

# 5559

GEOLOGICAL and GEOCHEMICAL SURVEY

on

THE SHA CLAIMS

TOODOGGONE RIVER AREA

OMINECA MINING DIVISION

94E/6E

by

W. Meyer, P. Eng.

and

P. Folk, B.A., Sc.

(Work done on behalf of International Shasta Resources Ltd. (N.P.L.))

Claims: Shas - 31, 33, 35, 36, 37, 38  
Sha 1 - 6 units  
Sha 2 - 2 units

Location: Black Lake  
57° 14' 127° 5'

Dates: July 16 - 21, 1975

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 5559 MAP \_\_\_\_\_

August 1, 1975

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION .....	1
LOCATION and ACCESS .....	1
CLAIMS .....	1, 2
GEOGRAPHY & VEGETATION .....	2
GEOLOGY	
GENERAL .....	2, 3
PROPERTY .....	3
LITHOLOGY .....	3, 4, 5, 6
ALTERATION & MINERALIZATION .....	6, 7
STRUCTURE .....	8
GEOCHEMISTRY .....	8, 9
SUMMARY & CONCLUSIONS .....	10
RECOMMENDATIONS .....	11
ASSESSMENT DETAILS .....	12
INTERIM STATEMENT of ACCOUNT .....	13
CERTIFICATE - P. Folk .....	14
CERTIFICATE - W. Meyer .....	15

Maps:

1 Fig. 1	Claim Map .....	after page 1
2 Fig. 2	Geology Map .....	in pocket
3 Fig. 3	Geochemistry Map (Gold) .....	in pocket
4/ Fig. 4	Geochemistry Map (Silver) .....	in pocket

## INTRODUCTION

During July 1975 geological and geochemical field work was carried out on the "SHA" claim group at the request of Mr. H. Faulkner of International Shasta Resources Ltd. (N.P.L.). The object of the programme was to assess the gold-silver geochemical soil anomaly first located during 1973 and outlined in July of 1974.

The work was carried out by Peter Folk, B.A., Sc. of W. Meyer & Associates Ltd. under the direction of W. Meyer, P. Eng.

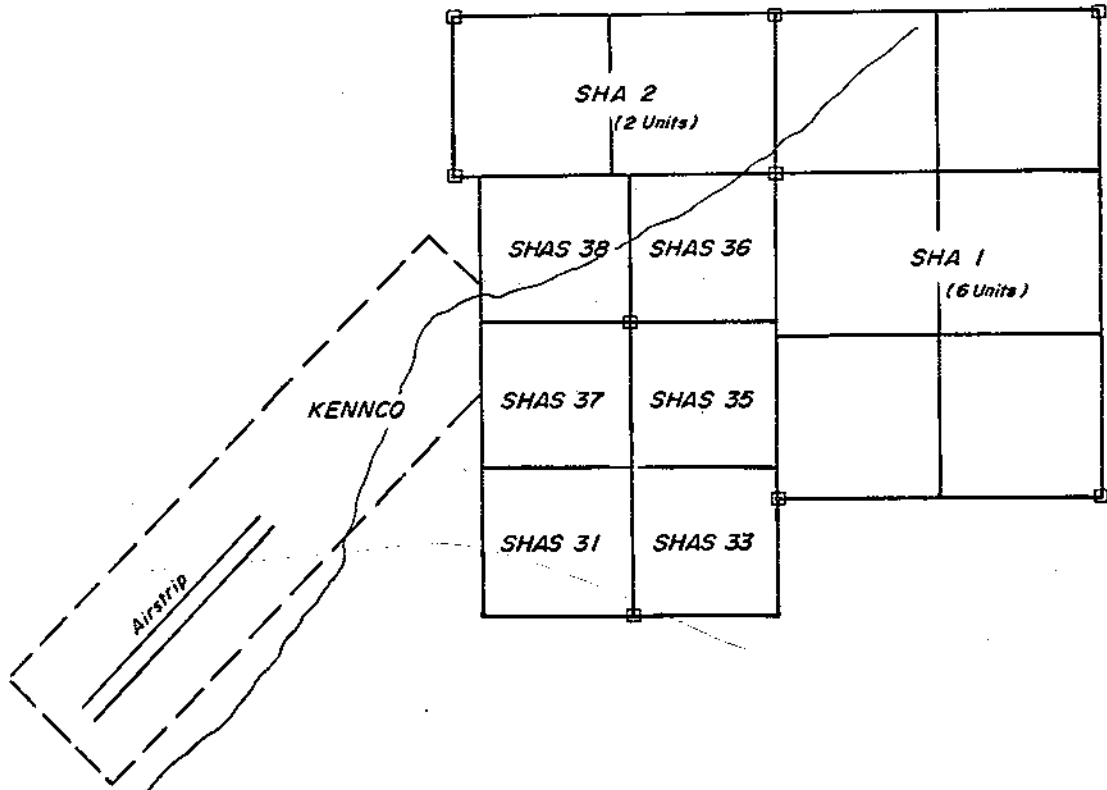
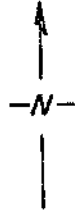
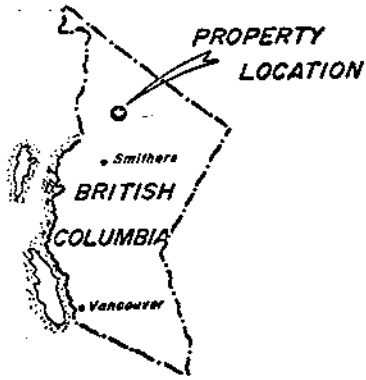
A geological map was prepared and rock geochemical samples were obtained from outcroppings over the claim group.

