REPORT ON

BARB 1 to 15 MINERAL CLAIMS

WATSON LAKE M.D., Y.T. 105 H/6

prepared for

SOVEREIGN METALS CORPORATION (N.P.L.)

by

Charles K. Ikona P.Eng.

Vancouver, B.C.

July 8, 1977

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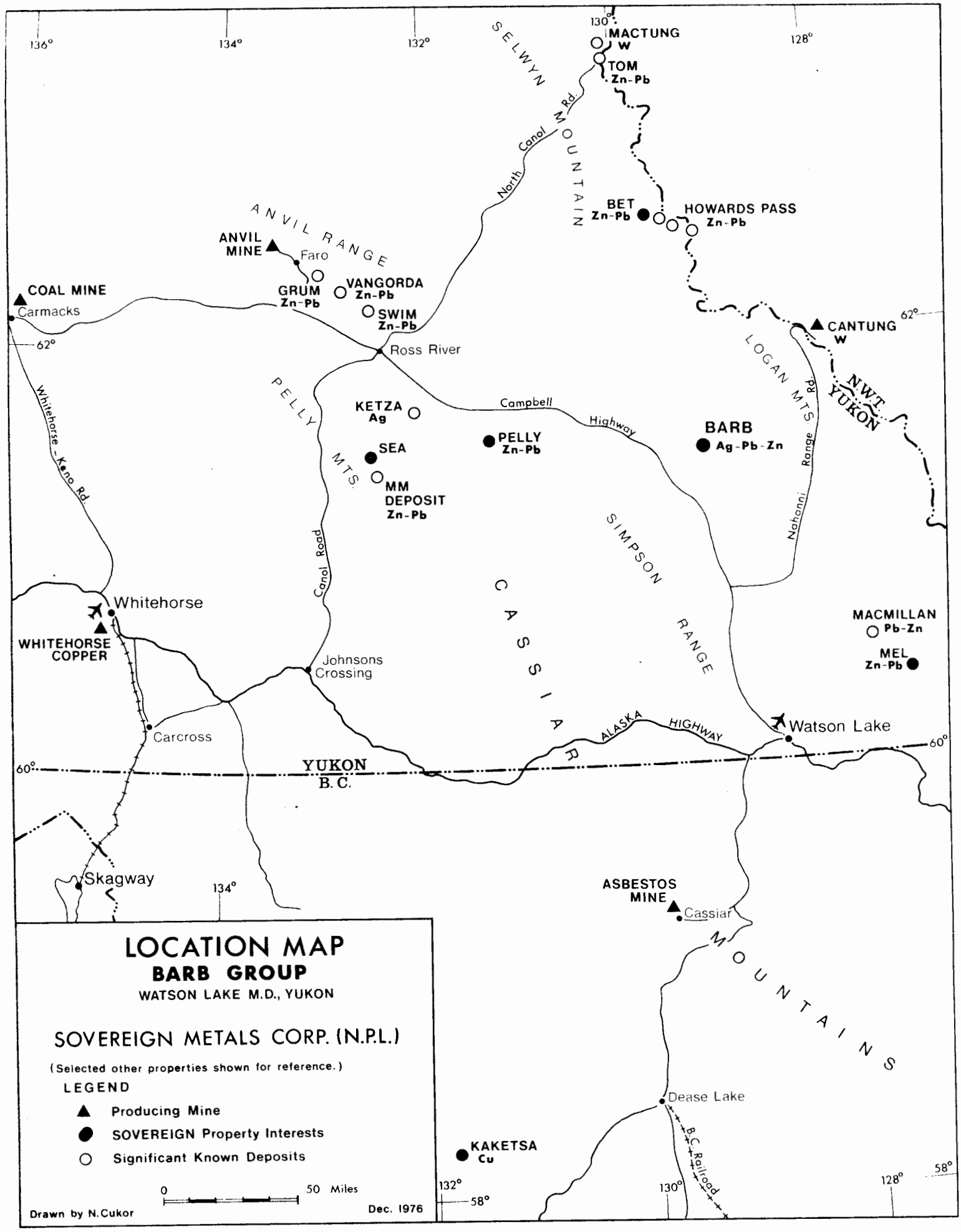


LOCATION MAP
BARB GROUP
WATSON LAKE M.D., YUKON

SOVEREIGN METALS CORP. (N.P.L.)

(Selected other properties shown for reference.)

LEGEND

- ▲ Producing Mine
- ● SOVEREIGN Property Interests
- ○ Significant Known Deposits

0 50 Miles

Drawn by N.Cukor

Dec. 1976

INTRODUCTION

The Barb Group of mineral claims as described below cover an occurence of sulphide mineralization now considered to be stratum controlled. The deposit is located on the East shore of the East arm of Frances Lake in the Yukon Territory and was previously known as the Matt Berry Prospect.

The author is advised that Sovereign Metals Corp. (N.P.L.) has the right to purchase an undivided 100% interest in these claims, and has examined documents to this effect.

This report is intended to summarize the available information on the property and recommends a programme of additional diamond drilling to upgrade the classification of existing preliminary estimates.

