept. 3-7, 3 days @ \$120	360.00	
H.R. Schmitt - Geologist Period Aug. 21-Sept. 3, 13 days @ \$90	1,170.00	
R. Freeman - Assistant Period Sept. 6-10, 5 days @ \$35	<u>175.00</u>	
	1,705.00	1,705.00

ROOM AND BOARD

Tg personnel 21 man-days @ \$40	840.00	
Longyear 40 man-days @ \$40	<u>1,600.00</u>	
(includes cook's wages, mobilization, shipping, expediting, etc.)	2,440.00	2,440.00

HELICOPTER SUPPORT

Texasgulf Bell 206B 28.7 hours @ \$330	9,471.00	
Frontier Helicopters Bell 205 (pro-rated share of invoice)	3,137.60	
Northern Mountain Helicopters Bell 206B (pro-rated share of invoices)	<u>3,056.00</u>	
	15,664.60	15,664.60

DIAMOND DRILLING

Longyear Canada, invoiced charges for drilling, survey, core boxes, supplies, moving time, etc.		36,798.19
---	--	-----------

ANALYTICAL COSTS

70 Au + Ag assays @ \$9.50	665.00	
70 Cu assays @ \$5.50	385.00	
136 Cu analyses @ \$1.65	224.40	
136 sample prep's @ \$2.00	<u>272.00</u>	
	1,546.40	1,546.40

REPORT PREPARATION

G.R. Peatfield, P.Eng. 3 days @ \$180	540.00	
Secretarial, draughting, etc.	<u>200.00</u>	
	740.00	<u>740.00</u>

\$58,894.19