## LOCATION and ACCESS

The "SHA" claims are located in the Toadoggone River area of north central B.C. immediately north and east of the Black Lake airstrip centred around Latitude  $57^{\circ} 14' N$  and Longitude  $127^{\circ} 5' W$ . Access is via either wheel or float equipped fixed-wing from Smithers, B.C., Dease Lake, B.C. or McKenzie, B.C. Smithers and McKenzie are both serviced by major highways or daily airline service from Vancouver, B.C. direct or via Prince George, B.C.

## CLAIMS

The "SHA" group consists of 6 full sized claims originally recorded on July 21, 1972 and 2 claims totalling 8 metric claim units staked on July 16, 1975.



Department of  
 Mines and Petroleum Resources  
**ASSESSMENT REPORT**  
 NO. 5559 MAP 1

INTERNATIONAL SHASTA RESOURCES  
 LTD. N.P.L.

Toadoggone River Area  
**LOCATION MAP**

Aug. 1975 1" = 2000' Figure - 1

The technical work on which this report is based is intended to apply as assessment credits on the following claims:

<u>Claim</u>	<u>Record No.</u>	<u>Title</u>	<u>Expiry Date</u>
Shas 31	113614	International Shasta	July 21, 1977
Shas 33	113616	Resources Ltd.(N.P.L.)	"
Shas 35-38	113619-113621	"	"
Sha 1 (6 units)	01306 (Tag No.)	"	August 5, 1976
Sha 2 (2 units)	01307 (Tag No.)	"	"

#### GEOGRAPHY and VEGETATION

The relief on the property is in the order of 750 feet with Black Lake being 4,200' above sea level. Topographic slopes are moderate to steep with a steep V-shaped creek valley in the southern part of the claims.

The property is located below the treeline in an old burn. Vegetation consists of waist-to-eye level underbrush and numerous tall snags. There are a few immature jackpine and spruce in some areas.

#### GEOLOGY

##### General

Intermediate volcanic flows and fragmented rocks of Upper Triassic and Lower Jurassic age, termed the Takla Group, are overlain by a second group of uncertain age, termed the Toodoggone Volcanics.

Both groups are intruded by dioritic stocks of the Omineca Intrusions and are overlain by Paleocene sediments (Sustut Group).

Takla Group rocks are mainly basaltic flows and pyroclastic rocks including crystal and lapilli tuffs.

The Toodoggone Volcanics include red to green to grey dacite and latite porphyry flows and pyroclastic rocks. Age dating by the B.C. Department of Mines suggests a similar age for the Toodoggone Volcanics and Omineca Intrusions.

#### Property Geology

Geological mapping was carried out using compass-chain methods tying into a previously surveyed grid where possible. Rock geochemical samples were taken at the same time as the outcrops were being mapped.

The claims are underlain by porphyritic flows and pyroclastic rocks and minor sediments tentatively assigned to the Toodoggone Volcanics. Six separate units were defined and are shown on the enclosed geology map. The following are descriptions of the rock units seen in the field from structurally highest to structurally lowest. Relative ages of the various units could not be definitely ascertained although no evidence of major folding was noted.