The basis of the report is data made available by Sovereign Metals Corp. and information obtained during a personal examination on June 12, 1977.

CLAIMS

An examination of the property, conducted on June 12, 1977 revealed that the Barb 1-8 claims were located to the south of the plotted position as given on claim map 105 H-6. Further investigation of the area and an examination of drill sites and survey grids provided no evidence of any valid or subsisting claims covering the subject property. Sovereign personnel under the writer's supervision located the Barb 9 and 10 claims as shown on the attached Figure 2. Additional staking was recommended. The holdings thus described are located in the Watson Lake Mining District and consist of the following mineral claims: -

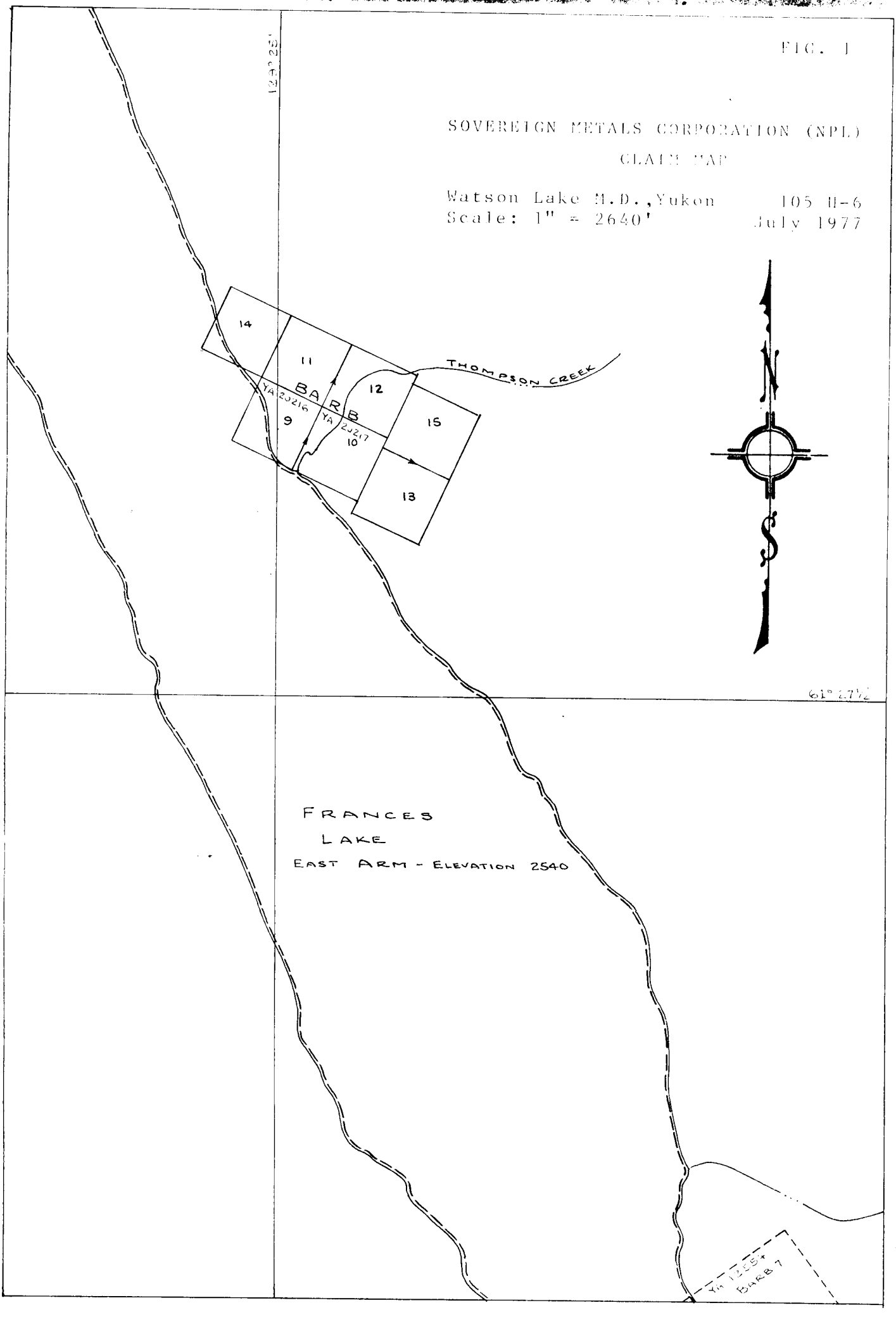
Claim Name	Recording Date	Grant No.
Barb 1-8	March 24, 1977	YA 12548 - 55 incl.
Barb 9 & 10	June 13, 1977	YA 20216 & 17
Barb 11-15	June 27, 1977	YA 20234 - 38 incl.

FIG. 1

SOVEREIGN METALS CORPORATION (NPL)

CLAIM MAP

Watson Lake M.D., Yukon — 105 H-6
Scale: 1" = 2640' — July 1977



LOCATION AND ACCESS

The Barb Claims are located on the East shore of the East arm of Frances Lake and centered on Thompson Creek. Approximate co-ordinates are Latitude 61° 27½' North and Longitude 129° 25' West. Elevations on the property range from 2540 (Lake datum) to about 3000 A.S.L. along a gentle to moderate west facing slope. Thompson Creek has caused a steeply incised valley which cuts the area of interest.

