

84-1441-13376  
12/85



Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources

ASSESSMENT REPORT  
TITLE PAGE AND SUMMARY

TYPE OF REPORT/SURVEY(S) DIAMOND DRILLING	TOTAL COST \$38,945.50
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AUTHOR(S) R. Darney, Geologist ..... SIGNATURE(S) *R. Darney*  
H. S. Aikins, C. E. T. ....

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED December 31, 1984 YEAR OF WORK 1984

PROPERTY NAME(S) CUB Group

COMMODITIES PRESENT Zn., Pb., Ag.

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN No. 90 (Partial coverage)

MINING DIVISION Liard NTS 104 0/15E, 16W

LATITUDE 59° 56' N LONGITUDE 130° 31' W

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

Name	Record No.	Name	Record No.
Cub	440	DS #2	933
Rox	572	Ranch Fr.	3023
Blue	573	Red	3038
DS #1	932	Reo 1	3039
		Reo 2	3040

OWNER(S) (1) Doug Schellenberg (2) SOVEREIGN METALS CORPORATION

MAILING ADDRESS  
R.R. #1, Greenbay Road, Westbank, B. C. 305-535 Thurlow Street  
Vancouver, B. C. V6E 3L2

OPERATOR(S) (that is, Company paying for the work)  
(1) SOVEREIGN METALS CORPORATION (2)

MAILING ADDRESS  
305-535 Thurlow Street  
Vancouver, B. C. V6E 3L2

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):  
Galena and sphalerite occur as crudely banded zones in a limestone unit near the contact with the Cassiar batholith.

REFERENCES TO PREVIOUS WORK See "Exploration in British Columbia - 1979" page 314.

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS		COST APPORTIONED
<b>GEOLOGICAL (scale, area)</b>				
Ground	.....	.....	.....	.....
Photo	.....	.....	.....	.....
<b>GEOPHYSICAL (line-kilometres)</b>				
Ground	.....	.....	.....	.....
Magnetic	.....	.....	.....	.....
Electromagnetic	.....	.....	.....	.....
Induced Polarization	.....	.....	.....	.....
Radiometric	.....	.....	.....	.....
Seismic	.....	.....	.....	.....
Other	.....	.....	.....	.....
Airborne	.....	.....	.....	.....
<b>GEOCHEMICAL (number of samples analysed for ....)</b>				
Soil	.....	.....	.....	.....
Silt	.....	.....	.....	.....
Rock	.....	.....	.....	.....
Other	.....	.....	.....	.....
<b>DRILLING (total metres; number of holes, size)</b>				
Core (a) One hole-154 m., (b) 7 holes - 285m.	.....	(a) ROX (\$14,387.50) (b) D.S.1 (\$24,558.00)	.....	\$38,945.50
Non-core	.....	.....	.....	.....
<b>RELATED TECHNICAL</b>				
Sampling/assaying	.....	.....	.....	.....
Petrographic	.....	.....	.....	.....
Mineralogic	.....	.....	.....	.....
Metallurgic	.....	.....	.....	.....
<b>PROSPECTING (scale, area)</b>				
<b>PREPARATORY/PHYSICAL</b>				
Legal surveys (scale, area)	.....	.....	.....	.....
Topographic (scale, area)	.....	.....	.....	.....
Photogrammetric (scale, area)	.....	.....	.....	.....
Line/grid (kilometres)	.....	.....	.....	.....
Road, local access (kilometres)	.....	.....	.....	.....
Trench (metres)	.....	.....	.....	.....
Underground (metres)	.....	.....	.....	.....
<b>TOTAL COST</b>				<b>\$38,945.50</b>

FOR MINISTRY USE ONLY	NAME OF PAC ACCOUNT	DEBIT	CREDIT	REMARKS:
Value work done (from report) .....	.....	.....	.....	
Value of work approved .....	.....	.....	.....	
Value claimed (from statement) .....	.....	.....	.....	
Value credited to PAC account .....	.....	.....	.....	
Value debited to PAC account .....	.....	.....	.....	
Accepted .....	Rept. No. ....	.....	.....	Information Class .....

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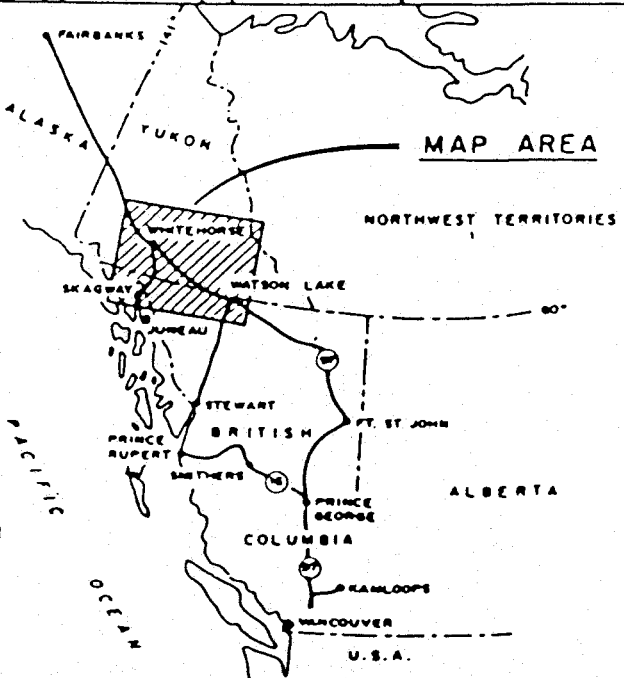
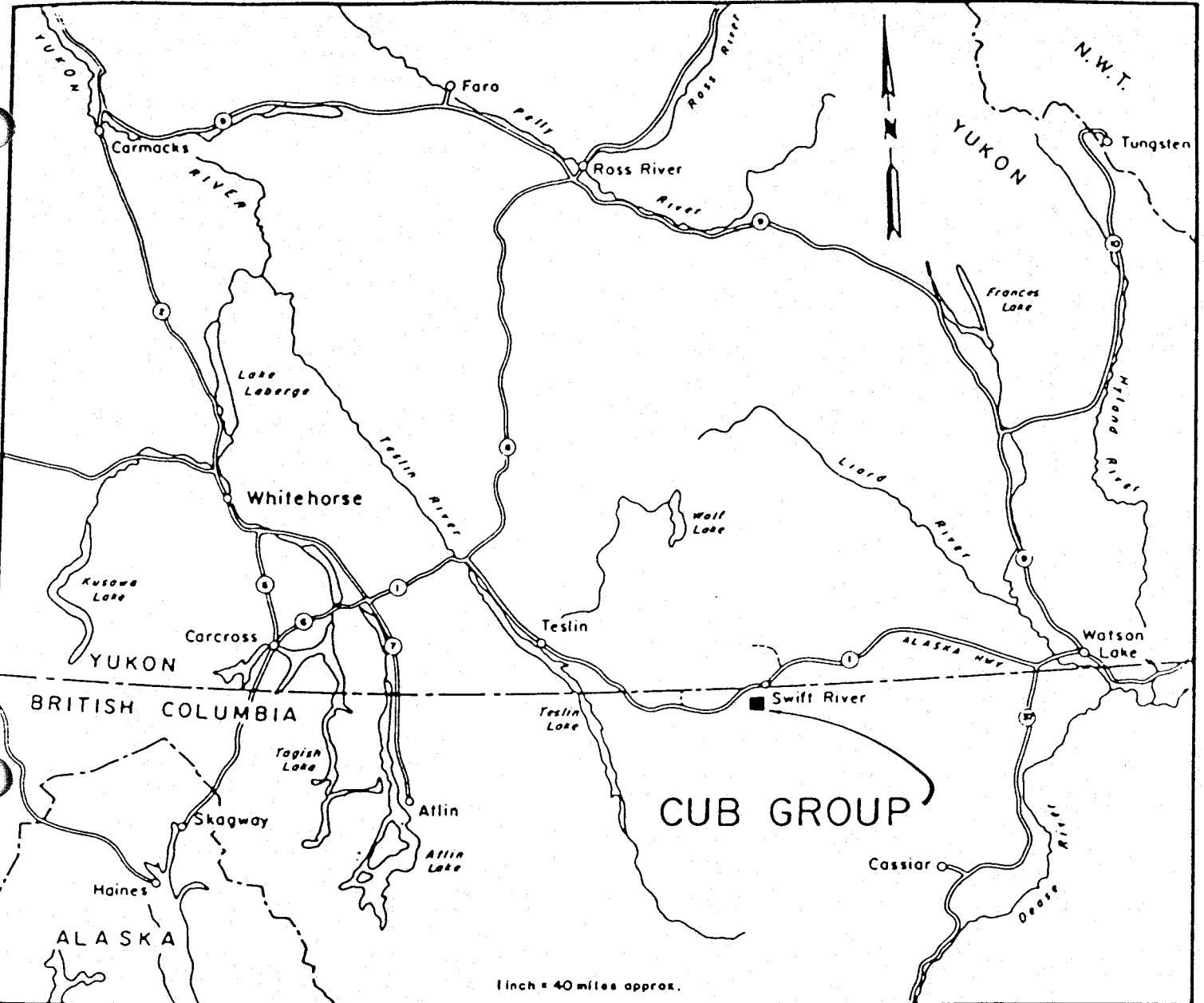
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14. Statement of Qualifications
  - (a) H. S. Aikins, C.E.T.
  - (b) R. J. Darney, B.Sc.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT****13,376**APPENDICES

