

Watson Lake  
Mining Recorder

Filed  
April 1/82  
wl

ASSESSMENT REPORT



GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE  
STONEAXE 1 - 30 MINERAL CLAIMS

WATSON LAKE MINING DISTRICT  
YUKON TERRITORY

60°44' N 130°57' W  
N.T.S. 105 B-10/B-15

for

SEREM Ltd.

Report by: Michael A. Stammers, Geologist

Work Performed between July 20, 1981 and February 8, 1982.

Date of Report: February 1982

091009

This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
income only to the extent in the amount  
of \$ 9,000

for *P. Watson*  
Regional Manager, Exploration and  
Geological Services for Communities  
of Yukon Territory.

GEOLOGICAL AND GEOCHEMICAL REPORT

OF THE

GEONEX 1 - 56 MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

YUKON TERRITORY

60°44' N 130°57' W

N.T.S. 105 P-107-B-12

1981

SECRET

Report by: Michael A. Stammers, Geologist

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1. INTRODUCTION

The Stoneaxe 1-30 mineral claims are located 145 kilometres northwest of Watson Lake, Yukon, immediately south of Stoneaxe Lake. The claims were staked in July, 1981 to cover mineralized tungsten skarn showings discovered by Serem prospector David Coffin. Evaluation, using conventional geological, geochemical and prospecting techniques, was carried out during the 1981 field season.

Acquisition of this property is part of Serem Ltd.'s Cabin Creek Regional project in the Wolf Lake map area.

2. LIST OF CLAIMS (Figure 2)

<u>Claim Name</u>	<u>Grant Numbers</u>	<u>Expiry Date</u>
Stoneaxe 1-30 (incl)	YA66180-YA66209 (incl)	20 July 1982*

\* Application for certificate of work attached, to extend this date to 20 July 1985.

3. LOCATION AND ACCESS

The Stoneaxe 1-30 mineral claims are located 145 kilometres northwest of Watson Lake on Stoneaxe Lake at latitude  $60^{\circ}44'$  N and longitude  $130^{\circ}57'$  W.

Access to the claims is provided by float-equipped aircraft from Watson Lake to Stoneaxe Lake. During 1981, the claims were worked from the Team claims' basecamp on Gravel Creek, using a Hughes 500D helicopter.

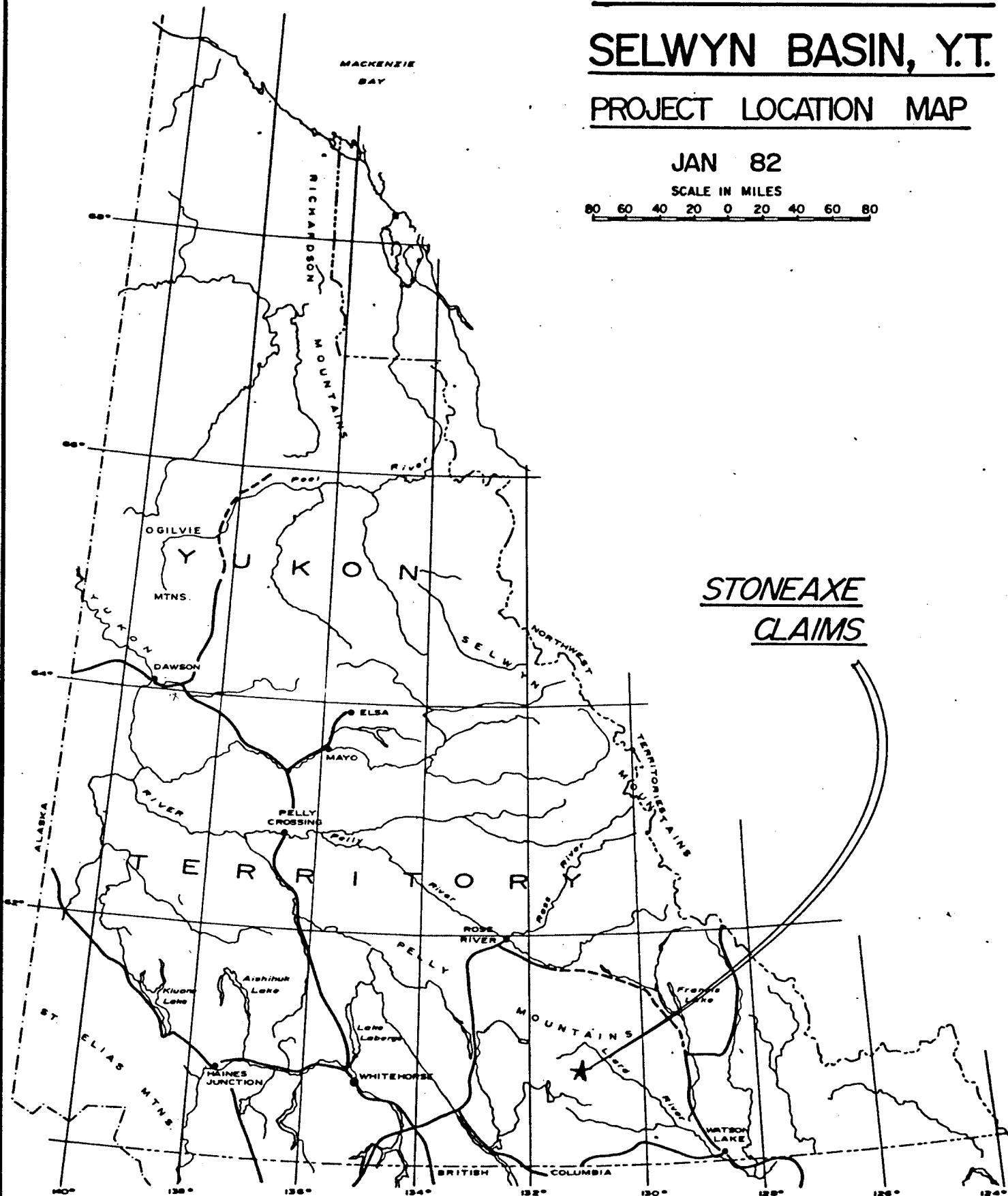
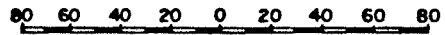
# SEREM LTD.

