

PRECIOUS METAL VEINS  
 ON THE  
 OX LAKE PROPERTY  
 OMINECA MINING DIVISION  
 TAHTSA LAKE, BRITISH COLUMBIA

## LOCATION

N.T.S.: 93 <sup>W</sup>E / <sup>W</sup> 11E  
 Latitude: 53° ~~40.3'~~ 40.3'  
 Longitude: 127° 03.1'

## CLAIMS

Ox 1-13, Ox 17-18, Ox 37-38, Ox 52-60,  
 Hi 1-4 Frs, Hi 7-9 Frs, Hi 12 Fr, TAH 1-20

## OWNERS

ASARCO Exploration Co. of Canada Ltd.  
 12th Floor, 350 Bay Street  
 Toronto, Ontario  
 M5H 2S6

FILMED

and

Operator: Consolidated Silver Standard Mines Ltd.  
 1100 - 1199 West Hastings Street  
 Vancouver, B.C.  
 V6E 3V4

MINISTRY OF ENERGY, MINES  
 AND PETROLEUM RESOURCES

Rec'd

MAR 21 1986

## PREPARED BY

R.A. Quartermain  
 Consolidated Silver Standard Mines Ltd.  
 1100 - 1199 West Hastings Street  
 Vancouver, B.C.

SUBJECT \_\_\_\_\_

FILE \_\_\_\_\_

VANCOUVER, B.C.

**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**

FEBRUARY 16, 1986

14,482

## SUMMARY

A limited reconnaissance lithogeochem and stream geochem survey principally on the TAH claim in the Omenica Mining Division, was partially successful. A polymetallic vein within the Ox Lake porphyry intrusion was found to contain potentially economic grades of silver. Additional sampling and trenching is recommended in 1986 to evaluate the known polymetallic veins on the property. Regional lithogeochem sampling of altered volcanics and sediments failed to locate any units with an elevated gold content. Stream sediments samples covering the drainage of 50% of the TAH claim were disappointing as they contain background values of most elements.

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	
INTRODUCTION.....	1
CLAIMS.....	1
LOCATION AND ACCESS.....	2
HISTORY.....	2
1985 EXPLORATION PROGRAM.....	2
GEOCHEMICAL SURVEY.....	3
CONCLUSIONS and RECOMMENDATIONS.....	4
REFERENCES.....	5
PROGRAM PROPOSAL 1986.....	6
COST STATEMENT 1985.....	7
CERTIFICATE OF QUALIFICATION.....	8

### Appendices

- Appendix A    Sample procedure and sample description  
Appendix B    Analytical results and methodology

### List of Figures

- |                |                              |              |
|----------------|------------------------------|--------------|
| Figure 0x-85-1 | Location Map 1:250,000       | after page 1 |
| Figure 0x-85-2 | Claim Map 1:50,000           | after page 1 |
| Figure 0x-85-3 | Sample Location Map 1:10,000 | in pocket    |