Diamond Drill Logs: Holes 84-1 to 84-8 incl.

LIST OF MAPS

- FIGURE 1 1984 Diamond Drilling  
(Scale 1:12,500)
- FIGURE 2 WEST ZONE  
1984 Diamond Drill Plan  
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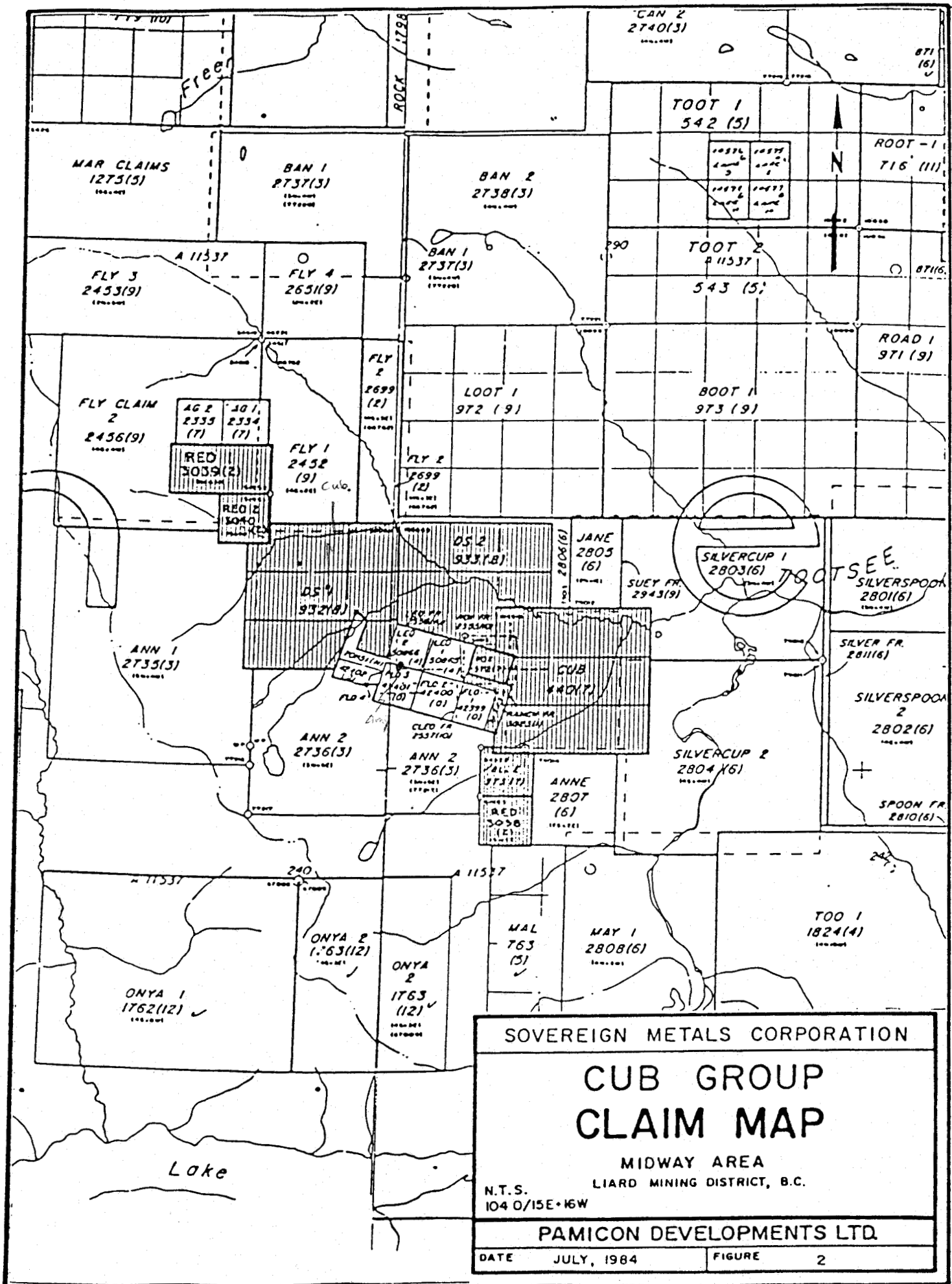
SOVEREIGN METALS CORPORATION (NPL)

**CUB CLAIM GROUP  
MIDWAY AREA**

TOOTSEE RIVER, LIARD MINING DISTRICT, B.C.

**PROPERTY LOCATION MAP**

DRAWN BY: K. D. H.	DATE: JULY 1984	PROJECT NO. 64-27	N.T.S. 104 0/100 616 W	MAP No: 1
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SOVEREIGN METALS CORPORATION

## CUB GROUP CLAIM MAP

MIDWAY AREA  
LIARD MINING DISTRICT, B.C.

N.T.S.  
104 0/15E+16W

**PAMICON DEVELOPMENTS LTD.**

DATE	JULY, 1984
FIGURE	2

## 5. INTRODUCTION

The Cub Property comprises a total of nine mineral claims consisting of 34 contiguous mineral claim units. The property is owned by D. Schellenberg of Watson Lake, Yukon and is presently under option to Sovereign Metals Corporation (n.p.l.) of Vancouver, B. C.