## SELWYN BASIN, Y.T.

### PROJECT LOCATION MAP

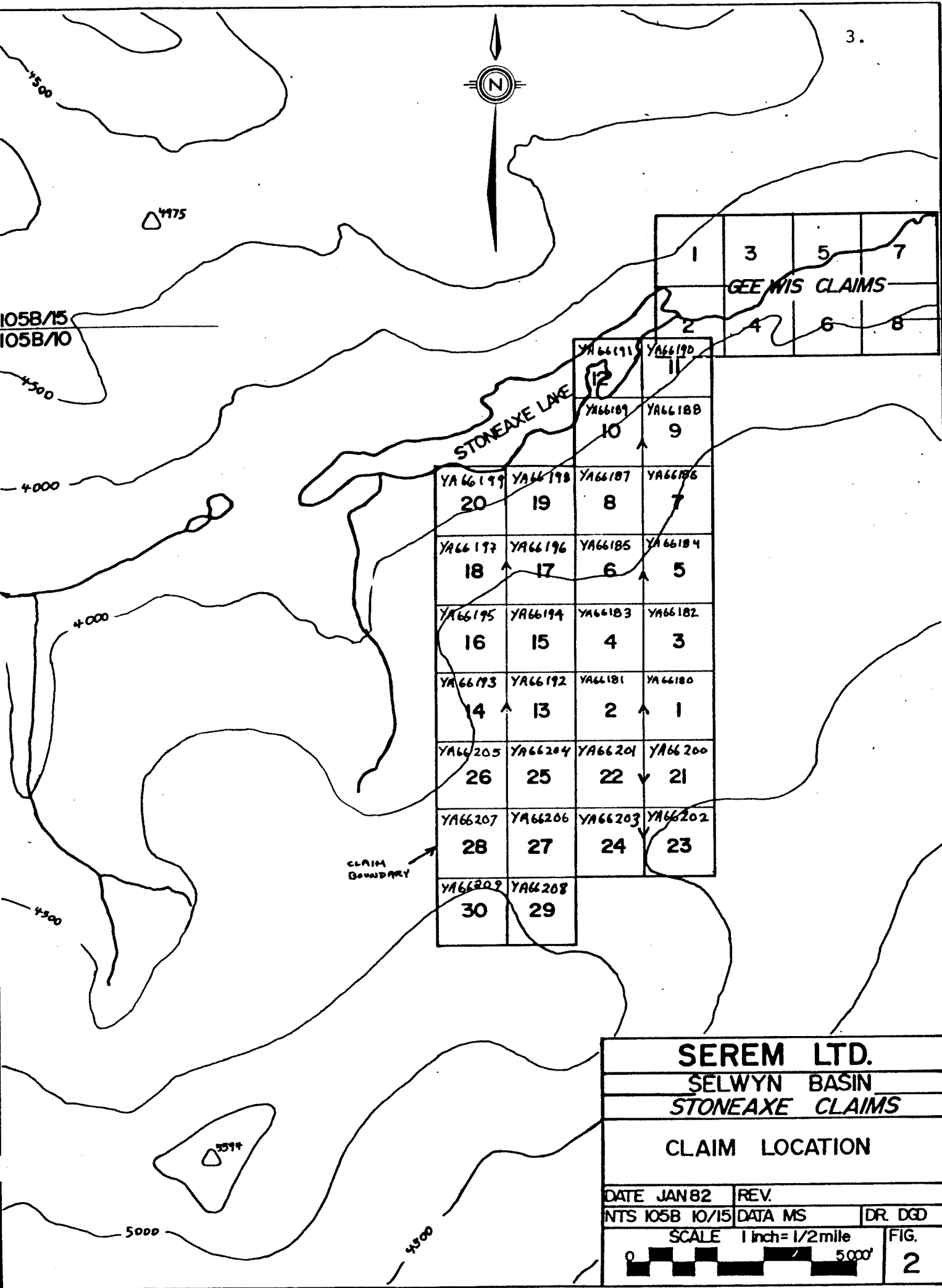
JAN 82

SCALE IN MILES



STONEAXE  
CLAIMS

FIGURE ONE



1	3	5	7
GEE WIS CLAIMS			
2	4	6	8

YA 66191	YA 66190		
12	11		
YA 66189	YA 66188		
10	9		
YA 66199	YA 66198	YA 66187	YA 66186
20	19	8	7
YA 66197	YA 66196	YA 66185	YA 66184
18	17	6	5
YA 66195	YA 66194	YA 66183	YA 66182
16	15	4	3
YA 66193	YA 66192	YA 66181	YA 66180
14	13	2	1
YA 66205	YA 66204	YA 66201	YA 66200
26	25	22	21
YA 66207	YA 66206	YA 66203	YA 66202
28	27	24	23
YA 66209	YA 66208		
30	29		

CLAIM BOUNDARY

**SEREM LTD.**  
**SELWYN BASIN**  
**STONEAXE CLAIMS**

**CLAIM LOCATION**

DATE JAN 82    REV.  
 NTS 105B 10/15    DATA MS    DR. DGD

SCALE 1 inch = 1/2 mile    FIG. 2

#### 4. PHYSIOGRAPHY AND CLIMATE

Elevations on the Stoneaxe claims range from between 1189 and 1478 metres (3900 and 4850 feet) above sea level. Relief is moderate with the southern third of the property located above tree line. The property occupies the north facing slope between Stoneaxe Lake and the ridge to the south.

Outcrop in the area is very sparse in the northern forested area of the claim group and good above the tree line mark (1350 metres).

Climate in the Stoneaxe claims' area is characterized by short, warm summers and long, cold winters with light to moderate precipitation.

Wildlife in the area includes moose, caribou, wolf, black and grizzly bear.

#### 5. EXPLORATION HISTORY

Several mineral exploration companies and the Geological Survey of Canada have worked in the Stoneaxe Lake area since the mid-1950's. No claims have been recorded in the area previously.

Earlier, in the late 19th century, placer miners worked Sayyea, Cabin and Scurvy Creeks before moving on to the Klondike gold fields. Small amounts of fine gold were produced. During the astronomical rise in the price of gold two years ago, several placer leases were staked on the above mentioned creeks.

Serem Ltd. was active in the area in both 1980 and in 1981 from the neighbouring Team claims' base camp on Gravel Creek. The Stoneaxe 1-30 claims adjoin the Gee Wis 1-8 claims to the northeast and lie in close proximity to the Team 1-206 mineral claims, both groups held by Serem Ltd.