Access to the property is by float plane from the village of Watson Lake some 100 miles to the south or by highway to Frances Lake and thence some 35 miles by boat to the site. Road access would require the construction of some 18 miles of highway to link with the Campbell highway at a point north of Frances Lake.

HISTORY

The original discovery of silver-lead-zinc was made on the claims in the late 1930's and was prospected for Cominco in 1943. The property was later hand trenched and sampled by Datlaska Mines Ltd. in the early 1960's. In 1966 Matt Berry Mines Ltd. was formed to develop the showing. A programme of hand trenching and prospecting was undertaken in the vicinity of a mineralized outcrop in the Thompson Creek Canyon, followed by a drilling programme of 2,120 feet. During July 1968, an EM 16 survey and a geochemical survey were conducted. From November, 1968, to May, 1969, an additional 4,200 feet were drilled. In June, 1969, a geophysical turam electromagnetic survey was conducted over about 500 acres which included the area previously drilled and surveyed. During late 1969 and early 1970 there was an additional 1,349 feet drilled.

Under a working agreement with Canadian Nickel Company Limited and Metallgesellschaft Canada Limited in 1970, an additional 1,282 feet of diamond drilling was done on the northwesterly extension of the zone.

A total of 8,823 feet of diamond drilling has been completed on the zone.

New Joburke Explorations held an option on the property in 1973 and in 1974 Cyprus Anvil Mining Corporation under an option agreement completed a gravity survey over the area.

The property came open in the spring of 1977 and was staked by the present vendors.

REGIONAL GEOLOGY

The area has been mapped by the Geological Survey of Canada and is presented on map 6-1966 Frances Lake N.T.S. 105 H at a scale of 1 inch to 4 miles and on map 1948 A Department of Mines and Technical Surveys at a scale of 1 inch to 6,000 feet.

The geology in the region consists of a series of phyllites, quartz-sericite schists, hornfels and calc-phyllites, of probable Devonian/Mississippian age which have been intruded to the west by acid intrusives of possible cretaceous age.

Regional faulting in the area is extensive with major E - W striking faults dipping steeply to the North and showing horizontal movement, south section east. Less pronounced is a set of NW - SE trending faults which are presumed to be also steeply dipping.

PROPERTY GEOLOGY AND MINERALIZATION

The property is underlain by dark grey to black phyllites. In general this formation strikes NW - SE and dips Northeast at 35 - 45 degrees.

The phyllites are in part banded and siliceous with foliation present and usually discordant to the bedding planes.

The phyllites are divided into two units separated by a layer of Quartz sericite schist approximately 150 feet thick. The lower of these two phyllite units has been referred to as the Matt Berry Zone and contains the known mineralization on the property. This mineralization is probably strata bound and thus parallel to the bedding. Attitudes established by drilling indicate a northwest to north strike with an eastery dip of between 20 and 37 degrees.

A series of East - West striking normal faults have transected this area and have displaced the mineralized horizons.

The principal minerals of interest are galena and sphalerite which occur in one to three beds within a 25 to 30 feet thick section above a lithologic change in the host formation.

POTENTIAL RESERVES

A preliminary estimate of the tonnage and grade of the upper sulphide "band" within the area drilled is given in the attached tables.

Until the nature of the mineralized ground is determined by trenching or explored by underground workings it is the writer's opinion that these estimates be considered as "Inferred Ore Reserves."

Poor core recovery, lack of assay data for waste? Bands within the zone and incomplete data on minor element content cause a negative bias to the calculations. It is however, apparent that in excess of 500,000 tons of ore grading 2 to 4 ounces of silver per ton with 10% combined lead-zinc has been inferred over the strike length explored to date. No evidence of any diminuation of grade or thickness at depth is revealed by these data nor has the zone been delimited along strike. Potential to the southeast appears low and would be accorded a relatively low exploration priority.

The possibility of increasing the presently inferred tonnage by several orders of magnitude is not unlikely. An upward revision in the average grade to 4 - 5 oz. Ag./T and 15% Pb. + Zn. is also a distinct possibility.

RECOMMENDED PROGRAMME

A programme of trenching and diamond drilling to explore the zone on strike and to a uniform depth is recommended. An early objective would be confirmation that 500,000 tons or more of readily mineable ore exists within the known structures..

Drilling should be preceded by the construction of access roads to all required drill sites. NQ drilling equipment and provision for use of drilling fluids is regarded as essential to insure completion and adequate core recovery.

A short adit or decline would assist in determining the nature of the zone and should be completed following the initial drilling stage.