Between June 4th and 25th, 1984, Sovereign Metals Corporation as operator, engaged Pamicon Developments Limited to supervise the preparation of a survey grid and to conduct geological and geochemical surveys. Geotronics Surveys Ltd. of Vancouver, B. C. conducted a Maxmin Electromagnetic Survey over the 10.9 km. grid using 100 metre coil separation and recording frequencies of 222, 444, 888, 1777 and 3555 Hz. Results of this work were described in a report by David G. Mark, Geophysicist dated July 25th, 1984 and in a progress report by D. A. Caulfield, Geologist and Charles K. Ikona, P. Eng. dated August 2nd, 1984.

Between August 22nd, 1984 and September 20th, 1984 439 metres of NQ wireline diamond drilling in 8 holes was completed under the supervision of R. Darney, Geologist. Results of this work are detailed herein.

## 6. LOCATION, ACCESS & TOPOGRAPHY

The claims are located some 5 kilometers north of the east end of Tootsee Lake and about 8 kilometers south of the British Columbia/Yukon border. Coordinates for the center of the claim group are 59° 56' North, 130° 30' West. The map sheets covering the area are 104 0/16 W and 104 0/15 E. (National Topographic System).

Access to the property is gained from Mile 701 on the Alaska Highway, where a bushroad leads south, partly along the Tootsee River, to the Midway Prospect of Regional Resources Ltd. at a distance of about 30 kilometers. This part of the road is reported to be suitable for normal vehicle traffic. A branch road forking off in southwesterly direction some 5 kilometers north of the Regional Camp leads to the Cub Property. This branch road, with a length of about 8 kilometers, is passable in the dry season only. Alternative access is by helicopter, of which several are usually available in the general area during the summer.

The nearest town, at 130 kilometers east of the property, is Watson Lake, Yukon, where most of the necessary services are available.

The claims are located in the Cassiar Mountains at elevations from 1,200 to 1,600 meters. Peaks in the general area rise to about 2,000 meters. The general topography can be described as rugged but accessible. At higher elevations, the country is open and allows good travel, although some slopes are steep. In the valleys, small timber and heavy undergrowth make travel difficult.

7. PROPERTY: CLAIM STATUS

The property consists of the following located mineral claims:

<u>Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>	<u>Expiry Date</u>
Cub	440	9	July 27/77	1987
Rox	572	1	July 6/78	1989
Blue	573	1	July 6/78	1987
DS #1	932	9	August 21/79	1985
DS #2	933	9	August 21/79	1985
Ranch Fr.	3023	1	January 27/84	1985
Red	3038	1	February 23/84	1985
Reo 1	3039	2	February 23/84	1985
Reo 2	3040	1	February 23/84	1985

Claims are recorded in the Liard Mining Division and located within the area covered by the Mineral Reference Maps 104 0/16 W and 104 0/15 E.

On December 31, 1984 a Notice to Group was recorded forming two separate but contiguous claim groups. The diamond drilling work which is the subject of this Report was allocated on the basis of work performed and costs incurred as set out in the Itemized Cost Statements which are enclosed.



## 8. HISTORY

High grade silver-lead-zinc mineralization was discovered in the Camp Creek area on what is now Flo #3 mineral claim in 1948.

In 1949 the Hudson Bay Mining and Smelting Company drilled eight small diameter holes along a strike length of 775 ft. (236 m.). Four holes intersected mineralization while the remaining holes failed to intersect potentially economic values. The property was allowed to lapse.

In 1962 the property was acquired by the Rancheria Mining Company Ltd., controlled by W. S. Kennedy of Toronto, Ontario.

During 1963, 1964 and 1965 the Rancheria Mining Company conducted a significant amount of exploration work including 24 diamond drill holes and an underground adit 835 ft. in length on what was then known as the Amy Group. During 1966 and 1967 a limited amount of work on the Amy Group was conducted by Chapman, Wood & Griswold personnel. In 1968 a short percussion drilling program was attempted by Irwin Engineering of Edmonton, Alberta. The claims were allowed to lapse. Six key mineral claims (Flo and Leo) were subsequently staked by J. Foster Irwin of Edmonton, to cover the mine workings. Forty additional claims were acquired to cover adjoining ground including the area now covered by the Cub Group. The property was assigned to Fosco Mining Ltd. and additional work was conducted from 1971 to 1973. During this period a lower level of underground work was completed with 1,400 ft. of cross-cut and 200 ft. of drifting to explore the mineralized zone on the 4,200 ft. level (1,280 m.). In March of 1974 results of all work to date were summarized in a report by Chapman, Wood & Griswold.

In July of 1977, Mr. D. Schellenberg, geologist, examined ground adjoining the Flo and Leo claims and located the Cub claim (9 units). Schellenberg subsequently extended his holding to include the present group. Dupont of Canada Exploration Ltd. acquired an option on the property and conducted geological and geochemical surveys during 1979.

A primary objective in work conducted by Dupont was the evaluation of skarn zones with values in tungsten and molybdenum. Results were not considered economic and the option terminated in 1980. During 1981 and 1982 Marbaco Mines Ltd., a successor to Fosco Mining Ltd., optioned the Cub property and conducted geochemical surveys and limited bulldozer work. The property reverted to Mr. Schellenberg and an option was acquired by Sovereign Metals Corporation in May of 1983. H. Veerman, P. Eng., based on prior examinations and a detailed review of existing data, recommended that additional work be conducted to explore potential extensions to the known mineralized zone on the adjacent Flo and Leo claims and to locate the source or high grade float encountered in the course of his examination.

## 9. GEOLOGY

The area is covered by the Jennings River Map Sheet (G.S.C. Paper 68-55, H. Gabrielse). The property is bounded on the south by the Cassiar batholith of Mid-Cretaceous age and the known mineral occurrences of potential value occur within altered sediments ranging from Cambrian to Devonian in age. (J. F. Irwin, 1973). Limestone (Cambrian-Ordovician) is regarded as a favourable host for economic sulphide deposits.

Paper 1983-1, Ministry of Energy, Mines & Petroleum Resources, B. C., pages 149 - 169, D. G. MacIntyre, discusses the geologic setting of the Midway deposits immediately to the east of the Cub Group. The Midway deposits are described as stratabound carbonate-hosted massive sulphide occurrences. The location of hydrothermal vents is regarded as the most critical factor in determining where deposits of this type are formed.

## 10. DIAMOND DRILL RESULTS

Eight diamond drill holes were completed for a total of 439 metres. Drill targets were selected on the basis of Electromagnetic survey results, surface or trenched exposures of mineralization and/or co-incident geochemical anomalies and float occurrences.

Significant results are summarized as follows:

- Hole 84-1: No intersection (Maxmin anomaly).
- Hole 84-2: 9.75 to 11.28, 1.53 m. @ 41.8 grams/Tonne  
Ag., minor Pb., Zn.  
18.36 to 18.97, 0.61 m. @ 5.4% Zn., minor  
Ag., Pb.
- Hole 84-3: 21.5 to 22.7, minor Ag., Pb., Zn.  
26.3 to 27.9, minor Ag., Pb., Zn.
- Hole 84-4: No intersection.
- Hole 84-5: No intersection.
- Hole 84-6: 0 to 1.52, 1.52 m. @ 32.6 grams/Tonne  
Ag., 2.64% Pb., 4.94 % Zn.
- Hole 84-7: No intersection
- Hole 84-8: No intersection

Detailed lithologic logs together with the analytic results of all core samples submitted for analysis are enclosed.