## 6. REGIONAL GEOLOGY

The regional geology is based on Geological Survey of Canada mapping by Poole, 1951-1955, and by Roddick and Green in 1950 (G.S.C. Map 10-1960).

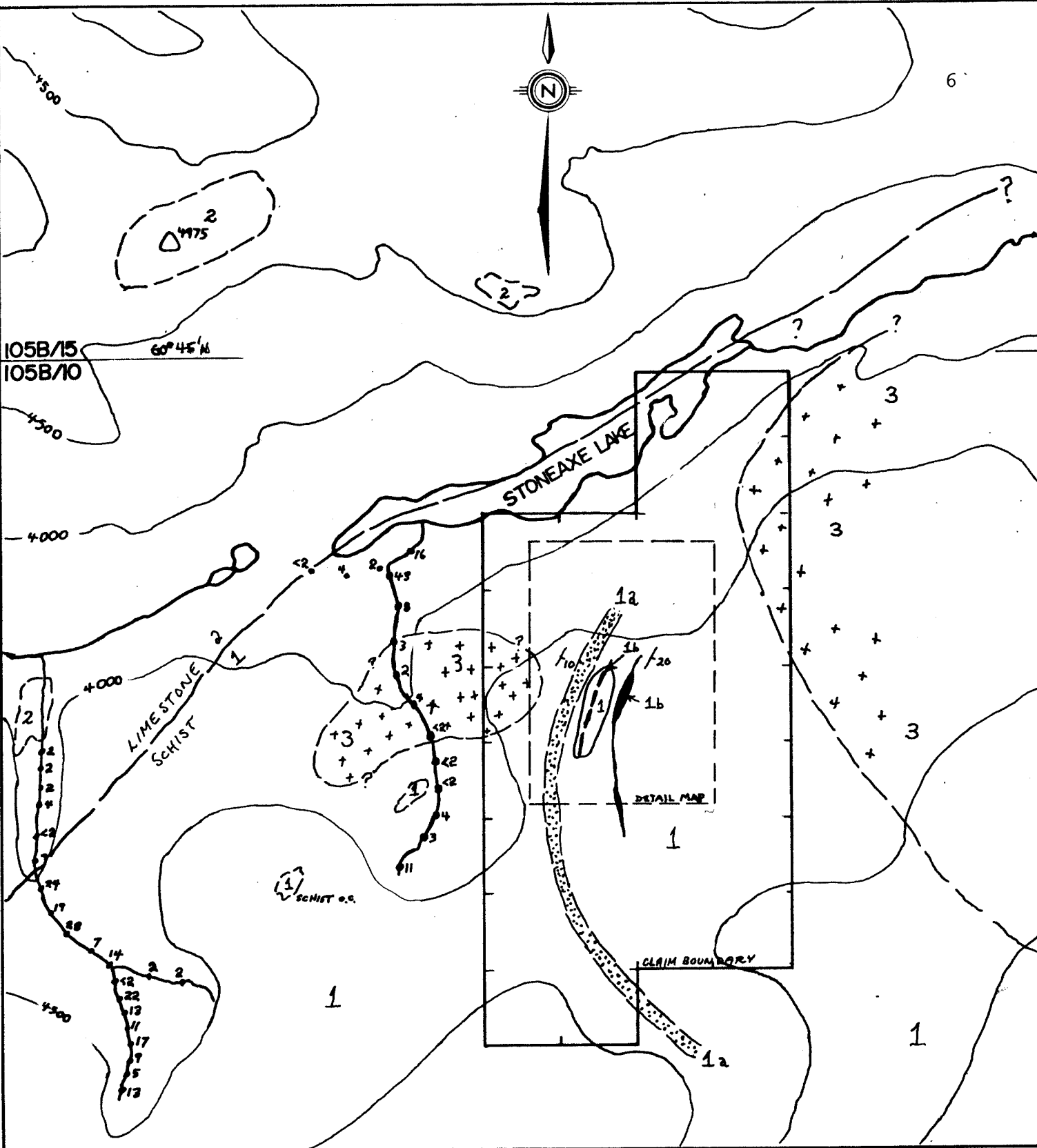
The Stoneaxe claims lie over the northwest contact between the Gravel Creek Stock and late Precambrian aged schist, metagrit, limestone and minor skarn.

The Gravel Creek stock is composed of mainly quartz monzonite to granodiorite and is an apparent satellitic pluton to the Cassiar Batholith located approximately 15 kilometres to the south.

The older metasedimentary rocks found on the property occupy a large part of the Wolf Lake map sheet, particularly near the northern Cassiar Batholith. Lower Cambrian carbonate stratigraphy is distributed widely north and west of the Stoneaxe claims area.

## 7. PROPERTY GEOLOGY (Figures 3 and 4)

The Stoneaxe claims are underlain by a gently dipping sequence of metamorphic rocks including schist, minor metagrit and skarn. The contact with intrusive rocks of the Gravel Creek Stock lies on the eastern margin of the property.



**LITHOLOGY**

CRETACEOUS-JURASSIC GRAVEL CREEK STOCK

3 biotite-quartz monzonite to granodiorite

LOWER CAMBRIAN — not named

2 medium grey, thin bedded to massive limestone

HADRYNIAN TO LOWER CAMBRIAN "GRIT UNIT"

1 undivided metasedimentary rocks, mainly schist

1b garnet-diopside-scheelite skarn

1a coarse-grain, meta-grit or greywacke-conglomerate

**LEGEND**

— STRIKE & DIP

--- CONTACT known, inferred

○ LIMIT OF OUTCROP

/// SILT SAMPLE, ppm W

**SEREM LTD.**

**SELWYN BASIN**

**STONEAXE CLAIMS**

**AREA GEOLOGY & GEOCHEMISTRY**

DATE JAN 82	REV.
NTS 105B 10/15	DATA MS
DR. DGD	

SCALE 1 inch = 1/2 mile

0 5000'

FIG. 3

Rocks of the stock are generally composed of multiple phase, quartz monzonite to granodiorite and are altered locally to greisen and other "bleached" lithologies. Several large dikes and sill-like bodies lead from the main stock into the surrounding metasediments. These phases are thought to be responsible for skarnification and tungsten mineralization.