ESTIMATED COSTS

Stage I (Firm)

Camp construction, mobilization, logistics, Roads, Drill sites and trenching: -	$ 10,000
JD450 dozer or equivalent for 250 hours @ $40.	10,000
Labour, supplies and equipment rentals	5,000
2500 Feet of NQW diamond drilling	50,000
Engineering and Supervision	10,000
Overhead, Fees, Office Expense	5,000
Contingency Allowance (10%)	10,000
Recommended Budget	$100,000

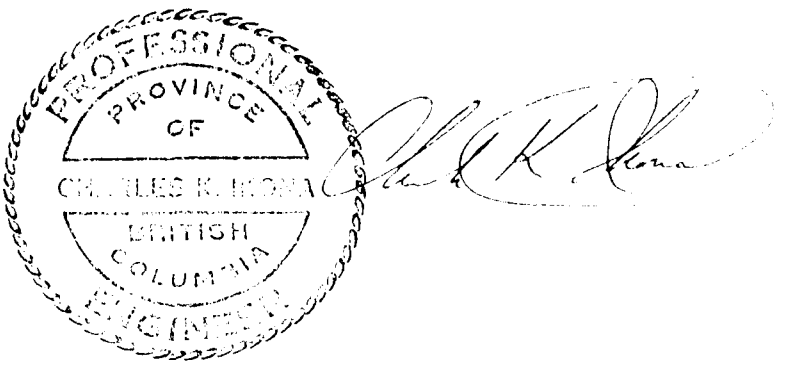
Stage 2 (Contingent of Stage I)

Drilling, 5000 ft. @ $20./ft.	$100,000
Underground Development 1000 ft. @ $100./ft.	100,000
Supervision, Overhead, logistics	50,000
	$250,000

CONCLUSIONS

The Barb Claims contain drill indicated reserves of up to ½ million tons of ore grade mineralization with additional potential. Consequently an exploration programme of diamond drilling as presented in the previous section is warranted on the property.

Charles K. Ikona, P.Eng.



ENGINEERS CERTIFICATE

I, Charles K. Ikona, of 2614 St. Johns Street, Port Moody in the Province of British Columbia do hereby certify that:

1) I am a consulting Mining Engineer with offices at 610 - 850 West Hastings St., Vancouver, B.C.

2) I am a graduate of the University of British Columbia with a degree in Mining Engineering.

3) I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

4) This report is based on data supplied to me by Sovereign Metals Corporation (N.P.L.) and on a personal inspection of the property by myself on June 12, 1977.

5) I have no interest in the Barb claim group or in the securities of Sovereign Metals Corporation (N.P.L.) nor do I expect to receive or acquire any such interests.

Dated at Vancouver, B.C.
July 8, 1977

Charles K. Ikona, P.Eng.

Bibliography

Roots, E.F. (1953) Green, L.H. & Roddick, J.A. (1960) Blusson, S.L. (1962 & 1965)	Map 6 - 1966 Geological Survey of Canada
Willcox, J.A.	Report on Matt Berry Mines Ltd. June 20, 1966.
Archer, A.R.	Geological Evaluation on Matt Berry Mines Ltd., June 1969.
Baird, Jon G. (1969)	Report on a Turam Electromagnetic Survey, Frances Lake area, Seigel Associates Ltd.
Dundas, T.R. (1970)	Geophysical Orientation Survey for Canico-Metall-Matt Berry Joint Venture, Frances Lake Area. Kenting Earth Sciences.
Sturm, A.G. (1970)	Report on a Geochemical Orientation and Stream Sediment Survey, Frances Lake area, Yukon, Terr. Kenting Earth Sciences.
Thalenhorst, H. (1970)	Geological Report, on Mineral Claims, Matt-Jim-Berry-Lap-Apex-Don Joint Venture, Frances Lake Area, Yukon September and October, 1970.
Heenan, P.R. (1973)	Report on Matt Berry Property for New Joburke Explorations Ltd.
Walcott, P.E. (1975)	Report on Gravity Survey of Matt Berry Prospect.
Annis, R.C. & Cranstone, D.A. (1976) Mineral Development Sector (EMR)	A survey of known mineral deposits in Canada that are not being mined.

TABLE 1

Diamond Drill data as used in the preparation of contours and subsequent tonnage estimates. See notes following this table.