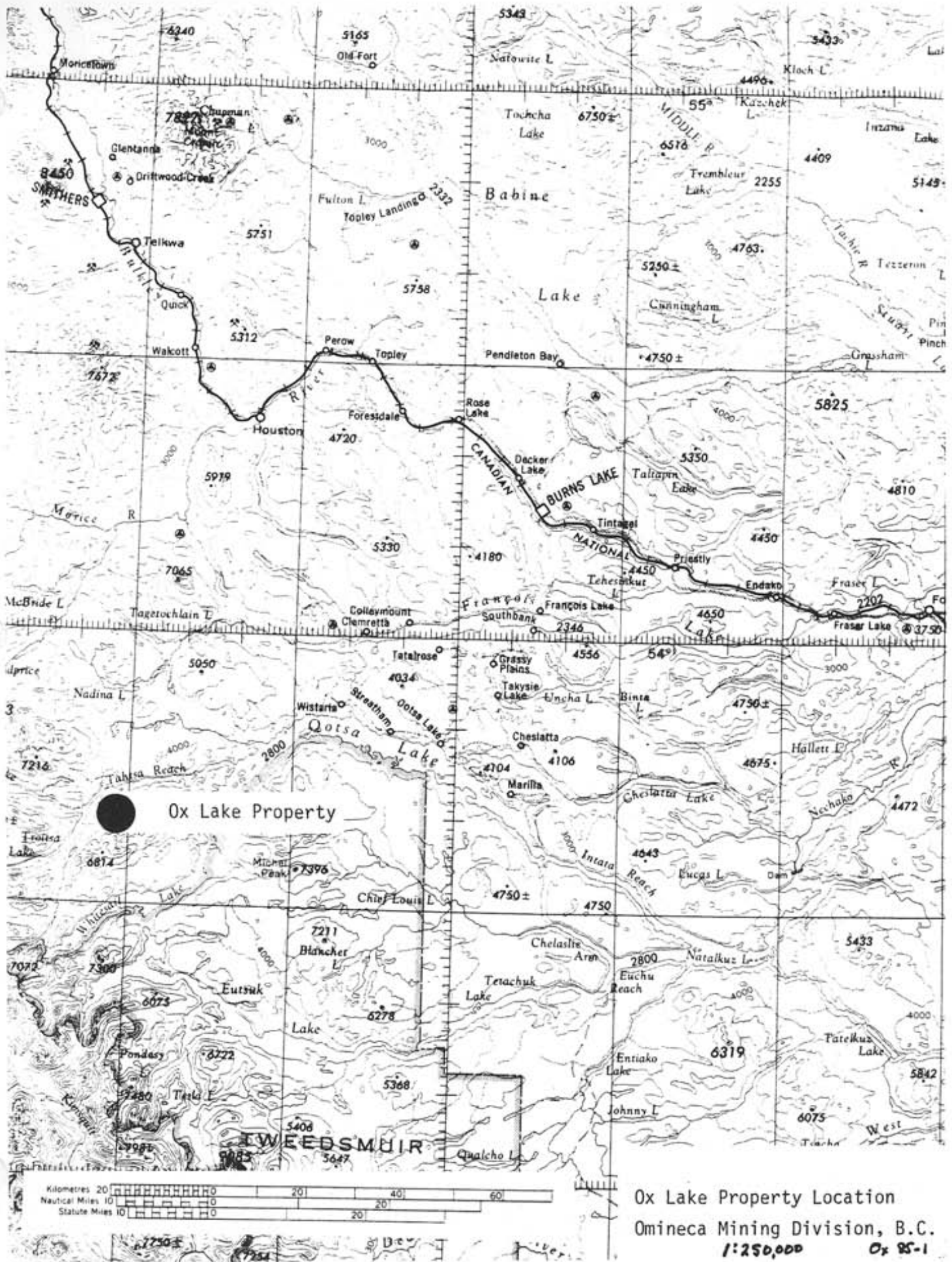
## INTRODUCTION

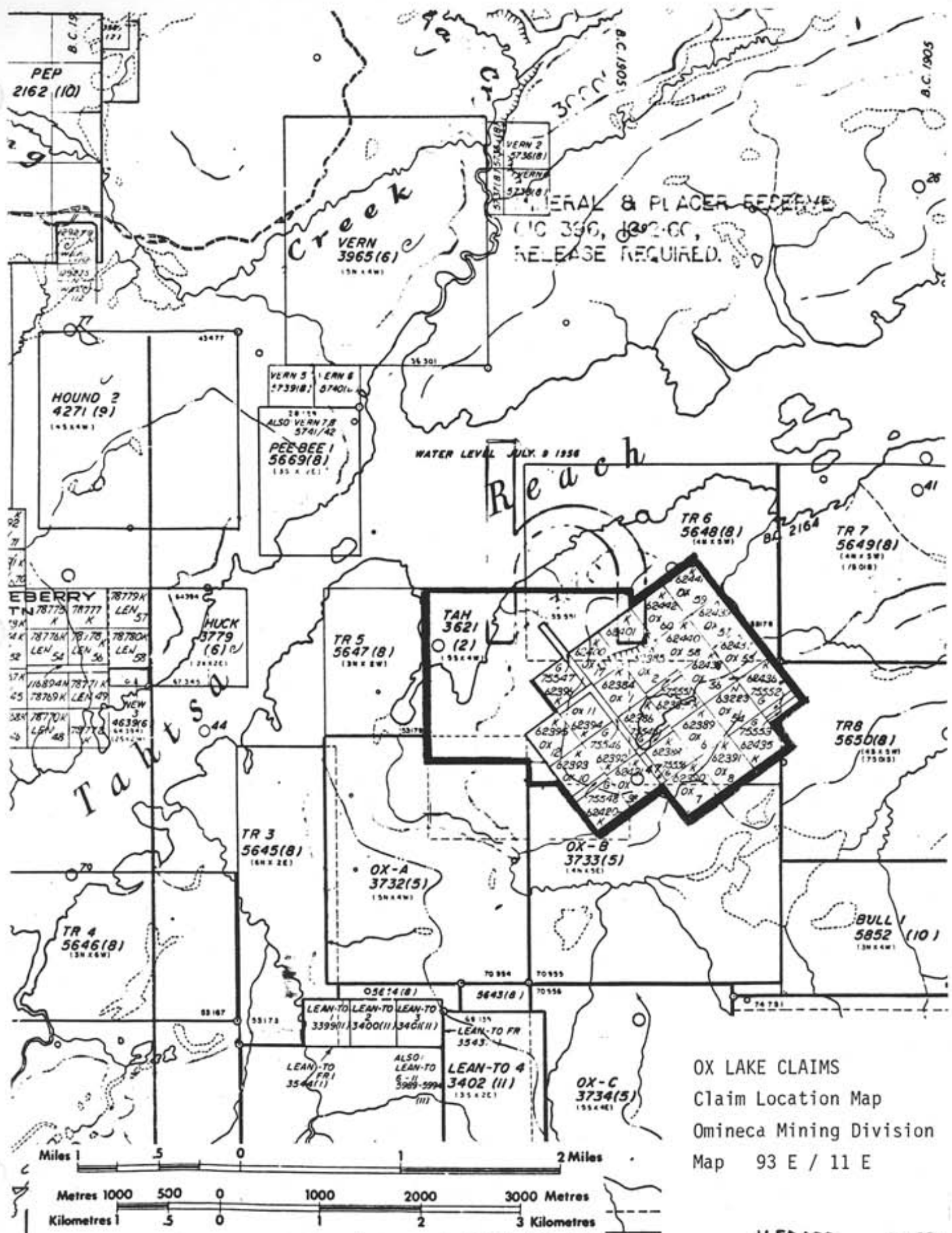
The Ox Lake property, located in central British Columbia, contains drill indicated geological reserves of 23.6 million tonnes grading 0.35% copper equivalent. The property, a joint venture between ASARCO (55%) and Consolidated Silver Standard (45%), was explored in the late 1960's. Precious metal veins were noted on the property but received little attention as exploration work was directed towards definition of the porphyry copper mineralization. The purpose of the current program is to sample and evaluate the economic potential of the property for precious metals.

## CLAIMS

The Ox Lake property consists of 25 two-post claims, 8 fractions and 1 20-unit metric claim.

<u>Record</u>	<u>Claims</u>	<u>Good Standing</u>
62384	Ox1	29 Aug 91
62385	Ox2	29 Aug 89
62386-89	Ox3-6	29 Aug 91
62390-91	Ox7-8	29 Aug 89
62392	Ox9	29 Aug 91
62393	Ox10	29 Aug 89
62394	Ox11	29 Aug 91
62395-96	Ox12-13	29 Aug 89
62400-01	Ox17-18	29 Aug 89
62420	Ox37	29 Aug 89
62421	Ox38	29 Aug 91