11. CORE STORAGE

Drill core has been stored in standard plywood trays, transported to Watson Lake, Yukon and placed in the care of Mr. D. Schellengerg, property owner. On-site storage was deemed insecure as road access has resulted in serious vandalism of previously existing facilities.

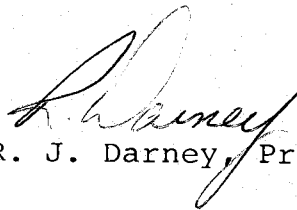
12. CONCLUSIONS

Hole 84-1 was located to test one of the seven possible conductive features delineated by the electromagnetic survey. As results were negative, drilling was employed to test the down dip extension of a sulphide zone located in the course of prospecting and exposed by trenching. Holes 84-2 and 84-6 located on this exposure confirmed the presence and continuity of the mineralized limestone as a potential host for an ore-grade silver-lead-zinc deposit. Information gained from the 1984 program has provided a basis for reinterpretation of previous survey results which warrant further evaluation.

Respectfully submitted,



H. S. Aikins, C. E. T.



R. J. Darney, Project Geologist

ITEMIZED COST STATEMENT

I, HAROLD S. AIKINS, President of SOVEREIGN METALS CORPORATION (n.p.l.), certify that the following costs were incurred in diamond drilling operations on the ROX mineral claim during August, 1984. Drilling commenced on August 22nd, 1984 and was completed on September 2nd, 1984.

- G. D. Diamond Drilling Co. Ltd. 18124 - 59A Avenue Surrey, B. C. V3S 4V5	
- Hole 84-1: 505 ft. (154 m) @ \$15.50/ft.	\$ 7,827.50
Two NQ bits @ \$530/ea.	1,060.00
- Joe Corcoran Construction P. O. Box 35 Watson Lake, Yukon Y0A 1C0	
- Drill mobilization and site preparation with Komatsu bulldozer, 20 hrs. @ \$75/hr.	1,500.00
- R. J. Darney, Geologist Pamicon Developments Limited 215 - 543 Granville Street Vancouver, B. C. V6C 1X8	
- Professional Services, 12 days @ \$250/day	3,000.00
- Camp and Cookery - 40 man days @ \$25/day	<u>1,000.00</u>
 TOTAL cost of NQ Hole 84-1	 \$ <u>14,387.50</u>

H. S. Aikins

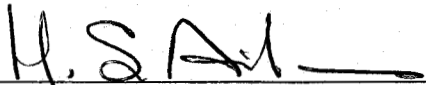
H. S. Aikins, President  
SOVEREIGN METALS CORPORATION

December 27th, 1984

ITEMIZED COST STATEMENT

I, HAROLD S. AIKINS, President of SOVEREIGN METALS CORPORATION (n.p.l.), certify that the following costs were incurred in diamond drilling operations on the D. S. 1 mineral claim during September, 1984. Drilling commenced on September 3rd, 1984 and was completed on September 20th, 1984.

- G. D. Diamond Drilling Co. Ltd. 18124 - 59A Avenue Surrey, B. C. V3S 4V5 - Holes 84-2 to 8, 936 feet (285 m) @ \$15.50/ft.	\$ 14,508.00
- Joe Corcoran Construction P. O. Box 35 Watson Lake, Yukon Y0A 1C0 - Drill mobilization and site preparation with Komatsu bulldozer, 50 hrs. @ \$75/hr.	3,750.00
- R. J. Darney, Geologist Pamicon Developments Limited 215 - 543 Granville Street Vancouver, B. C. V6C 1X8 - Professional Services, 18 days @ \$250/day	4,500.00
- Camp and Cookery - 72 man days @ \$25/day	<u>1,800.00</u>
TOTAL cost of NQ Holes 84-2 to 8 incl.	<u><u>\$24,558.00</u></u>

  
H. S. Aikins, President  
SOVEREIGN METALS CORPORATION

December 27th, 1984

STATEMENT OF QUALIFICATIONS

I, **HAROLD S. AIKINS**, of 204 - 4001 Mt. Seymour Parkway, in the District of North Vancouver, Province of British Columbia, DO HEREBY CERTIFY that:

1. I am the President of SOVEREIGN METALS CORPORATION (n.p.l.);
2. I am a Senior Engineering Technician registered with the Society of Engineering Technologists of the Province of British Columbia;
3. I have been employed in Technical, Administrative and Managerial duties in mining and mineral exploration since 1950;
4. I have full knowledge of the work conducted and the costs incurred on the Cub group of mineral claims and as set forth in this Report.

DATED at Vancouver, British Columbia this *13<sup>th</sup>* day of *March*, 1985.

*H. S. Aikins*  
H. S. Aikins, C. E. T.

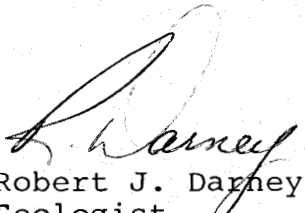


STATEMENT OF QUALIFICATIONS

I, ROBERT J. DARNEY, of R. R. #1, Sechelt in the Province of British Columbia, DO HEREBY CERTIFY that:

1. I am a Geologist in the employment of Pamicon Developments Limited with offices at 215 - 543 Granville Street, Vancouver, British Columbia;
2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Geology;
3. My primary employment since 1966 has been in the field of mineral exploration;
4. My experience has encompassed a wide range of geological environments and has allowed considerable familiarization of exploration techniques for both lode and placer deposits;
5. This Report is based on field data generated during a 1984 diamond drilling program supervised by myself on the Cub property.

DATED at Vancouver, British Columbia this 13 day  
of March, 1985.

  
Robert J. Darney  
Geologist

LOCATION: CUB Claim

Grid Location: 4+50E; 2+25N (metres)

AZIM: 040°

ELEV:

DIP: -45°

LENGTH: 505' (154 m)

CORE SIZE: NQ

STARTED: August 22, 1984

COMPLETED: August 31, 1984

PURPOSE: Test Max. Min. anomaly "B"

See Geotronics Surveys Ltd. report

CORE RECOVERY:

## DRILL HOLE LOG

### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No.  
84-1

PAGE NO.  
1

PROPERTY: SOVEREIGN METALS CORPORATION

"CUB Group"