Hole Number	Location of Collar			Attitude & Length					Zone	F.W.@	H.C.	V.C.	F.W. Elev.
	Lat.	Dep.	Elev.	Brg.	Dip	Lgt.	H.C.	V.C.					
1	(10+35S)	(0+20E)	2625	252°	-30°	166.0	143.8	83.0	3.5' @ 20.2u.	43.5	37.7	21.7	2603.3
									2.0' @ 81.8u.	68.0	58.9	34.0	2591.0
2	(10+35S)	(0+20E)	2625	252°	-60°	122.0	61.0	105.7	2.0' @ 27.1u.	40.0	20.0	34.6	2590.4
									5.0' @ 37.2u.	62.0	31.0	53.7	2571.3
3	(10+35S)	(0+20E)	2625	--	-90°	71.0	--	--	7.5' @ 9.7u.	48.5	--	48.5	2576.5
									1.0' @ 17.0u.	65.5	--	65.5	2559.5
4	(10+35S)	(0+20E)	2625	227°	-60°	141.0	70.5	122.1	1.0' @ 20.7u.	37.0	18.5	32.0	2593.0
									3.0' @ 19.3u.	45.5	22.7	39.4	2585.6
									2.0' @ 23.1u.	57.0	28.5	49.4	2575.6
5	(10+35S)	(0+20E)	2625	227°	-30°	93.0	80.5	46.5	8.0' @ 9.0u.	47.0	40.7	23.5	2601.5
									5.0' @ 13.2u.	63.0	54.6	31.5	2593.5
6	(11+35S)	(1+00W)	2655	251°	-60°	148.0	74.0	128.2	3.0' @ 24.5u.	37.0	18.5	32.0	2623.0
7A	(12+10S)	(0+40W)	2670	251°	-60°	141.0	70.5	122.1	11.5' @ 25.5u.	97.5	48.7	84.4	2585.6
8	(13+90S)	(1+30W)	2660	251°	-60°	181.0	90.5	156.7	NIL	--	--	--	--
9A	(13+80S)	(0+50W)	2685	225°	-70°	129.0	44.1	121.2	1.0' @ 24.6u.	62.5	21.4	58.7	2626.3
									2.0' @ 18.3u.	79.0	27.0	74.2	2610.8
									4.5' @ 65.7u.	95.0	32.5	89.3	2595.7
10	(13+45S)	(0+85E)	2705	251°	-60°	248.0	124.0	214.8	10.0' @ 10.8u.	181.0	90.5	156.7	2548.3
									1.5' @ 34.8u.	204.0	102.0	176.7	2528.3
11	(8+50S)	(0+80E)	2605	252°	-40°	194.0	148.6	124.7	Tr.	67.0	51.3	43.1	2561.9
									Tr.	79.0	60.5	50.8	2554.2
12	(8+50S)	(0+80E)	2605	252°	-60°	100.0	50.0	86.6	2.5' @ 9.5u.	81.0	40.5	70.1	2534.9
13	(6+40S)	(1+90E)	2635	266°	-60°	279.0	139.5	241.6	NIL	--	--	--	--

TABLE 1 (con't.)

Hole Number	Location of Collar Lat.	Dep.	Elev.	Attitude & Length Brg.	Dip	Lgt.	H.C.	V.C.	Zone	F.W.@	H.C.	V.C.	F.W. Elev.
14	(15+20S)	(0+50E)	2725	--	-90°	343.0	--	343.0	7.5' @ 33.9u.	258.0	--	258.0	2467.0
15	(16+06S)	(0+10E)	2725	--	-90°	421.0	--	421.0	4.8' @ 14.9u.	196.3	--	196.3	2528.7
16	(17+34S)	(0+00)	2745	--	-90°	149.0	--	149.0	9.0' @ 12.6u.	98.0	--	98.0	2647.0
17	(17+34S)	(0+00)	2745	204°	-60°	115.0	57.5	99.6	9.5' @ 10.4u.	72.5	36.2	62.8	2682.2
18	(19+00S) 9700N	(0+75E) 10850E	2790	--	-90°	331.0	--	331.0	5' @ 2.3u.	189.5	--	189.5	2600.5
									Tr.	246.0	--	246.0	2544.0
19	(21+50S) 9601N	(0+75E) 11081E	2816.7	--	-90°	407.0	--	407.0	2' @ 0.8u.	110.0	--	110.0	2706.7
									3' @ 2.3u.	120.0	--	120.0	2696.7
									6' @ 1.1u.	152.1	--	152.1	2664.6
20	(20+00S) 9800N	(2+30E) 11017E	2814.6	--	-90°	433.0	--	433.0	Tr.	251.4	--	251.4	2563.2
									Tr.	320.6	--	320.6	2494.0
									Tr.	329.0	--	329.0	2485.6
21	(18+30S) 9910N	(2+75E) 10870E	2815	204°	-75°	340.0	88.0	328.4	Tr.	329.0	85.1	317.8	2497.2
22	(16+00S) 9941N	(2+00E) 10638E	2778.2	204°	-75°	503.0	130.2	485.9	2.3' @ 24.1u.	330.0	85.4	318.8	2459.4
									7.9' @ 19.1u.	347.5	89.9	335.6	2442.5
									6.0' @ 8.5u.	367.0	95.0	354.5	2423.7
23	(14+00S) 10028N	(2+00E) 10448E	2726.6	219°	-75°	425.0	110.0	410.5	3.5' @ 4.9u.	276.0	71.4	266.6	2460.0
									3.8' @ 30.0u.	289.8	75.0	279.9	2446.7
24	(14+00S) 10028N	(2+00E) 10448E	2726.6	--	-90°	409.0	--	--	3.9' @ 11.2u.	289.3	--	289.8	2436.8
									5.2' @ 6.8u.	308.3	--	308.3	2418.3
25	(15+90S) 10103N	(3+70E) 10695E	2772.0	203°	-70°	500.0	171.0	469.8	6.0' @ 11.0u.	404.0	138.2	379.6	2392.4
									7.0' @ 21.6u.	467.0	159.7	438.8	2333.2

TABLE 1 (con't.)