#### Lithology

##### A. Purple Porphyry

Massive purplish brown feldspar porphyries with quartz pheno-

crystals and some small mafic crystals outcrop on the west part of the claim group. The porphyry is massive and consists of about 50% white feldspar phenocrysts up to about 2 mm. in diameter. Round quartz phenocrysts up to 3 mm. in diameter account for about 15% of the rock, and small mafic grains account for 5% to 10%. A fine grained brown-grey groundmass comprises the remainder of the rock which is fresh, massive and unaltered.

B. Unaltered Pyroclastics

Purple to brown agglomerates, tuffs and minor coarse sediments underlie the purple porphyries described above. The coarser material contains large fragments of porphyritic material very similar in composition to the matrix which is a feldspar quartz porphyry. Beds of volcanic conglomerate containing rounded volcanic boulders and finer sandstone containing small volcanic pebbles are interbedded with the coarse pyroclastics. Brown mica was noted in some outcrops. Minor traces of pyrite and epidote were seen in some locations, otherwise the pyroclastics appear to be unaltered.

C. Altered Tuffs

Altered crystal and lapilli tuffs rest under either an unconformable or faulted contact with the pyroclastics mentioned above. On weathered surfaces the tuffs are light brown-orange in colour with quartz crystals and fragments (lapilli) in positive relief. Typically the altered

tuffs are composed of crystals up to 3 mm. in diameter of bright orange feldspar (50 - 60%) and round quartz grains (20%) in a fine grained greyish feldspar rich matrix. Very fine cubes of pyrite, some altered to goethite are dusted throughout the rocks. Small irregular quartz veinlets can be found in most outcrops. The lapilli tuff is similar in appearance but contains small volcanic fragments.

Aphanitic roughly NW trending quartz veins of various sizes are distributed irregularly through the unit. These veins are associated with quartz stockworks, small concentrations of pyrite and rarely, specks of an unidentified grey mineral (at I24E, I06N for example). Near I23E, I03N a vein attains a 20' width before bifurcating and pinching out over a short distance.

#### D. Feldspar Porphyry

Under the altered tuffs and apparently conformable with them lies a quartz-feldspar porphyry. The porphyry is similar in grain size, colour and general appearance to the altered tuffs except that the porphyry contains less quartz and no fragments but exhibits well developed books of greenish brown mica. Bright orange feldspar phenocrysts rest in a fine grained brown groundmass with about 10% small round quartz crystals and euhedral mica books. Epidote, pyrite and thin quartz stringers can be found but are not abundant. The porphyry gets finer grained near the contact with the other lithologies.



#### E. Orange Tuffs and Agglomerates

Coarse pyroclastics appear to underlie the porphyry. Weathered surfaces are light brown and exhibit abundant volcanic fragments in positive relief. Bright orange feldspar phenocrysts and about 20% quartz as round grains characterize the groundmass of the coarse pyroclastics. The rocks contain a fine sprinkling of pyrite with some epidote and a few quartz veinlets.

#### F. Limestone and Thinly Banded Sediments

Two outcrops of brecciated limestone and thinly bedded chert and jasperoidal siliceous sediments were seen. These sediments do not appear to be of any significant extent.

#### ALTERATION and MINERALIZATION

Significant quartz veining with associated quartz stockworks occur in various locations in the Altered Tuff unit. Pyrite, although not massive, occurs as a fine dusting throughout the altered tuff unit and can be found in most of the quartz veins and stockworks. An unidentified grey mineral was noted at one location and manganese staining is associated with pyrite and fracturing in some parts of the veins. Assay results indicate good gold and silver values in some sections of the quartz veins and stockworks. A few samples also gave fairly good assays in material with little in the way of quartz enrichment or obvious mineralization. The values are somewhat erratic as are the veins and stockworks themselves.

Rock geochemical samples representing between five and ten feet of rock chips resulted in three samples exceeding the upper limits of detection of 100 ppm (2.91 oz/ton) silver. The highest gold assay was 27 ppm (.787 oz/ton) gold. Assays in the strongly anomalous region on the southern part of the claims were:

No.	A g		A u	
	ppm.	oz/ton	ppm.	oz/ton
57	100	2.91	2.40	.070
58	75	2.18	1.10	.032
63	19.0	.55	.71	.021
64	100	2.91	2.50	.072
66	33	.96	.65	.018
72	65.0	1.89	27.0	.787
73	100	2.91	12.50	.364
74	37.0	1.08	.45	.013
75	56.0	1.63	2.50	.072
77	46.0	1.34	.62	.018
9' chip sample 75' SE of #64		.12		.002

These samples were taken over an area greater than 1000 ft. by 400 ft. Samples numbered 74, 75, 77 and 58 contained little in the way of quartz veining or obvious mineralization.