Skarn bodies are found along two main stratigraphic horizons and are highly irregular in thickness and lateral continuity. Thicknesses of skarn vary from less than 0.2 metres to a maximum of 7 metres. Skarn units appear to thicken to the north and pinch out southward. Calcareous sedimentary rocks or small lenticular limestone strata probably acted as the original host unit for the current skarn lithologies. The skarn is composed mainly of garnet-quartz, diopside and scheelite.

The schist is biotite and quartz-rich with only minor muscovite. Within the schist unit, a thick bed (15 metres) of coarse metamorphosed grit or fine-grained conglomerate occurs in a regular stratigraphic horizon.

Younger, Lower Cambrian carbonates outcrop extensively to the north and west of the claims area.

Schistosity and bedding trend approximately north to northeast with dips gentle to the southeast. The intrusive contact curves gently from northwest to northeast over the eastern claims area. A smaller plug, perhaps a later phase of the Gravel Creek stock, is exposed across 1000 metres in the western claims area.

## 8. MINERALIZATION

Based on their topographic location, the mineralized skarns have been arbitrarily divided into the "east zone" and the "western area" showings.

Scheelite mineralization is found in all skarn showings on the property. However, grades range from 0.001%  $WO_3$  up to 4.55%  $WO_3$ . Scheelite occurs as medium-grain disseminations and as coarse-grain crystal aggregates along fracture and bedding planes.

Minor sphalerite is associated with the scheelite in some showings. Chip samples were taken over all tungsten-skarn showings, regardless of visible grade. Most results are plotted on Figure 5 and complete results are listed in Table 1.

TABLE 1. Stoneaxe Claims - List of Results

Sample No.	Location	Type	Length	% WO <sub>3</sub>	% Zn
3751*	East Zone	Grab	--	0.039	0.19
3754*	"	Chip	5.0 m	0.038	0.06
3755*	"	Chip	3.0 m	0.002	0.08
3757*	"	Chip	12.0 m	0.015	0.08
3758*	"	Chip	7.0 m	<u>0.472</u>	0.10
3759*	"	Chip	8.0 m	0.001	0.08
3760	"	Chip	3.5 m	<u>0.200</u>	0.06
3761	"	Grab	3.0 m	<u>4.550</u>	0.46
3762	"	Chip	5.0 m	<u>0.110</u>	0.07
3763	"	Chip	2.5 m	<u>0.870</u>	0.04
3764	"	Chip	1.5 m	<u>0.235</u>	0.05
3765	"	Chip	1.5 m	0.085	0.05
3766	"	Chip	1.0 m	0.005	0.08
3767	Western Area	Chip	1.0 m	0.001	0.14
3768	"	Chip	1.0 m	0.063	0.07
3769	"	Chip	1.0 m	0.002	0.09
3770	"	Chip	0.6 m	0.050	0.09
3771	"	Chip	0.6 m	0.002	0.08
3772	"	Grab	--	0.001	0.06
3773	"	Chip	0.7 m	0.038	0.12
3774	"	Chip	1.2 m	<u>0.110</u>	0.22
3775	"	Chip	0.75 m	<u>0.113</u>	0.13
3776	"	Chip	0.75 m	<u>0.125</u>	0.14
3777	"	Chip	0.75 m	<u>0.110</u>	0.18
3778	"	Grab	--	0.001	0.10
3779	"	Chip	0.60 m	0.002	0.13
3780	"	Chip	0.50 m	0.038	0.15
3781	"	Chip	0.50 m	0.016	0.10
3782	"	Chip	1.0 m	0.005	0.20
3783	"	Chip	1.0 m	0.008	0.15
3784	"	Grab	4.0 m	0.001	0.07

.... Continued

TABLE 1. (Continued)

Sample No.	Location	Type	Length	% WO <sub>3</sub>	% Zn
3785	Western Area	Grab	4.0 m	0.021	0.10
3786	"	Grab	4.0 m	<u>0.895</u>	0.06
3787	"	Grab	4.0 m	0.073	0.13
3788	"	Chip	1.2 m	0.008	0.18
3789	East Zone	Chip	1.2 m	0.001	0.07
3790	"	Chip	0.85 m	0.001	0.04
3791	"	Chip	0.75 m	0.001	0.04
3792	"	Chip	0.95 m	0.002	0.04
3793	"	Chip	1.0 m	0.001	0.05
3794	"	Chip	1.0 m	0.001	0.12
3795	"	Chip	1.2 m	<u>1.01</u>	0.20
3796	"	Chip	0.75 m	0.001	0.10
3797	"	Chip	1.2 m	0.001	0.12
3798	"	Chip	1.3 m	0.120	0.05
3799	"	Chip	1.0 m	0.026	0.04
3800	"	Chip	1.2 m	0.001	0.03
3801	"	Chip	1.2 m	<u>0.440</u>	0.25
3802	Western Area	Chip	1.0 m	0.003	0.38
3803	"	Grab	0.3 m	0.018	0.09
3804	"	Grab	0.3 m	0.021	0.06
3805	"	Chip	0.45 m	0.115	0.01
3806	"	Grab	--	0.001	0.05
3807	"	Chip	0.70 m	0.010	0.10
3808	"	Chip	0.50 m	0.001	0.02

\* - not plotted

9. GEOCHEMISTRY

Approximately 90 soil samples were taken in order to extrapolate the skarn horizons into terrain where outcrop was absent.

A controlled grid, using chain and picket in outcrop areas, and flag and compass in overburden areas, was established prior to mapping and sampling.

The results from the soil geochemical survey are encouraging. A 1000-metre long soil anomaly with tungsten values greater than 40 ppm, trending parallel to strike and running oblique to topographic contours, was revealed. This anomaly is open to the northeast and provides us with significant information in light of the moderate overburden found in this area.

10. CONCLUSIONS

Assessment of known surface showings has been completed on the Stoneaxe claims. The retention of the claim group is recommended, based on the favourable geological and geochemical data found in this area.

In the "east zone", some locally spectacular scheelite mineralization and reasonable tungsten grades occur over sample lengths of up to 7 metres, and true thicknesses of 4 metres. These factors combine with good on-strike and down-dip potentials enabling these showings to hold economic value.

Conversely, the poor grades and low tonnage potential of the "western area" showings are well below known economic requirements. Further work is not recommended in this area.

Further work will be required in the northern claims area to determine the full mineral potential. Geochemical and geophysical techniques will have to be used initially in this covered terrain.