CLAIM NO: ROX - Record No. 572

SECTION: L 4+50E

LOGGED BY: R. Darney

DATE LOGGED: Aug. 22 - Sept. 2, 1984

DRILLING CO: G. D. Diamond Drilling

ASSAYED BY: No assaying required

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH	ASSAYS			
FROM	TO			FROM	TO					
0.0	35.0	Overburden - tri-cone bit (no core)		0.0	10.67					
35.0	38.5	Greenstone, dense fg. dyke Rx Sharp contact 60°, recovery 90%		10.67	11.73					
38.5	48.5	Phyllite; dk. brown to green foliated (irreg.) Core angle 70°-75°, recovery 85%								
48.5	55.0	Phyllite; wavy foliation - c.a. 65° - 75° Chlorite & Sericite alt'n., recovery 85%		14.78	16.76					
55.0	170.0	Phyllite; becomes increasingly siliceous down section with a number of narrow pegmatic zones characterized by pale yellow feldspar with mg. white mica and mottled qtz. - moderate to strong fracturing with oxidization decreasing to depth. local crenulations suggest tight folds but no major faulting evident. Minor pyrrhotite 147'-157'; occasional chlorite knots // to foliations.		16.76	51.82					
170.0	196.0	Phyllite; alternating tan and greenish bands, locally siliceous with tan mud stone intercalations.		51.82	59.74					
196.0	199.0	Greenstone Dyke. Contacts at 60°		59.74	60.66					
199.0	226.0	Phyllite; predominately light coloured mudstone with minor disseminated pyrite and occasionally fracture filling.		60.66	68.88					
226.0	229.0	Greenstone; sharp MW & FW contacts. Core angle 65° - minor diss. Py. throughout.		68.88	69.80					
229.0	234.0	Phyllite; as 199 to 226.		69.80	71.32					
234.0	236.0	Phyllite; soft tan mudstone.		71.32	71.93					
236.0	236.5	Phyllite; hard-qtz. flooded.		71.93	72.08					
236.5	244.0	Phyllite; dark laminated and crenulated hard and soft bands. Pegmatites @ 158-159, 163-163.5, 167-168 - feldspar, mica, qtz.		72.08	74.37					

LOCATION: CUB Claim

Grid Location: 4+50E; 2+25N (metres)

AZIM: 040°

ELEV:

DIP: -45°

LENGTH: 505' (154 m)

CORE SIZE: NQ

STARTED: August 22, 1984

COMPLETED: August 31, 1984

PURPOSE: Test Max. Min. anomaly "B"

See Geotronics Surveys Ltd. report

CORE RECOVERY:

### DRILL HOLE LOG

#### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No.  
84-1

PAGE NO.  
2

PROPERTY: SOVEREIGN METALS CORPORATION

"CUB Group"

CLAIM NO: ROX - Record No. 872

SECTION: L 4+50E

LOGGED BY: R. Darney

DATE LOGGED: Aug. 22 - Sept. 2, 1984

DRILLING CO: G. D. Diamond Drilling

ASSAYED BY: No assaying required

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH	ASSAYS			
FROM	TO			FROM	TO					
244.0	249.5	Quartzite; pale grey with occasional micaceous parting, fg. to vfg. hard		74.37	76.05					
249.5	251.0	Broken zone in Quartzite. Oxidized 250-250.5, pegmatite 205.5-251.		76.05	76.50					
251.0	255.0	Greenstone; carbonate frs. with abundant pyrite from 252-252.5.		76.50	77.72					
255.0	266.5	Phyllite; pred. dark with light interbanding.		77.72	81.23					
266.5	272.0	Greenstone; slightly magnetic with up to 1% diss. pyrite.		81.23	82.90					
272.0	290.0	Phyllite; alternating lt. & dk. banding. Core angles vary from 50° to 75° due to crenulations. Average near 65°.		82.90	88.39					
290.0	311.5	Quartzite; sharp contact at 45° fg. hard, white and slightly micaceous for first few feet. Fractured with limonite from 293.5 - 295.		88.39	94.95					
311.5	312.5	Phyllite; badly broken.		94.95	95.25					
312.5	338.5	Quartzite; white with local mottled greenish zones due to chlorite and sericite.		95.25	103.17					
338.5	342.0	Phyllite; dk. grey to black, c.a. 60°								
342.0	352.0	Quartzite; lt. grey to pale green.		103.17	104.24					
352.0	355.0	Phyllite; as above, c.a. 55°		104.24	108.20					
355.0	358.5	Quartzite; as 342-352		108.20	109.27					
358.5	366.5	Phyllite; dk green, c.a. 75°-80°		109.27	111.71					
366.5	368.5	Quartzite; as 342-352		111.71	112.32					
368.5	423.5	Phyllite; alternating dk. chloritic and lighter siliceous sericitic phyllite. Fine disseminate pyrite ± 1% throughout. Pegmatic zones 378.5-379.5 and 389.0-391.5.		112.32	129.08					

LOCATION: CUB Claim  
 Grid Location: 4+50E; 2+25N (metres)  
 AZIM: 040° ELEV:  
 DIP: -45° LENGTH: 505' (154 m)  
 CORE SIZE: NQ  
 STARTED: August 22, 1984  
 COMPLETED: August 31, 1984  
 PURPOSE: Test Max. Min. anomaly "B"  
 See Geotronics Surveys Ltd. report  
 CORE RECOVERY:

### DRILL HOLE LOG

HOLE No. 84-1  
 PAGE NO. 3

PROPERTY: SOVEREIGN METALS CORPORATION  
 "CUB Group"

#### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

CLAIM NO: ROX - Record No. 572  
 SECTION: L 4+50E  
 LOGGED BY: R. Darney  
 DATE LOGGED: Aug. 22 - Sept. 2, 1984  
 DRILLING CO: G. D. Diamond Drilling  
 ASSAYED BY: No assaying required

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH	ASSAYS			
FROM	TO			FROM	TO					
423.5	444.0	Phyllite; (phyllitic mudstone) pale grey fg. soft with narrow siliceous bands. c.a. 65°, minor pyrite // to foliation.		129.08	135.33					
444.0	454.5	Quartzite; extremely hard, light coloured near massive with weak laminae @ 55°.		135.33	138.53					
454.5	461.0	Quartzite; minor mudstone and broken Rx.		138.53	140.51					
461.0	461.5	Quartzite; pyrite stringers		140.51	140.66					
461.5	462.0	Phyllite; mudstone		140.66	140.81					
462.0	463.0	Gouge zone		140.81	141.12					
463.0	464.0	Phyllite; brecciated mudstone minor Py.		141.12	141.43					
464.0	465.25	Quartzite?; siliceous, pyritic seds.		141.43	141.80					
465.25	473.00	Aplitic Dyke?; fg. lt. grey dyke @ 65°		141.80	144.17					
473.0	480.0	Phyllite; sericite to quartz, c.a. 65°		144.17	146.30					
480.0	486.0	Quartzite; hard, minor laminae		146.30	148.13					
486.0	490.0	Phyllite; siliceous lt. and dark banded		148.13	149.35					
490.0	497.0	Quartzite; laminated micaceous Quartzite		149.35	151.49					
497.0	498.0	Pegmatite		151.49	151.79					
498.0	505.0	Phyllite; lt. and dk. banding. Siliceous with pegmatite @ 503.5-504.0.		151.79	154.00					
505.0		End of Hole.		154.0						

Note: Hole failed to encounter a zone expected to explain anomaly encountered on Line 4+50E.

LOCATION: 13 + 02.5 W, 0 + 89.5 S.

Zinc zone, above trench

AZIM: 043°

ELEV:

DIP: -60°

LENGTH: 136' (41.45 m)

H.C.=20.7 m V.C.=35.9 m CORE SIZE: NQ

STARTED: Sept. 3, 1984

COMPLETED: Sept. 4, 1984

PURPOSE: Test surface exposure at depth.