62435-36	Ox52-53	29 Aug 89
63223	Ox54	04 Oct 89
62437-42	Ox55-60	29 Aug 89
75545-46	Hi 1, 2 Frs	23 Jun 93
75547-48	Hi 3, 4 Frs	23 Jun 90
75551-53	Hi 7, 9 Frs	23 Jun 90
75556	Hi 12 Fr	23 Jun 93
3621	TAH (20)	23 Feb 87





GENERAL & PLACER RECEIPTS  
 NO 396, 1952-55,  
 RELEASE REQUIRED.

WATER LEVEL JULY 9 1958

OX LAKE CLAIMS  
 Claim Location Map  
 Omineca Mining Division  
 Map 93 E / 11 E

1:50,000 OX 85-2

13 PANTHER WEST

### LOCATION AND ACCESS

The Ox Lake property, consisting of 39 claims and fractions and the 20-unit TAH claim, is located on the south shore of Tahtsa Reach surrounding Ox Lake. The claims are accessible by three modes. One may fly directly to the claims by helicopter from Houston, B.C., a distance of 100 kms. Fixed-wing aircraft from Burns Lake can land in Tahtsa Reach north of the claims but a canoe is required to gain access through the deadfall to the shore. One can drive to Wistoria and then boat to the claims along Tahtsa Reach. Ox Lake is over one-half mile long but prevailing winds at this 1,070 m elevation make fixed-wing lake access treacherous.