The lower three units (Altered Tuff, Porphyry, Orange Tuffs and Agglomerates) have suffered low grade hydrothermal alteration which

has turned the feldspars a bright orange colour and resulted in minor epidote and pyrite development. Intense silicification resulting in veins and stockworks is largely confined to the Altered Tuff rock unit which represents the most favourable horizon for mineral deposition on the claim group.

### STRUCTURE

The massive unbedded nature of the rocks on the claim group obscures the details of the structures present. Generally speaking, north west dipping unaltered volcanic porphyries and pyroclastics are in faulted or unconformable contact with altered tuffs and feldspar porphyries which seem to have a northerly strike with westerly dips. The hill on which most of the quartz veining occurs is a dip slope.

A calcite filled fault with an attitude of  $155^{\circ}/60^{\circ}$  E may have a significant displacement but two postulated north westerly faults do not. The major quartz veins strike NNW and have fairly steep WSW dips.

No folding was noticed.

### GEOCHEMISTRY

A total of 82 two-to-three pound rock chip samples were collected at various outcrop locations throughout the property. The rock chips represent a sample length between 5' and 10' taken at random locations.

Analyses were for copper, gold and silver at Acme Analytical Laboratories, Burnaby, B.C. For Cu and Ag the samples were ground to -150 mesh and weighed portions were digested by aqua regia and analyzed by atomic absorption. The Au assays were treated similarly but samples were ignited before digestion and weaker concentrations of acids were used. Background corrections were applied for the Ag and Au assays. Contoured results are shown on accompanying maps.

### Results

#### Copper

All assays for copper were less than 35 ppm and are not considered to be significant.

#### Silver

Silver assays were deemed to be anomalous if greater than 1.0 ppm. Strongly anomalous values are those over 10 ppm.

Two large silver anomalies separated by an area of glacial drift are located within the claim group boundaries. Exact values above 100 ppm Ag are not known since 100 ppm is the upward limit of detection of the assay technique used. Three samples, which were taken from quartz veins, exceeded this 100 ppm (2.91 oz/ton) limit. Several other samples in the same general area as the veins were strongly anomalous. A conservative estimate of the size of the strongest anomaly

(greater than 10 ppm Ag) is 1,000 ft. by 400 ft. and is located in the silicified part of the altered tuffs.

#### Gold

Gold was deemed to be anomalous if greater than .05 ppm and strongly anomalous if greater than 0.5 ppm.

The anomalous gold results correspond to the anomalous silver assays reported above. Strongly anomalous zones correspond to areas strongly anomalous in silver but are slightly smaller in extent. The best assay of 27.00 ppm (.787 oz/ton) Au is from a sample taken in, and adjacent to, one of the quartz veins. As with silver, the best gold results are located in the silicified (quartz veins and stockwork) part of the altered tuffs.

#### SUMMARY and CONCLUSIONS

1. From July 16-21, 1975 employees of W. Meyer & Associates Ltd. conducted a rock geochemical survey and geological mapping over the SHA group near Black Lake in the Omineca Mining Division.
2. Geological mapping has shown the SHA group to be underlain by a series of volcanic porphyries and pyroclastics some of which have been subject to silicification and hydrothermal alteration. Limestone and sediments are minor in extent.
3. The gold-silver anomalies found previously in soils on the claims are directly related to bedrock sources.

## II.

4. Rock geochemistry has defined two areas which are anomalous in gold and silver and are separated by glacial drift.

5. The anomalous areas are confined to an altered tuff rock unit. Strongly anomalous areas are concentrated in and around irregular quartz veins and quartz stockworks in the altered tuffs on a hill which appears to be a dip-slope.

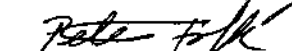
6. The extent of the gold-silver anomalies, quartz veins and stockworks located in a geologically favourable horizon indicate that further exploration work should be undertaken on the claims.