Hole Number	Location of Collar Lat.	Dep.	Elev.	Attitude & Length Brg.	Dip	Lgt.	H.C.	V.C.	Zone	F.W.@	H.C.	V.C.	F.W. Elev.
DATA SCALED FROM OLD MAPS OR TAKEN FROM REPORT BY PR.R. HEENAN P.ENG.													
26A	(13+37S)	(4+25E)	2690	161°	-70°	492.0	168.3	462.3	6.5' @ 7.4u.	428.5	146.6	402.7	2287.3
28	(12+00S)	(1+77N)	2665	204°	-70°	328.0	112.2	308.2	6.0' @16.0u.	164.0	56.1	154.1	2510.9
29	(7+43S)	(3+10N)	2665	204°	-70°	335.0	114.6	314.8	6.5' @ 9.4u.	300.0	102.6	281.9	2383.1
30	(2+00S)	(3+82N)	2620	204°	-70°	141.0	48.2	132.5	7.0' @11.1u.	96.0	32.8	90.2	2529.8

Notes: The zone identification gives the drill intercept and a summary of grade information based on the assumption that oz. Ag./T = 1% lead or zinc in contained metal value. ie. an ounce of silver is currently about $4.50 Can.

1% or 20 lbs. of lead @ $0.31 = $6.20 Can.
1% or 20 lbs. of zinc @ $0.355 = $7.10 Can.

The net realized value of these commodities as sold in concentrate form is however more nearly equal. For purposes of this estimate it is considered that a minable width of 6 unit ($27.00) ore is of commercial significance.

TABLE 2

ASSAY AVERAGES AND GRADE CALCULATIONS

GRADE CALCULATION - BLOCK 1

HOLE NO.	FROM	TO	FT'G.	Oz. Ag.	%Pb.	%Zn.	WEIGHT
1	66.0	68.0	2.0	21.4	45.8	14.5	
	* 6'/Cos 34°		(7.2)	5.9	12.7	4.0	1
2	57.0	62.0	5.0	7.9	16.3	13.0	
	*		6.0	6.6	13.6	10.8	1
3	41.0	48.5	7.5	1.3	3.0	6.7	1
4	42.5	45.5	3.0	4.7	12.1	2.5	
	*		6.0	2.3	6.1	1.2	1
5	58.0	63.0	5.0	1.8	6.5	4.8	
	*		6.0	1.5	5.5	4.0	1
6	34.0	37.0	3.0	3.9	13.5	7.1	
	*		6.0	2.0	6.7	3.5	3
7A	86.0	97.0	11.5	4.6	7.6	13.3	5
9A	90.5	95.0	4.5	20.6	32.8	22.3	
	*		6.0	15.5	24.6	16.7	5
10	171.0	181.0	10.0	2.6	5.5	2.6	4
14	250.5	258.0	7.5	7.2	15.1	11.6	5
22	339.6	347.5	7.9	4.7	9.2	5.2	4
23	286	289.8	3.8	4.1	8.0	17.9	
	*		6.0	2.6	5.1	11.3	5
24	285.9	289.8	3.9	0.5	0.6	10.0	
	*		6.0	0.3	0.4	6.5	4
25	399.8	404.0	4.2	2.1	7.4	6.2	
	*		6.0	1.5	5.2	4.3	5
28	158.0	164.0	6.0	4.7	7.5	3.8	5
AVERAGE THICKNESS AND GRADE			(7.3)	4.69	8.93	7.98	

* Calculated grade over minimum 6 foot stratigraphic width.

TABLE 2 (con't.)

GRADE CALCULATION - BLOCK 2

HOLE NO.	FROM	TO	FT'G.	Oz. Ag.	%Pb.	%Zn.	WEIGHT
*11 (1)	-	79.0	6.0	-	-	-	1
12 (2)	78.5	81.0	2.5	2.9	3.0	3.6	
	75.0	81.0	6.0	1.2	1.2	1.5	1
26 A	422.0	428.5	6.5	0.6	3.2	3.5	8
28 (3)	158.0	164.0	6.0	4.7	7.5	3.8	5
29 (3)	293.5	300.0	6.5	1.9	4.5	3.0	5
AVERAGE THICKNESS AND GRADE (5)			(6.3)	2.0	4.3	3.2	20

Notes:
(1) 5% core recovery from 71.0 - 79.0 incl. 2" of massive sulphide.
(2) 75% core recovery from 78.5 - 81.0
(3) Drilled outside of block.
(4) Weight for average purposes only and adjusted to reflect area of influence, core recovery and presence of intervening faults.
(5) Low confidence is placed in this average. It is considered a reasonable minimum expectation for ground with the block boundary.

GRADE CALCULATION - BLOCK 3

HOLE NO.	FROM	TO	FT'G.	Oz. Ag.	%Pb.	%Zn.	WEIGHT
29	293.5	300.0	6.5	1.9	4.5	3.0	1
30	89.0	96.0	7.0	2.8	5.5	2.8	1
AVERAGE THICKNESS AND GRADE			(6.7)	2.3	5.0	2.9	

TABLE 3

TONNAGE CALCULATIONS

BLOCK 1

Area in plan by planimetric measurement: -
1450 (reading) x 150 (factor) = 217,500 square ft.
Average slope over block length = 24^{o}
Volume = 217,500 ÷ Cosine 24^{o} x 7.3 = 1.73 x 10^{6} cu. ft.
Using 9 $ft.^{3}$ per ton
Tonnage = 193,000 tons.