CORE RECOVERY:

## DRILL HOLE LOG

### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No.  
84-2

PAGE NO.  
1

PROPERTY: SOVEREIGN METALS CORPORATION

"CUB Group"

CLAIM NO: DS 1, Record No. 937 Liard

SECTION: 13 + 02.5 W

LOGGED BY: R. Darney

DATE LOGGED: Sept. 6, 1984

DRILLING CO: G. D. Diamond Drilling Co. Ltd.

ASSAYED BY: Chemex Labs Ltd. Cert. A8416145

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH m.	O.P.T.		ASSAYS		
FROM	TO			FROM	TO		Au.	Ag.	% Pb.	% Zn.	% Cu.
0.0	12.0	No core; Tri-cone bit in overburden		0.0	3.66						
12.0	12.5	Float: 3" intrusive fragment, 3" phyllitic frag.		3.66	3.81						
12.5	14.0	Greenstone breccia; Qtz.-carb. matrix. Mottled pale green - 1/2" sub-angular frags.		3.81	4.27						
14.0	24.0	Phyllite; finely laminated greenish grey Rx. fractured and oxidized surface, c.a. of foliation 45°-50° (frs. @ 90° to foliation).		4.27	7.32						
24.0	31.0	Phyllite; grey to purplish banded and finely laminated with oxidized fr. surfaces. Minor pyrite, c.a. 50°.		7.32	9.45						
31.0	53.75	Phyllite; grey to dk. green, c.a. 43°-65°. Up to 5% sulphide locally.		9.45	16.38						
		32 - 37: 3% py. 1/8" galena-sphalerite stringer.	2690	9.75	11.28	1.53		1.22	0.19	0.23	
		37 - 42: c.a. 40° to foliation. py < 2.0%	2691	11.28	12.80	1.53		0.08	0.02	0.02	
		42 - 44: dk. coloured, local brecciation	2692	12.80	13.41	0.61		0.06	0.01	0.02	
		44 - 51: py. 1 to 5%, poss. sphalerite	2693	13.41	15.54	2.13		0.08	0.01	0.03	
		51 - 53.75: med. grey phyllite, less py. evident		15.54	16.38						
53.75	59.75	Limestone; wavy banded, c.a. 50-55°.		16.38	18.21						
59.75	62.5	SULPHIDE MINERALIZATION		18.21	19.05						
		59.75 - 60.25: oxidized ls with high % qtz.	2694	18.21	18.36	0.15		0.12	0.08	0.63	
		60.25 - 62.25: broken zone, 30% core recovery	2695	18.36	18.97	0.61		0.22	0.18	5.40	
		Siliceous ls with diss. Py & Sph. minor galena									
		62.25 - 62.5: Qtz.- Carb., minor diss. sulphide	2696	18.97	19.05	0.08		0.10	0.03	0.09	
62.5	72.0	Phyllite: foliated, good micaceous parting @40-50°		19.05	21.95						
72.0	86.5	Greenstone: massive dk green fg. to mg. Minor diss. py. & pyrr., weakly magnetic		21.95	26.36						
86.5	136.0	Phyllite: schistose app., alt'n. biotite, sericite chlorite, c.a. 50-55°, diss. py. common, poss. cpy.		26.36	41.45						
	136.0	End of Hole.			41.45						

LOCATION: 13 + 02.5 W, 0 + 89.5 S  
 Zinc zone, same set-up as 84-2  
 AZIM: - ELEV:  
 DIP: -90° LENGTH: 158' (48.16 m)  
 CORE SIZE: NQ  
 STARTED: Sept. 4, 1984  
 COMPLETED: Sept. 5, 1984  
 PURPOSE: Test zone as in Hole 84-2

## DRILL HOLE LOG

HOLE No. 84-3 PAGE NO. 1

PROPERTY: SOVEREIGN METALS CORPORATION  
 "CUB Group"  
 CLAIM NO: DS 1, Record No. 932, Llard  
 SECTION:  
 LOGGED BY: R. Darney  
 DATE LOGGED: Sept. 7, 1984  
 DRILLING CO: G. D. Diamond Drilling Co./Ltd.  
 ASSAYED BY: Acme Analytical Labs Ltd. #84-2731

### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

### CORE RECOVERY:

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH	O.P.T		ASSAYS		
FROM	TO			FROM	TO		Au.	Ag.	% Pb.	% Zn.	% Cu
0.0	7.0	Overburden ; Tri-cone (no core)		0.0	2.13						
7.0	31.6	Phyllite; drk. brown to greenish, high bio. foliated with chlorite & sericite alt'n. c.a. 45° @ 8', 25° @ 17' to 28', minor diss. pyrite throughout.		2.13	9.63						
31.6	35.0	Greenstone Breccia; mottled pale green, minor pyrr. in fragments & matrix.		9.63	10.67						
35.0	45.0	Phyllite; dk. green with med. green bands - (greenstone?) banding//to foliation @ 38°. Weak to moderately magnetic diss. pyrr.		10.67	13.72						
45.0	49.0	Phyllite; dk. green to brownish (biotite) minor py. & pyrr., foliated c.a. 38°		13.72	14.94						
49.0	70.5	Phyllite; alternating dk green to lt greenish-grey biotite-sericite-quartz alt'n.		14.94	21.49						
70.5	74.5	SULPHIDE MINERALIZATION - H.W. @ 37°		21.49	22.71						
		70.5-71.5: banded phyllite & calcite diss. sulph. silicified from 71.0	2697	21.49	21.79	0.30	.001	0.03	0.01	0.23	
		71.5-73.0: vuggy qtz. & tan feldspar? minor diss. galena & sphalerite <1% pyrite	2698	21.79	22.25	0.46	.001	0.03	0.01	0.04	
		73.0-74.5: increase in galena, sphalerite (minor)	2699	22.25	22.71	0.46	.001	0.11	0.21	0.85	
74.5	86.25	Phyllite; pale greenish grey, foliation 25°-50° minor py, broken zone with qtz. 84-85.		22.71	26.29						
86.25	91.50	SULPHIDE MINERALIZATION - H.W. @ 37° wavy banded Ls., partially silicified & brecciated.		26.29	27.89						
		86.25-87.75: diss. amber sph & pyrite to 1%	2700	26.29	26.75	0.46	.001	0.13	0.05	0.44	
		87.75-89.75: siliceous, minor ga.sph.py.& siderite	2601	26.75	27.36	0.61	.001	0.16	0.02	0.04	
		89.75-91.5: similar to above, decrease in silica	2602	27.36	27.89	0.53	.001	0.52	0.06	0.09	
91.50	108.0	Phyllite; pale green-grey, foliation wavy & variable		27.89	32.92						
108.0	158.0	Phyllite; dk to pale green, broken @ 121' & 151'		32.92	48.16						
		End. - c.a. 30°-40° near end			48.16						







LOCATION: 13 + 02.5 W, 0 + 75.0 S.

Zinc zone, in trench

AZIM:

ELEV:

DIP: -90°

LENGTH: 25' (7.62 m.)

V.C. = 7.62 m

CORE SIZE: NQ

STARTED: Sept. 12, 1984

COMPLETED: Sept. 12, 1984

PURPOSE: Sample zone near surface.