### RECOMMENDATIONS

Work described in this report confirms the existence of gold and silver values over substantial areas of an altered tuff rock unit. A programme to accurately determine the extent and grade of bedrock material in the anomalous zone is warranted. This programme would entail detailed mapping and sampling of the outcrops in the anomalous zones and drilling a fence of 5 short holes (200' depth) across the mineralized zone.

The initial cost of such a programme including mob-demob, direct and indirect costs is estimated to be approximately \$30,000.00.

Respectfully submitted,



W. Meyer, P. Eng.

P. Folk, B.A., Sc.

ASSESSMENT DETAILS

PROPERTY: SHA and SHAS Claims

MINING DIVISION: Omineca

SPONSOR: International Shasta Resources  
Ltd. (N.P.L.)

PROVINCE: British Columbia

LOCATION: Black Lake Area

TYPE of SURVEY: Geological &amp; Geochemical

CREW MAN DAYS: 22

DATE STARTED: July 14/75

CONSULTING MAN DAYS 2

DATE FINISHED: July 21/75

DRAUGHTING MAN DAYS 5

TOTAL MAN DAYS 29

## CONSULTANT:

W. Meyer, 911 Jarvis Street, Coquitlam, B.C.

## FIELD TECHNICIANS:

P. Folk, 5970 173rd Street, Surrey, B.C.

P. Dunsford, 2564 Panorama Drive, North Vancouver, B.C.

G. McKay, #1015 - 470 Granville Street, Vancouver, B.C.

## DRAUGHTSMAN:

P. Folk, 5970 173rd Street, Surrey, B.C.

INTERIM\* STATEMENT OF COST

International Shasta Resources Ltd. (N.P.L.)  
SHA and SHAS Claims

CREW: P. Folk, G. McKay

PERIOD: July 14 - July 21/75

## BREAKDOWN AS FOLLOWS:

7 days crew man @ \$135/day	\$	945.00
2 days travel @ \$135/day		270.00
2 days consulting @ \$150/day		300.00
2 days preparation @ \$100/day		<u>200.00</u>
	\$	1,715.00

## CREW EXPENSES TO DATE:

Air fares & equipment	\$	530.00	
Assaying		500.60	
Groceries, room		227.43	
Camp supplies		86.00	
Drafting & reproduction		<u>15.80</u>	
		1,359.83	
+ 10%		<u>135.98</u>	<u>1,495.81</u>
	\$		<u><u>3,210.81</u></u>

W. MEYER & ASSOCIATES LTD.

*W. Meyer*  
W. Meyer, P. Eng.

Dated: August 1, 1975

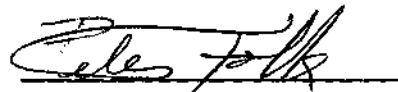
\*Note: This statement reflects the majority of the cost; there may be a few minor charges not yet received by us and hence not included in the foregoing.



CERTIFICATE

I, Peter Folk, do hereby certify that:

1. I am a geologist with residence at 5970 173rd St. Surrey, B.C.
2. I am a graduate of the University of British Columbia (B.A., Sc. 1971)
3. I am a member of the Association of Professional Engineers of the Province of British Columbia, as Engineer-in-Training.
4. I have worked as an exploration geologist for five years for the following companies: Western Geological Services; West Coast Mining & Exploration and W. Meyer & Associates Ltd. I am presently employed by W. Meyer & Associates Ltd.
5. I have no interest, direct or indirect, nor do I anticipate receiving any, in the properties or securities of International Shasta Resources Ltd. (N.P.L.)

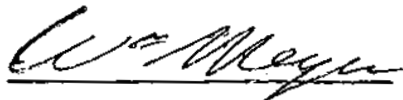


P. Folk, B.A., Sc.

CERTIFICATE

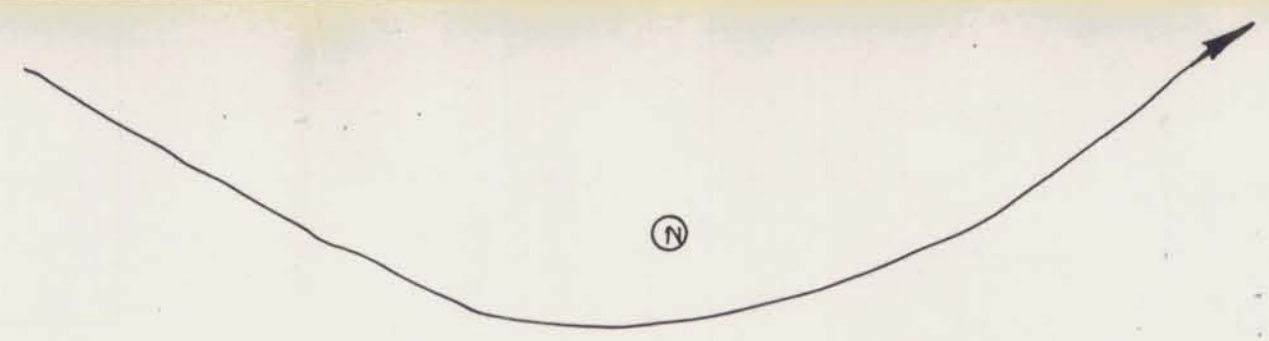
I, William Meyer, do hereby certify that:

1. I am a geologist with residence at 911 Jarvis St. Coquitlam, B.C.
2. I am a graduate of the University of British Columbia (B.Sc., 1962)
3. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.
4. I have worked as an exploration geologist for twelve years for the following companies: Phelps Dodge Corporation of Canada Ltd., Gibraltar Mines Ltd., Associated Geological Services Ltd, Western Geological Services Ltd. (senior partner). I am presently a senior partner in W. Meyer & Associates Ltd.
5. The programme described in this report was carried out by a W. Meyer & Associates Ltd. crew under my direction.
6. I have no interest, direct or indirect, nor do I anticipate receiving any, in the properties or securities of International Shasta Resources Ltd (N.P.L.)



W. Meyer, P.Eng.





SHA 2  
2 units

120N

SHA 1  
6 units

115N

110N

105N

100N

95N

90N

108E

110E

112E

114E

116E

118E

120E

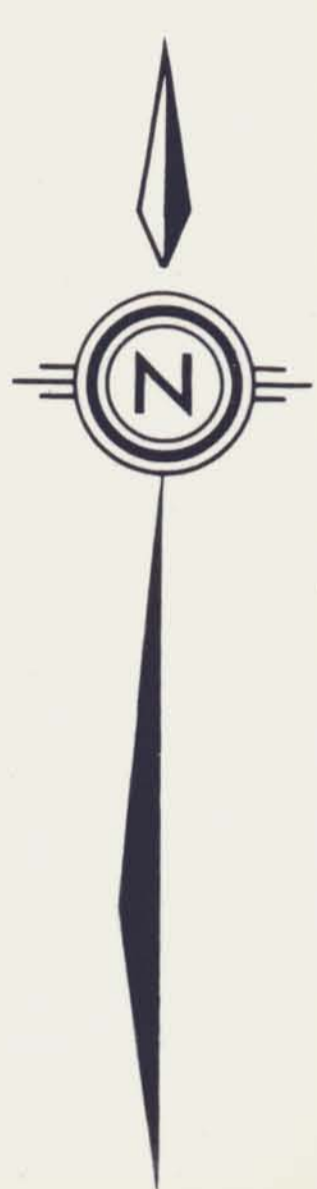
122E

126E

130E

KENNCO

SHAS CLAIMS



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5559 MAP 3

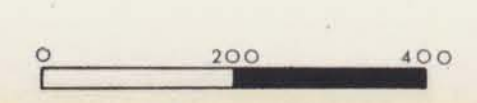
5559  
MAP 3

INTERNATIONAL  
SHASTA RESOURCES LTD. (N.P.L.)