11. RECOMMENDATIONS

1. Complete geological mapping in the claims area in an effort to locate Stoneaxe showings in the regional stratigraphy.
2. Extend the flag and compass grid to the northeast and complete soil sampling in an effort to extend tungsten-bearing skarn mineralization.
3. Carry out contour soil sampling in the northwest claims area where Lower Cambrian limestone stratigraphy is in proximity with the altered intrusive rocks.
4. Explore the effectiveness of a proton magnetometer survey using existing correlative geological and geochemical data. If deemed effective, carry out a complete survey over the controlled sampling grid.

*Mike Stammers*

## APPENDIX 1

LIST OF PERSONNELSTONEAXE 1-30

<u>Name/Position</u>	<u>Residence</u>	<u>Dates Worked (1981)</u>
Melanie Boulding, Prospector	Victoria, B.C.	July 21-24
David Coffin, Prospector	Vancouver, B.C.	July 21-24, 27 Aug. 2, 23
Stephen Falls, Sampler	Don Mills, Ont.	July 20-22, Aug. 5, 6
Margot Sangster, Sampler	Vancouver, B.C.	July 20-22, Aug. 2, 5-6, 16-19
Michael Stammers, Geologist	Port Coquitlam, B.C.	July 22-23, Aug. 2
Mohan Vulimiri, Geologist	North Vancouver, B.C.	July 23

## APPENDIX 2

STATEMENT OF COSTSSTONEAXE 1-30WAGESField:

Geologist	3 days @ \$ 88 x 1.55	\$409.20
Geologist	1 day @ \$100 x 1.55	155.00
Prospector	4 days @ \$ 64 x 1.35	345.60
Prospector	7 days @ \$ 80 x 1.35	756.00
Sampler	10 days @ \$ 50 x 1.35	675.00
Sampler	5 days @ \$ 48 x 1.35	<u>324.00</u>

\$ 2,664.80

Office:

Geologist	3 days @ \$ 88 x 1.35	\$356.40
Drafting/ Compilation	3 days @ \$ 60 x 1.35	<u>243.00</u>

\$ 599.40

ROOM AND BOARD

32 mandays @ \$30/day

\$ 960.00

HELICOPTER

Charter	7 hours @ \$350/hour	\$2,450.00
Fuel	7 hours @ \$140/hour	<u>980.00</u>

\$ 3,430.00

FIXED WING

\$ 450.00

MISCELLANEOUS SUPPLIES

Field	\$ 175.00
Office	<u>25.00</u>

\$ 200.00

GEOCHEMICAL ANALYSIS

Assays	56 @ \$21.25	\$1,190.00
Geochemistry	129 @ \$ 6.85	883.65
Freight	241 lbs. @ \$0.50/lb	<u>120.50</u>

\$ 2,194.15

TOTAL

\$ 10,498.35

### APPENDIX 3

#### GEOCHEMICAL METHODS AND ANALYSIS

Stream silt samples and soil samples were collected in Kraft sample bags and sent to Min-En Laboratories Ltd., North Vancouver, B.C. These samples were then dried and sieved to -80 mesh. A portion of the -80 mesh material was then analyzed by methods appropriate for each element as listed below:

Mo, Cu, Pb, Zn, Ag - Nitric, perchloric digestion -  
A.A. Analysis

Au - Aqua Regia - A.A. Analysis

Sn, W - Fusion - Colorimetric

U - Fluorometric

Rock assay samples were ground to -100 mesh and then analyzed by methods appropriate for each element as listed below:

Mo, Cu, Pb, Zn, Ag,  $WO_3$ , Sn - Acid digestion  
- chemical analysis

Au - Fire - A.A. Finish

APPENDIX 4

STATEMENT OF QUALIFICATIONS

I, MICHAEL STAMMERS, of Port Coquitlam, British Columbia, hereby certify that:

1. I am a geologist employed by Serem Ltd. of 300 - 535 Thurlow Street, Vancouver, B.C.
2. I hold a B.A. degree in geology and geography from McMaster University, Hamilton, Ontario.
3. I have worked in geology and mineral exploration for 8 years.
4. I am the author of this report and the field work described in this report was carried out under my supervision.
5. I have no financial interest in the claims covered by this report or in Serem Ltd.



Michael Stammers,  
Geologist.

Vancouver, B.C.

January 1982.

AFFIDAVIT

IN THE MATTER OF APPLICATION FOR CERTIFICATE OF WORK  
FOR THE STONEAXE 1-30 MINERAL CLAIMS, WATSON LAKE MINING  
DISTRICT, YUKON TERRITORY, SUBMITTED ON BEHALF OF  
SEREM LTD.

I, Michael Stammers, geologist of SEREM Ltd., Suite 300,  
535 Thurlow Street, Vancouver, British Columbia, HEREBY CERTIFY  
THAT:

The preceding SUMMARY OF COSTS totalling \$10,498.35  
which is submitted in support of the Application for  
Certificate of Work, is the actual amount incurred by  
SEREM Ltd., in conducting a geological and a  
geochemical program on the Stoneaxe Mineral Claims,  
Watson Lake Mining District, during the 1981 field  
season.

AND THAT Application for Certificate of Work is attached for  
the following Representation Work:

<u>MINERAL CLAIMS</u>	<u>GRANT NUMBERS</u>	<u>AMOUNT APPLIED</u>
STONEAXE 1-30 incl.	Y A66180-YA66209 inc.	\$9,000.00
	Total applied	\$9,000.00
	Balance of Cost Unapplied	\$1,498.35

SWORN BEFORE ME at )  
WATSON LAKE , this 1st day )  
of April , 1982 )

*Michael Stammers*  
\_\_\_\_\_  
Michael Stammers

*Paul Jamieson*  
\_\_\_\_\_  
Notary Public



Department of Indian Affairs and Northern Development  
YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

I (Name)	MICHAEL STAMMERS	Occupation	GEOLOGIST	OFFICE DATE STAMP
(Postal Address)	1134 LOMBARDY DRIVE, PORT COQUITLAM, B.C.			

MAKE OATH AND SAY, THAT :-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):  
(Here list claims on which work was actually done by number and name)

STONEAXE 1-30 YA66180 - YA66209

situated at STONEAXE LAKE Claim Sheet No. 105 B/10, B/15

In the WATSON LAKE Mining District, to the value of at least \$10,498.35

dollars, since the 20th day of JULY 19 81,

to represent the following mineral claims under the authority of Grouping Certificate No. --  
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested.)