BLOCK 2

Calculated as above.
Planimetric measurement 1150; factor 150;
Average slope = 29^{o}; thickness = 6.3
Calculation 1150 x 150 x 6.3 ÷ Cosine 29^{o} x 9.0
Tonnage = 138,000 tons.

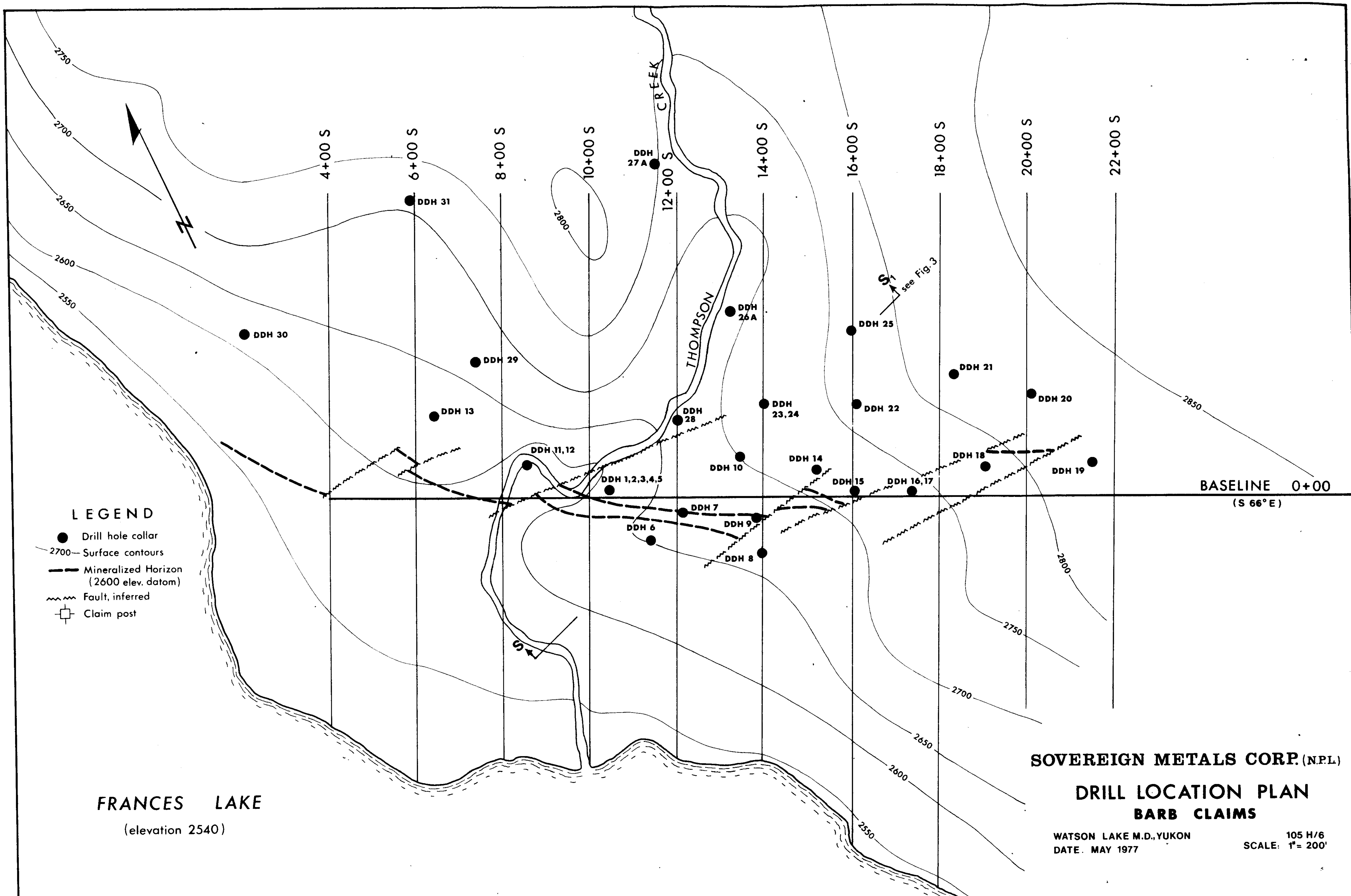
BLOCK 3

Calculated as above.
Planimetric measurement 1825; factor 150;
Average slope = $37\frac{1}{2}^{o}$; thickness = 6.7
Calculation 1825 x 150 x 6.7 ÷ Cosine $37\frac{1}{2}^{o}$ x 9.0
Tonnage = 257,000 tons

* SUMMARY OF TONNAGE AND GRADE ESTIMATES

	TONS	Oz. Ag./T	%Pb.	%Zn.
Block 1	193,000	4.7	8.9	8.0
Block 2	138,000	2.0	4.3	3.2
Block 3	257,000	2.3	5.0	2.9
Total	588,000	3.0	6.1	4.6

* For classification of above estimates, refer to text. (page 4 this report)