Hole collared on H.W. of zone

CORE RECOVERY:

## DRILL HOLE LOG

### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No.  
84-6

PAGE NO.  
1

PROPERTY: SOVEREIGN METALS CORPORATION

CLAIM NO: DSl, Record No. 932, Liard

SECTION:

LOGGED BY: R. Darney

DATE LOGGED: Sept. 13, 1984

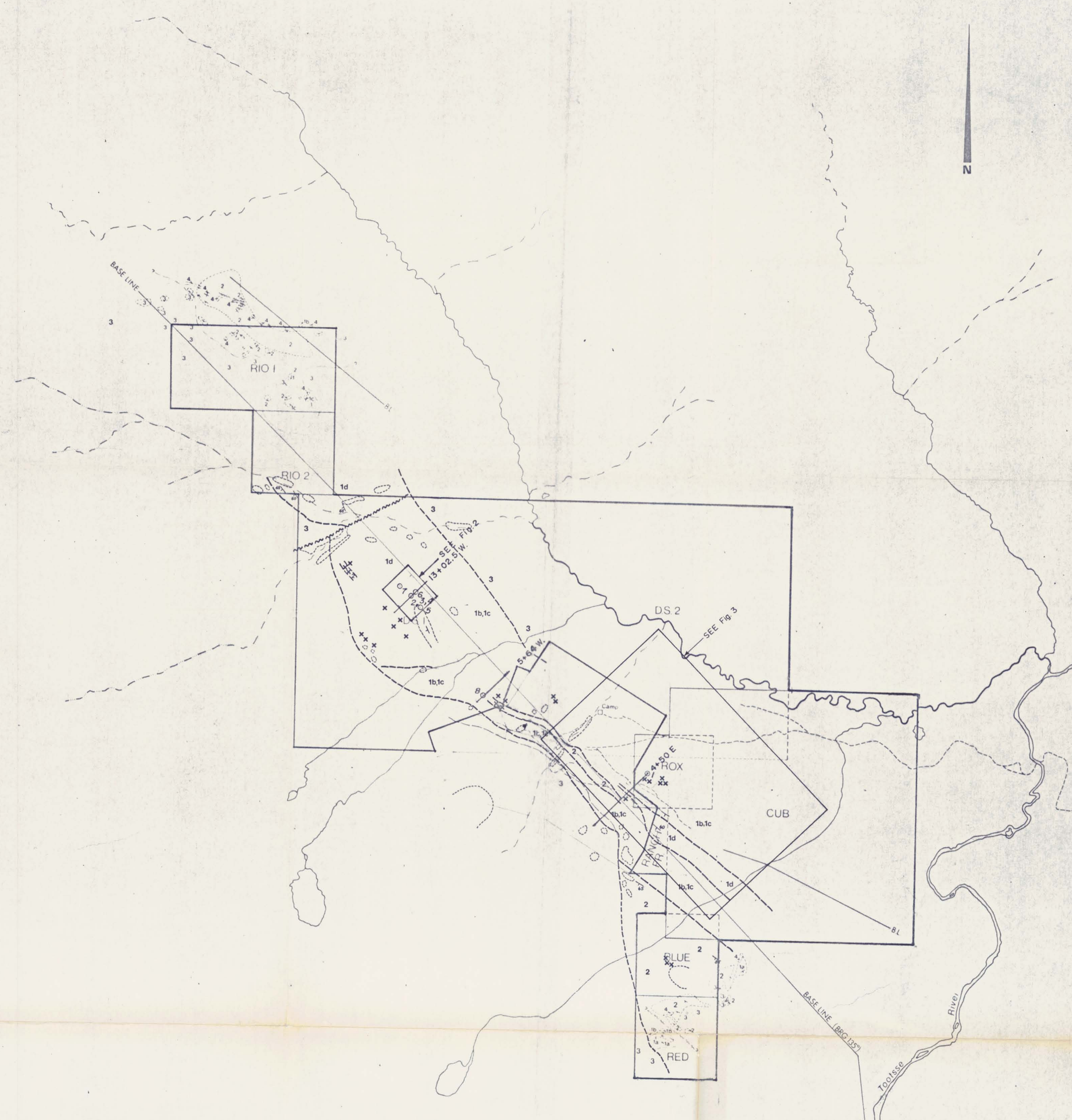
DRILLING CO: G. D. Diamond Drilling Co. Ltd.

ASSAYED BY: Acme Analytical Labs Ltd. #84-2731

FOOTAGE		DESCRIPTION	SAMPLE NO.	METRES		LENGTH m.	ASSAYS				
FROM	TO			FROM	TO		O.P.T. Au.	O.P.T. Ag.	%Pb.	%Zn.	%Cu.
0.0	5.0	SULPHIDE MINERALIZATION Galena-sphalerite mineralization as discrete fg. - cg. (up to 1/8") disseminations and discontinuous laminae parallel to crude foliation at 38-45° to core axis. Most common c.a. is 42-43°. Zone highly siliceous with local response to Hcl. (Silicified limestone with minor calcite in fractures) weak to moderate limonite staining. 0 - 2" - massive amber sphalerite ) 2" - 13" - siliceous zone, 15% Sph. near top ) decreasing to 1-2%, minor galena ) throughout ) 13" - 30" - foliated, 1-3% combined galena/ sphalerite ) 30" - 36" - foliated, fg. black sulph?, ga/sph ) as above ) 36" - 50" - siliceous zone, up to 5% sphalerite ) 50" - 60" - siliceous zone, shattered and oxidized, minor sulph. )									
			2610	0.0	0.76	0.76	.001	1.29	4.09	6.91	
			2611	0.76	1.52	0.76	.001	0.60	1.20	2.98	
5.0	25.0	Phyllite; mottled and crudely foliated lt. grey to buff to greenish, sericitized.		1.52	7.62						
	25.0	End.			7.62						
		Assay Average (0 to 5 feet).		0.0	1.52	1.52	.001	0.95	2.64	4.94	







LEGEND

- 4 Gabbroic dyke or volcaniclastics
- 3 Biotite granite (Cassiar intrusive) and/or biotite quartz monzonite
- 2 Limestone
- 1a Limy, siltstone
- 1b Argillaceous black sediments
- 1c Phyllite
- 1d Quartzite
- Rubble
- Outcrop
- Contact
- Fault
- Bedding
- Mineralized float
- NQ Hole 1984