Black Lake Area  
**ROCK GEOCHEMISTRY--GOLD (PPM)**

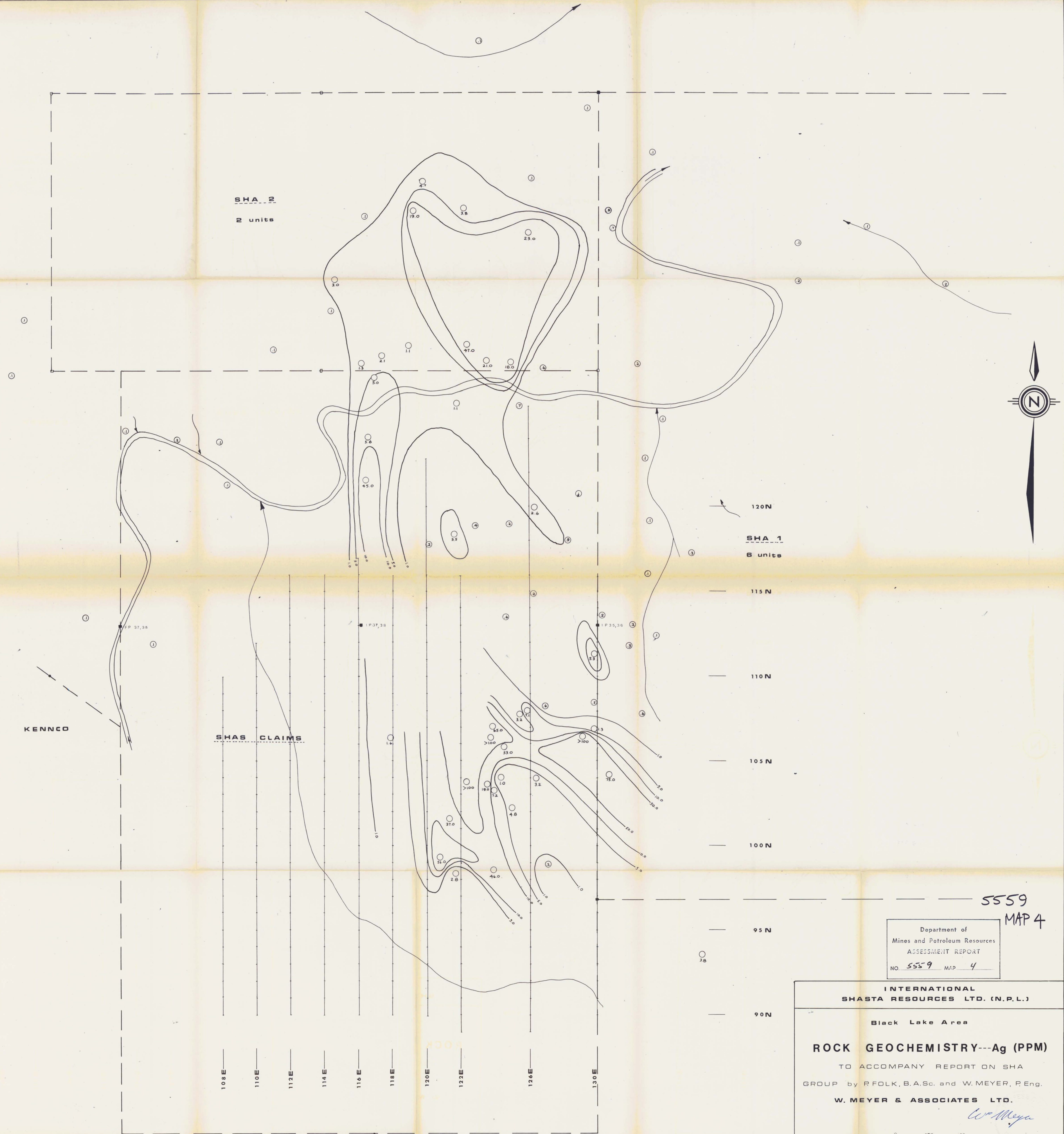
To Accompany Report on SHA  
GROUP by R Folk, B.A.Sc. and W. Meyer, P.Eng.  
W. Meyer & Associates Ltd. *W. Meyer*

SCALE 1 INCH = 200 FT



AUG. 1, 1973  
FIG. 3





SHA 2  
2 units

SHA 1  
6 units

SHAS CLAIMS

KENNCO



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5559 MAP 4

INTERNATIONAL  
SHASTA RESOURCES LTD. (N.P.L.)

Black Lake Area  
**ROCK GEOCHEMISTRY---Ag (PPM)**  
TO ACCOMPANY REPORT ON SHA  
GROUP by P.FOLK, B.A.Sc. and W.MEYER, P.Eng.  
W. MEYER & ASSOCIATES LTD.

*W. Meyer*

SCALE 1 INCH=200 FT



AUG. 1, 1975  
FIG. 4

5559  
MAP 4





Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 5559 MAP 2

5559  
 MAP 2

**INTERNATIONAL SHASTA RESOURCES LTD. (N.P.L.)**

**Black Lake Area**

**GEOLOGY**

To Accompany Report on SHA

GROUP by R. Folk, B.A.Sc. and W. Meyer, P.Eng.

**W. Meyer & Associates Ltd.** *W. Meyer*

SCALE 1 INCH = 200 FT. 0 200 400

AUG 1, 1975  
 Fig 2