STONEAXE 1-30 incl, YA66180-YA66209 incl. 3 years each

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53)

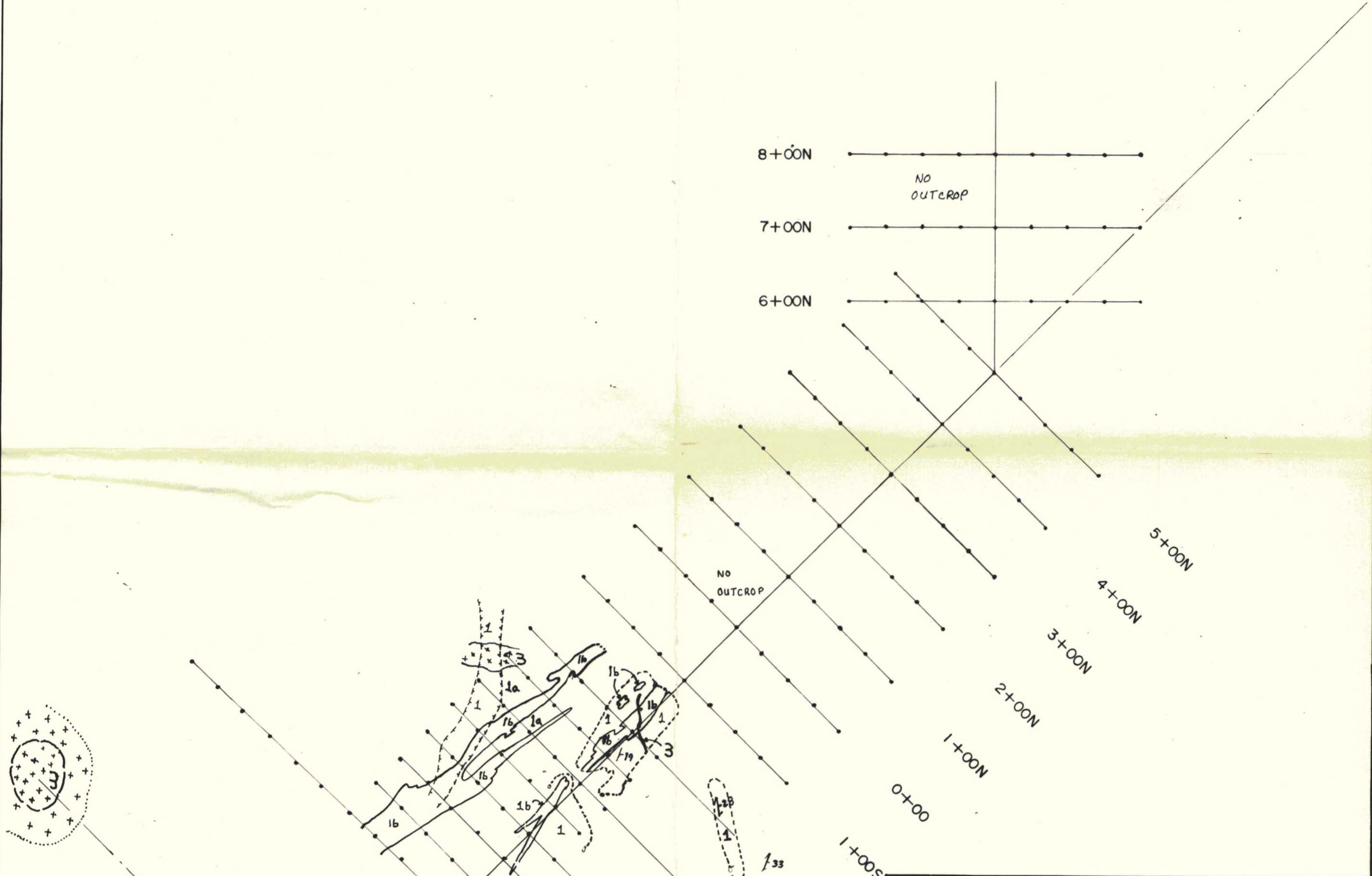
Geological and geochemical surveys were carried out over the Stoneaxe 1-30 claims from July 20 to August 23, 1981. Work included geological mapping, hammer and night ultraviolet prospecting, picket grid emplacement, geochemical sampling and detailed outcrop sampling. The preparation of maps and reports was completed in January 1982.

Sworn before me at \_\_\_\_\_  
this \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Notary Public





Applicant.

091009




LITHOLOGY	
3	CRETACEOUS-JURASSIC GRAVEL CREEK STOCK biotite-quartz monzonite to granodiorite
2	LOWER CAMBRIAN — not named medium grey, thin bedded to massive limestone
1	HADRYNIAN TO LOWER CAMBRIAN "GRIT UNIT" undivided metasedimentary rocks, mainly schist
1b	garnet-diopside-scheelite skarn
1a	coarse-grain, meta-grit or greywacke-conglomerate