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

13,376

SOVEREIGN METALS CORPORATION		
CUB PROPERTY		
1984 DIAMOND DRILLING		
LIARD M.D.B.C.		
DATE	April, 1984	SCALE
		FIG. 1

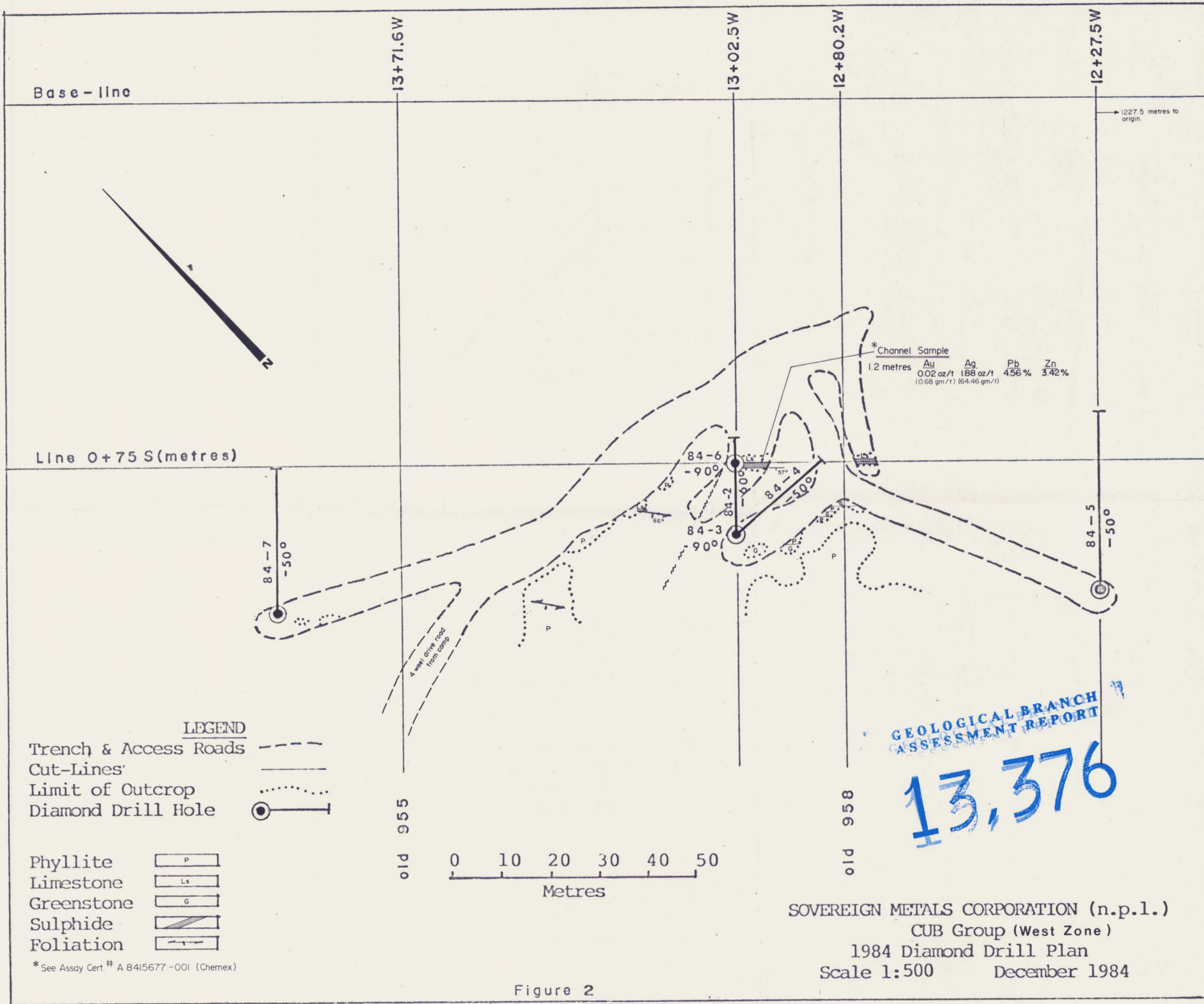
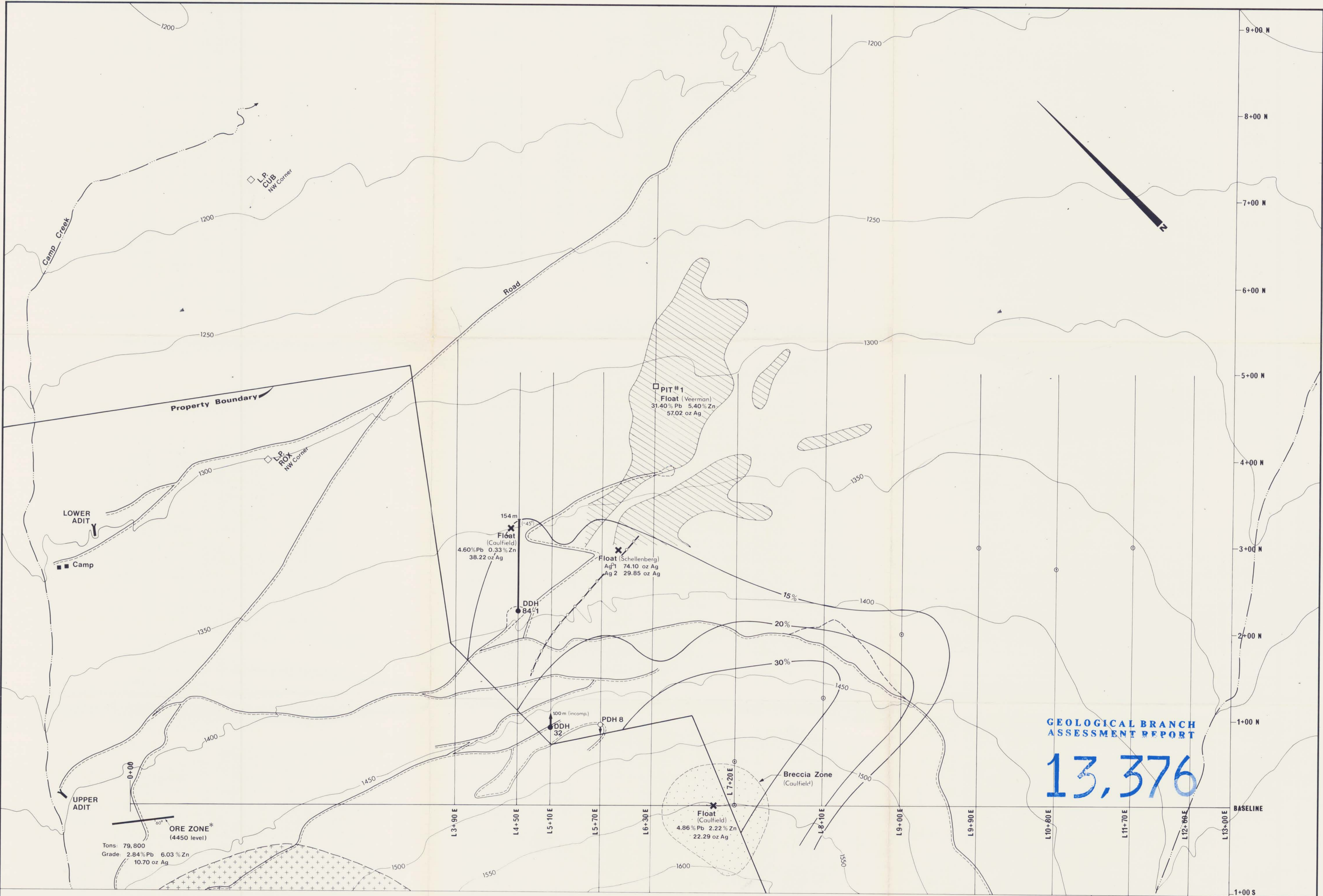


Figure 2



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

13,376

SOVEREIGN METALS CORP.

**CUB GROUP**  
MIDWAY AREA  
East Zone  
1984 DRILLING & SURVEY DATA

LIARD M.D. BC. NTS 104 O 15E /16W

DATE: FEBRUARY 1985 SCALE: 1:2000 FIG. 3

\* Measured and indicated reserve  
Chapman, Wood & Griswold - 1974