SOVEREIGN METALS CORP. (N.P.L.)
DRILL LOCATION PLAN
BARB CLAIMS
WATSON LAKE M.D., YUKON
DATE. MAY 1977
105 H/6
SCALE: 1"= 200'
FRANCES LAKE
(elevation 2540)
LEGEND
Drill hole collar
2700— Surface contours
Mineralized Horizon
(2600 elev. datom)
Fault, inferred
Claim post
BASELINE 0+00
(S 66° E)
THOMPSON
CREEK
4+00 S
6+00 S
8+00 S
10+00 S
12+00 S
14+00 S
16+00 S
18+00 S
20+00 S
22+00 S
DDH 27A
DDH 31
DDH 30
DDH 29
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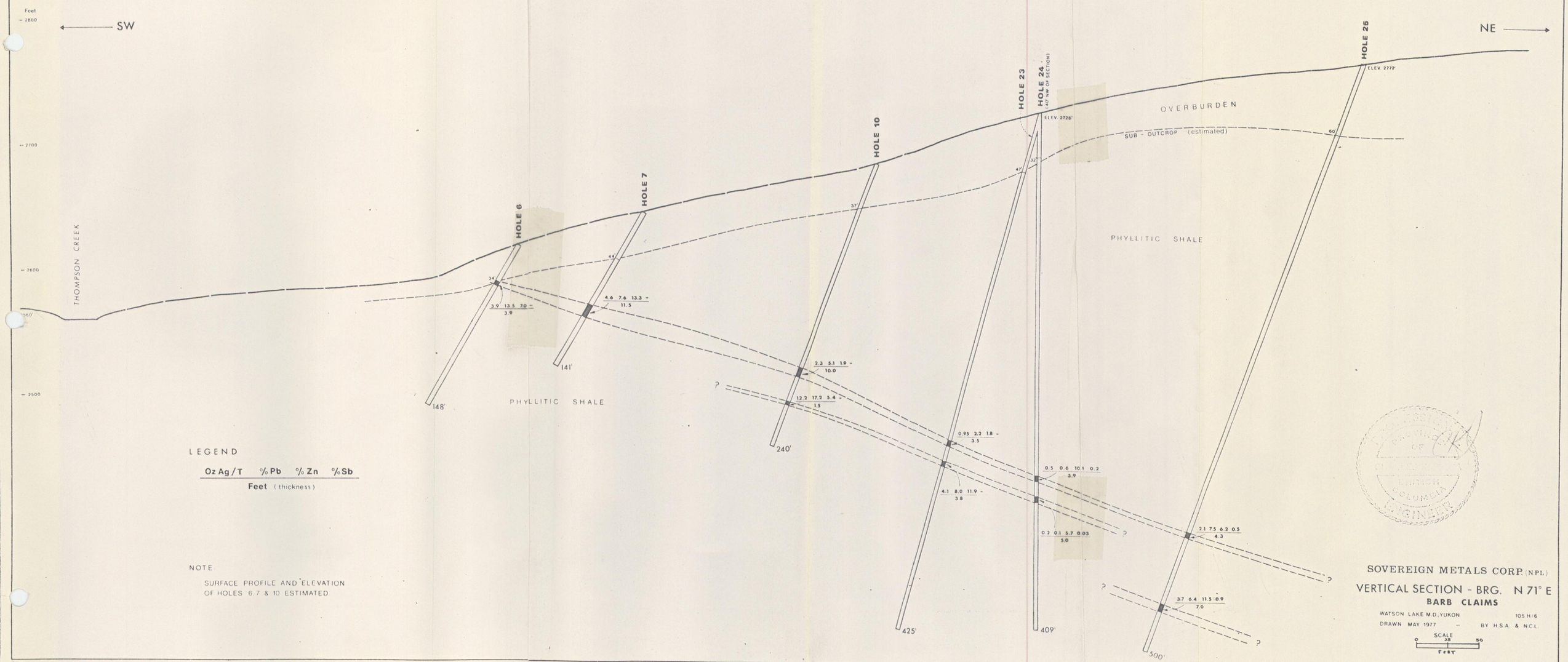
DDH 6
DDH 8
S1 see Fig.3
S
2850
2800
2750
2700
2650
2600
2550

Fig.2



LEGEND

Oz Ag/T | % Pb | % Zn | % Sb

Feet (thickness)

NOTE

SURFACE PROFILE AND ELEVATION OF HOLES 6, 7 & 10 ESTIMATED.

SOVEREIGN METALS CORP. (NPL)

VERTICAL SECTION - BRG. N 71° E

BARB CLAIMS

WATSON LAKE M.D., YUKON 105 H/6

DRAWN MAY 1977 — BY H.S.A. & N.C.L.

SCALE 0 25 50 FEET

To accompany a report by C.K. Ikona P.Eng.

SOVEREIGN METALS CORPORATION (N.P.L.)

BARB CLAIM GROUP - FRANCES LAKE

CONTOUR PLAN ON F.W. OF UPPER SULPHIDE BAND

Watson Lake M.D., Yukon

N.T.S. Reference 105 H-6

July 8, 1977

FIG. 4