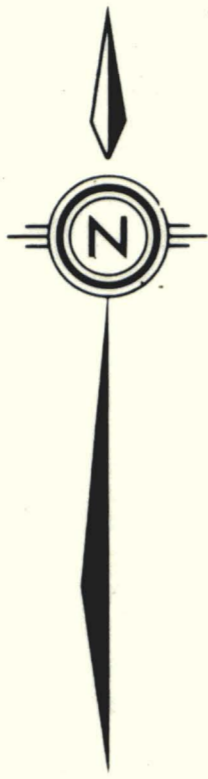
  

LEGEND	
	STRIKE & DIP
	CONTACT known, inferred
	LIMIT OF OUTCROP
	ABANDONED STREAM CHANNEL

**SEREM LTD.**  
**SELWYN BASIN**  
**STONEAXE CLAIMS**

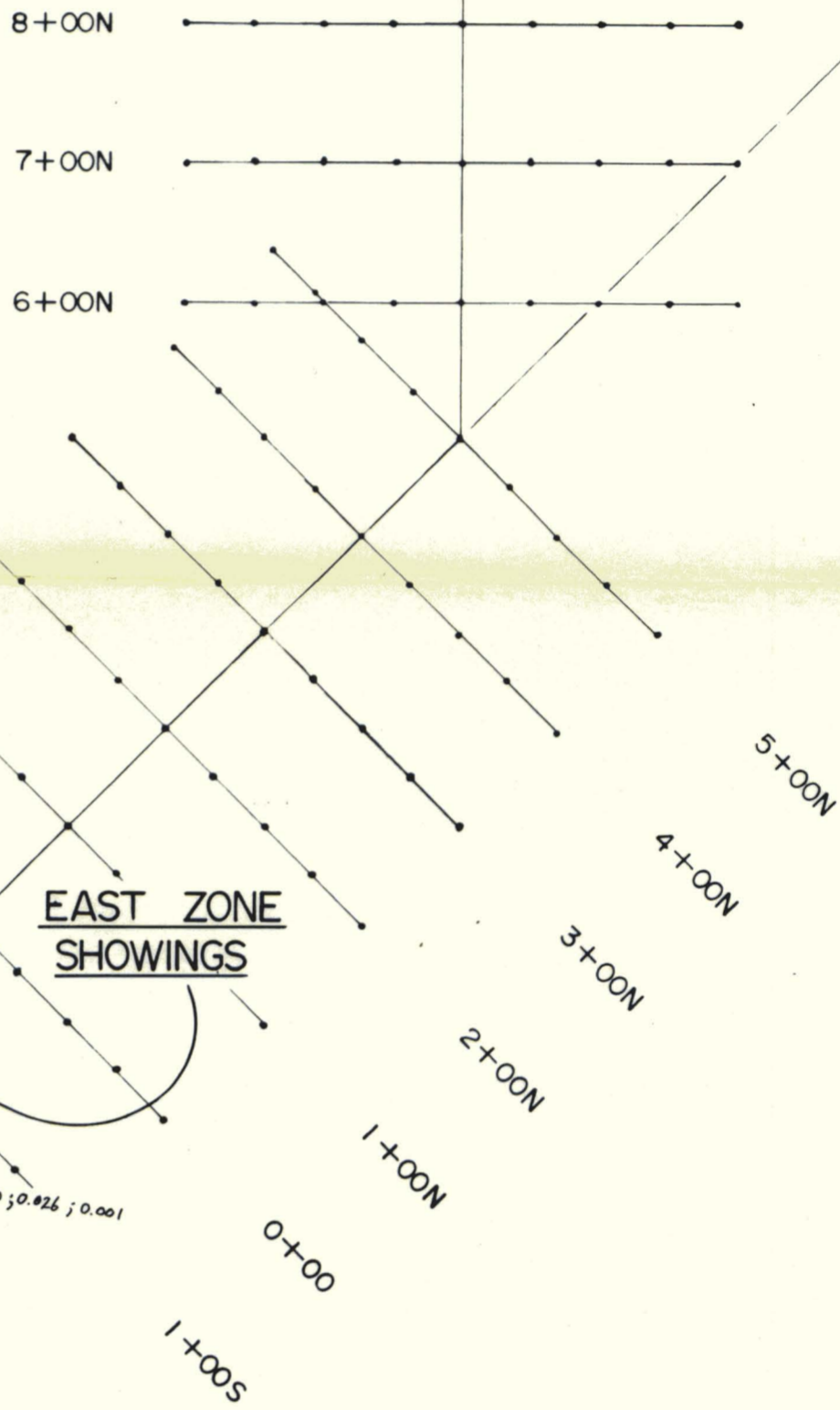
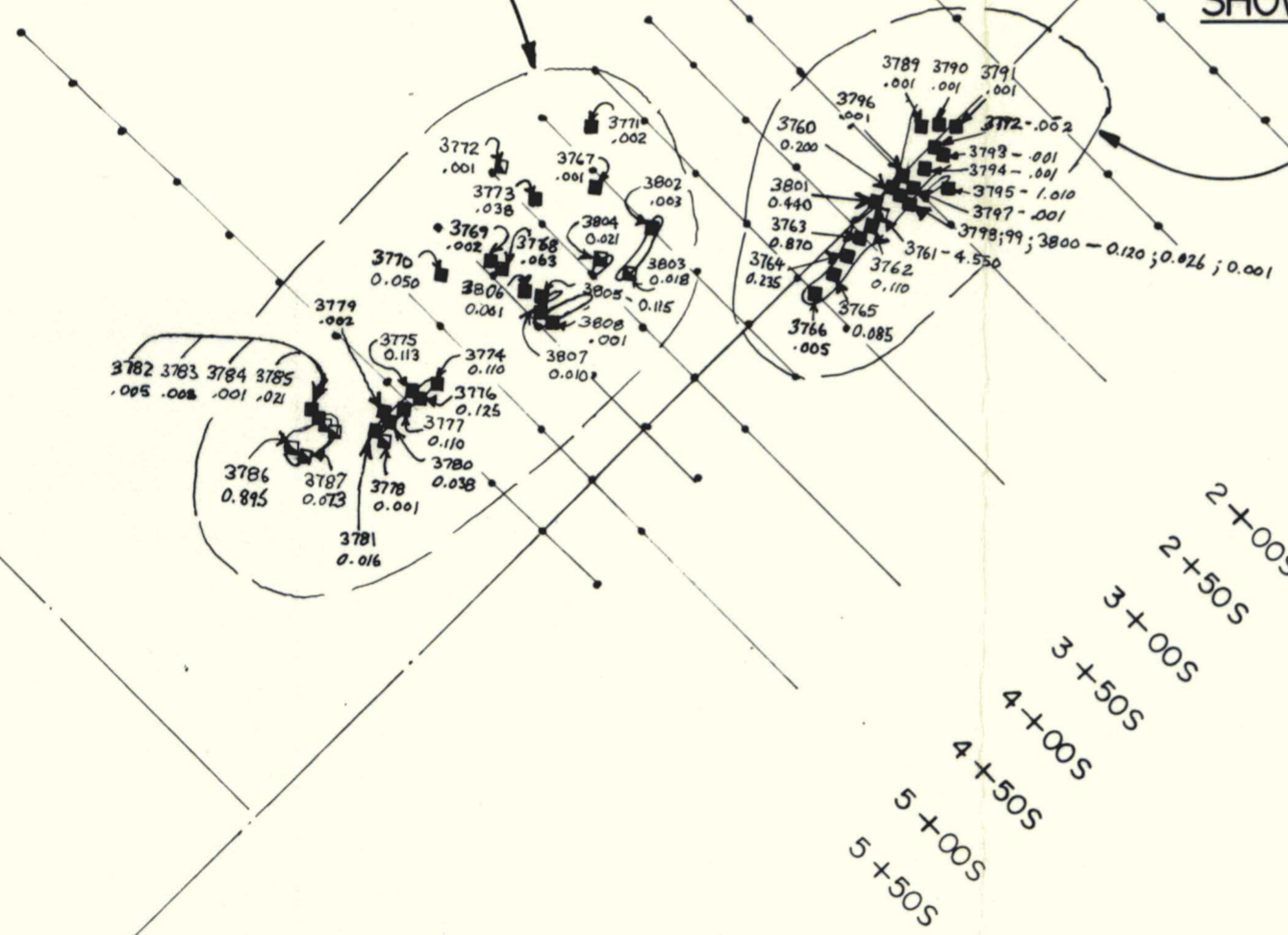
**GRID GEOLOGY** 001009