### HISTORY

The Ox Lake property was staked in 1968 by ASARCO and Silver Standard Mines. The two companies were participating in the Sweeney Lake Syndicate with the objective of the syndicate being the primary acquisition of areas favourable for porphyry copper-type mineralization. A granodiorite intrusion at Ox Lake was noted to be compositionally similar to that of the Huckleberry porphyry deposit 8 kilometers to the west.

Seventy-two holes totalling 4,850 m were drilled in hornfels on the west side of the Ox Lake porphyry. Open-pit geological reserves were calculated to be 23.6 millions tonnes of 0.35% copper equivalent. Since then, little work has been carried out on the property.

### 1985 EXPLORATION PROGRAM

The Company employed Mr. A. Potter, formerly of Silver Standard Mines Ltd. and an individual familiar with the property to carry out a reconnaissance lithogeochem survey of the property. Mr. Potter was employed from October 9th to November 2nd and was actually on the property from October 11th to October 27th. The objective of the program was to re-examine the property for its precious metal potential.

When the property was explored in the late 1960's, work was concentrated on defining the copper-molybdenum mineralization. The current program had three objectives: 1) to delineate and sample the known veins, 2) to search for additional exposed veins, and 3) to collect regional rock samples to be analyzed for gold content. Unfortunately on October 15th, an accumulation of 40 cms of snow during a blizzard, precluded the possibility of attaining all of the objectives of the program. However, regional rock sampling, silt sampling, and the sampling of one precious metal vein were carried out. The silver vein on the bluff northwest of Ox Lake could not be located beneath the snow and more work is recommended for the summer of 1986.

## GEOCHEMICAL SURVEY

### Program

A total of 17 rock samples and 6 stream sediment samples were collected from the property. The samples were assayed for their precious metal content by Acme Analytical Lab, 852 E. Hastings Street, Vancouver, B.C. In addition, four of the rock and the 6 stream sediment samples were analyzed for trace element content by 30-element ICP. Descriptions of the samples collected are included in Appendix A with the analytical results and method presented in Appendix B.

### Vein

The polymetallic vein sampled in the current program is located near the core shack. The vein strikes east-west and dips 85° south. The vein was identified at surface by an irregular line of gossanous float. It varies in width from 30 cm up to 1 m and consists of quartz and sulfides. The dominant sulfide is galena and it occurs as ribbons within the vein, concentrated along the vein selvage.

The vein was sampled in two places where it is best exposed. The samples were taken of high grade vein selvage material. The samples were up to 10 cm thick. Sample site A returned silver assays of 21.5 ounces per ton (737g/T)



on the north side of the vein and 17.7 ounces (607 g/T) on the south side. At sample site 2 these values were 2.17 ounces (74g/T) and 33.8 ounces (1159g/T) respectively.

The silver/lead ratio of the vein averages 1 oz Ag:1.7% Pb and the Pb:Zn ratio averages 5:1. Due to the limited sample population, both of these ratios are approximated.

### Lithogeochem

Geologically, the property is underlain by intermediate volcanics with minor sediments. The porphyry stock intruding the sediments and volcanics has a granodiorite core surrounded by quartz monzonite.

The lithogeochemical samples were collected from all rock types and an attempt was made in the lithogeochem survey to collect samples exhibiting alteration or veining. All of the samples collected contain only background values of gold.

The four samples analyzed by 30-element ICP have background values of most elements. Sample 19426, an altered intermediate volcanic from the north end of the property, has elevated arsenic and antimony values. Minor sulfides were noted in the rock and it is likely that the arsenic and antimony are associated with the pyrite in microveins. Sample 19430 has elevated copper and zinc values. This is encouraging as the sample was taken from an exposure of intermediate volcanics north of the Ox Lake porphyry. This area has not received much attention in the past.

### Stream Sediment

The stream sediment samples were collected at the confluence of the stream with Tahtsa Reach on the TAH claim. The samples are therefore representative of significant drainage areas. All samples contain background gold values suggesting that, within the area of the TAH claim drained by the 5 sampled streams, there is unlikely to be any outcropping of gold-bearing units.