DATE JAN 82	REVISED	
NTS 105B/10	DATA MS DC	DRAWN DGD
SCALE 1:5000		FIGURE
		74



WESTERN AREA SHOWINGS

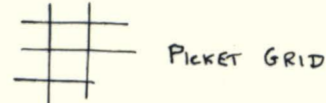
EAST ZONE SHOWINGS



LEGEND

- 3761 4.55 ■ Rock Assay - GRAB SAMPLE      SAMPLE NUMBER % WO<sub>3</sub>
- 3802 0.003 ■ Rock Assay - CHIP SAMPLE      SAMPLE NUMBER % WO<sub>3</sub>

REFER TO TABLE 1 IN TEXT FOR %ZINC AND SAMPLE LENGTH



091009

**SEREM LTD.**

**SELWYN BASIN  
STONEAXE CLAIMS**

**TUNGSTEN MINERALIZATION:  
— ROCK ASSAY RESULTS**

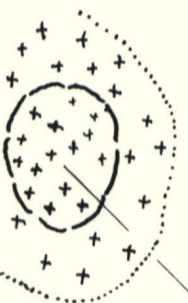
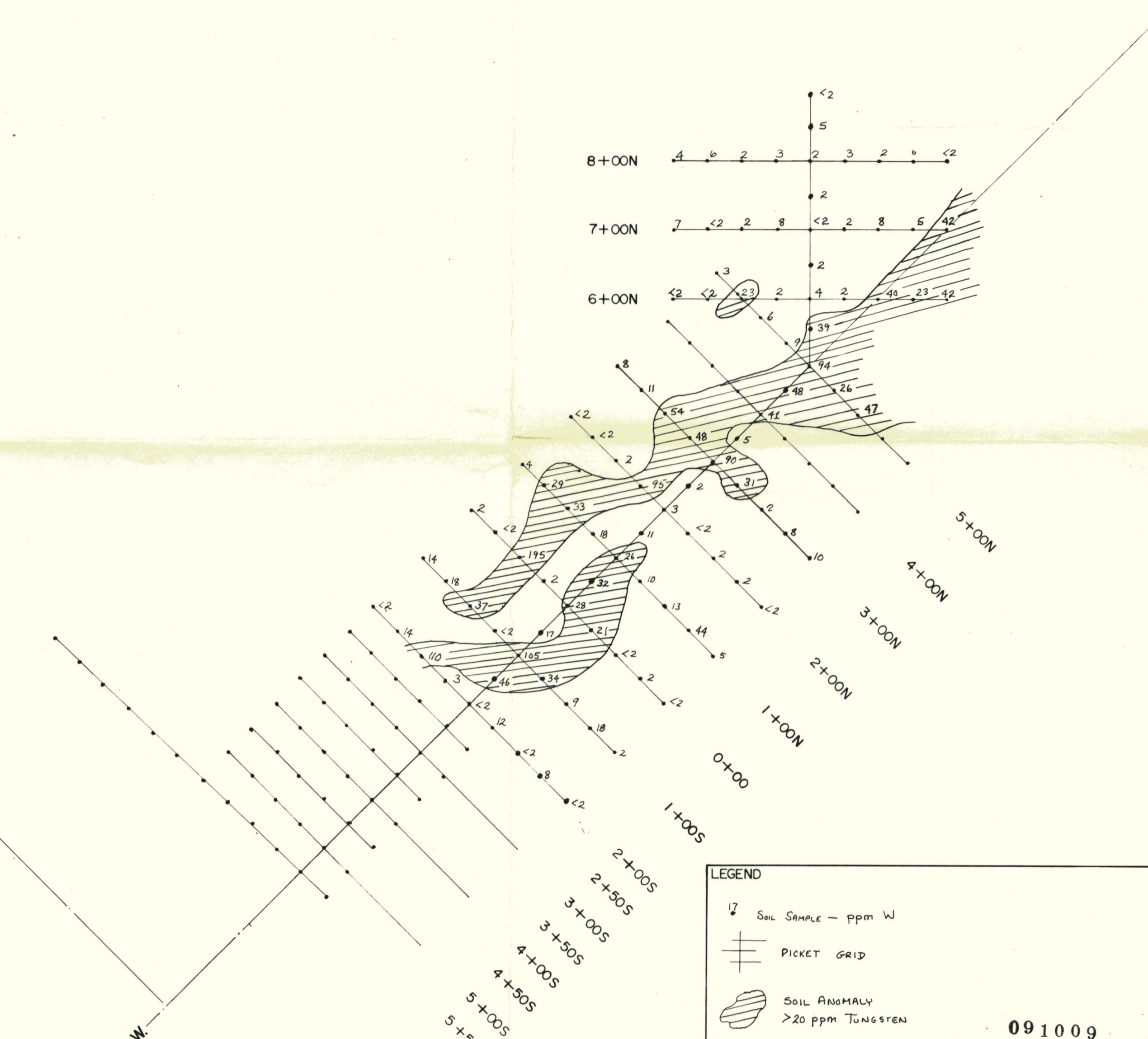
DATE JAN 82    REVISED  
NTS I05B/10    DATA MS DC    DRAWN DGD

SCALE 1:5 000

FIGURE



**5**



LEGEND

- 17 Soil SAMPLE - ppm W
- PICKET GRID
- SOIL ANOMALY >20 ppm TUNGSTEN

091009

**SEREM LTD.**  
**SELWYN BASIN**  
**STONEAXE CLAIMS**  
**GRID SOIL GEOCHEMISTRY**  
**TUNGSTEN**

DATE JAN 82      REVISED  
NTS I05B/10      DATA MS DC      DRAWN DGD

SCALE 1:5 000

0 500m

FIGURE **6**