Sample 6452 (Appendix B), however, has a silver content (Ag) at least four times that of the other samples. It has, as well, slightly elevated copper, lead and zinc values, all characteristic of the minerals of the polymetallic veins known on the property. A check analysis of these samples by AA after a hot nitric acid digestion indicated sample 6452 is anomalous in silver. It has 1.3 ppm silver while the remaining samples contain 0.4 ppm silver on average. The lead content in sample 6452 at 132 ppm is also four times the content of the other samples.

Sample 6452 was collected from a stream which drains a northeast trending height of land 150 m above the level of Tahtsa Reach. A 1978 IP survey carried out in this area identified a broad anomaly which has been neither drilled nor prospected. The elevated Mo value (19 ppm) in sample 6451, which also drains this area, indicates that more detailed upstream sampling is warranted.

#### CONCLUSIONS AND RECOMMENDATIONS

1. Detailed mapping and sampling of the silver-bearing veins exposed near the camp and on the bluff.
2. Follow-up stream sediment sampling of the drainage tested by sample 6452.
3. Detailed prospecting in the area of the IP anomaly located 1.5 kilometres west of Ox Lake.
4. Detailed prospecting and mapping along north-south traverses immediately west of Ox Lake across the TAH claim.

The precious metal potential of the property remains largely untested. The limited reconnaissance program carried out this year in conjunction with the program recommended for 1986 should give sufficient information to enable the joint venture participants in making the decision on whether or not to commit additional funds for the re-evaluation of this porphyry copper property.

REFERENCES

MacIntyre, D.G. (1985)

Geology and Mineral Deposits of the Tahtsa Lake District, West Central British Columbia, B.C. Ministry of Energy, Mines & Petroleum Resources, Bulletin 75.

Richards, G.G. (1976)

Ox Lake in Porphyry Deposits of the Canadian Cordillera, A. Sutherland Brown, editor, C.I.M. Special Vol. 15, pp. 289-298.

Silver Standard Mines Ltd. (1968-1976)

Various company reports.

PROGRAM PROPOSAL 1986

Office Preparation		\$600.00
1 Geologist 2 days @ \$200/day	\$400.00	
Maps, field gear	\$200.00	
Travel		\$2,475.00
1 Geologist 3 days @ \$200/day	\$600.00	
1 Assistant 3 days @ \$125/day	\$375.00	
3 days truck rental @ \$30/day	\$90.00	
3 days accommodation @ \$70/day	\$210.00	
Gas	\$200.00	
4 hours fixed-wing ferrying @\$125/hr	\$500.00	
Truck mileage 2,000 km @ \$0.25/km	\$500.00	
Field		\$2,500.00
1 Geologist 5 days @ \$200/day	\$1,000.00	
1 Assistant 5 days @ \$125/day	\$725.00	
Tent & radio 5 days @ \$20/day	\$100.00	
Food	\$400.00	
Assaying	\$250.00	
		<u>\$5,575.00</u>
+ 10% overhead (contingency)		<u>557.50</u>
	TOTAL	<u>\$6,132.50</u> =====

1985 PROGRAM

Itemized Cost Statement

<u>Personnel</u>		\$2,040.00
1 Geotechnician	13 days @ \$140/day	\$1,820.00
1 Supervisor	1 day @ \$220/day	220.00
<u>Food and Accommodation</u>		610.00
10 camp days @ \$40/day		400.00
3 commercial days @ \$70/day		210.00
<u>Transportation</u>		1,764.50
Fixed Wing Burns Lake - Ox Lake return		564.50
Vancouver to Burns Lake return		
4x4 2,400 kms @ 30¢/km		600.00
5-day rental @ \$80/day		400.00
Gas		200.00
<u>Geochemical Samples</u>		212.40
Rock 4 30-element ICP @ \$9.50/ea		38.00
1 Ag-assay @\$9.50/ea		9.50
3 Pb, Zn, Au, Ag assays @\$20.50/ea		61.50
11 Au, Ag geochem @ 4.50/ea		49.50
Soil 7 30-element ICP @ \$7.50/ea		53.90
<u>Report Preparation</u>		920.00
1 Geologist 3 days @ \$220/day		660.00
1 Draftsman 1 day @ \$160/day		160.00
<u>Miscellaneous</u>		
Radio rental, bush supplies, etc.		<u>118.10</u>
		<u><u>\$5,665.00</u></u>

STATEMENT OF AUTHOR'S QUALIFICATIONS

I, Robert Allan Quartermain, of 2303 - 1600-D Beach Avenue, Vancouver, British Columbia, do hereby certify that:

I am a graduate of the University of New Brunswick (BSc, 1977).

I am a graduate of Queen's University (MSc, 1981).

I am a member of the Geological Association of Canada.

I have been practising my profession as a field geologist since 1977, employed by Canadian and American mining companies involved in the exploration for and development of mineral deposits.



R.A. Quartermain

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS, VANCOUVER B.C.  
PH: (604)253-3158 COMPUTER LINE:251-1011

DATE RECEIVED DEC 16 1985

DATE REPORTS MAILED

*Dec. 19/85*

### ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PULVERIZED TO -100 MESH.  
AG\*\* AU\*\* BY FA+AA

ASSAYER *T. Saundry* DEAN TOYE OR TOM SAUNDY, CERTIFIED B.C. ASSAYER

CONSOLIDATED SILVER FILE# 85-3305A

PAGE# 1

SAMPLE	Pb %	Zn %	Ag** oz/t	Au** oz/t
19413	1.65	.81	2.17	.002
19414	-	-	-	.001
19415	-	-	-	.001
19418	11.03	5.41	21.46	.002
19424	-	-	17.71	.004
19425	21.10	4.13	33.81	.003

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS, VANCOUVER B.C.  
PH: (604) 253-3158 COMPUTER LINE: 251-1011

DATE RECEIVED DEC 16 1985

DATE REPORTS MAILED *Dec. 19/85*

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PULVERIZED TO -100 MESH.  
ANAL BY FA7AA

ASSAYER *V. Saundry* DEAN TOYE OR TOM SAUNDRY, CERTIFIED B.C. ASSAYER

CONSOLIDATED SILVER FILE# 85-3305

PAGE# 2

SAMPLE	Ag ppm	Au** ppb
19416	-	7
19417	-	8
19420	-	5
19421	-	2
19422	.3	1
19423	-	6
19426	-	1
19427	-	1
19428	-	1
19429	-	1
19430	-	2



ACME ANALYTICAL LABORATORIES LTD.

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

PHONE 253-3158

DATA LINE 251-1011

**GEOCHEMICAL ICP ANALYSIS**

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MM, FE, CA, P, CR, NG, BA, TI, B, AL, NA, K, W, SI, ZR, CE, SM, Y, NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 - SAMPLE TYPE: SOIL AU: ANALYSIS BY FA+AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: DEC 16 1985 DATE REPORT MAILED: *Dec. 19/85* ASSAYER: *T. Saundry* DEAN TOYE OR TOM SAUNDRY. CERTIFIED B.C. ASSAYER

CONSOLIDATED SILVER STANDARD MINES FILE # 85-3305

PAGE 1

SAMPLE#	No	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au11
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	%	%	%	%	PPM	PPM
6451	19	51	60	193	.4	19	37	9381	7.07	49	7	ND	5	41	1	2	2	87	.34	.11	21	23	.59	173	.06	7	1.88	.03	.07	1	1
6452	4	62	169	395	1.5	51	30	3119	5.65	36	8	ND	4	44	2	12	2	63	.46	.17	27	39	.65	148	.03	8	2.34	.01	.08	1	1
6453	2	28	37	140	.4	19	11	1151	3.71	17	5	ND	3	35	1	10	4	70	.58	.09	19	26	.59	111	.08	6	1.66	.03	.05	1	2
6454	1	54	33	250	.4	37	11	625	3.21	20	5	ND	1	31	1	9	2	54	.40	.09	18	28	.49	115	.05	5	2.35	.01	.06	1	1
6455	1	34	19	147	.2	16	8	689	2.23	7	5	ND	1	40	1	2	2	42	.47	.09	19	14	.41	104	.05	3	1.47	.02	.05	1	1
6466 -80 MESH	1	26	42	466	.1	12	10	2841	5.63	34	5	ND	3	24	1	6	6	78	.46	.30	13	19	.47	151	.09	9	1.99	.01	.06	1	1
6466 +80&ROCK	1	16	3	211	.1	6	8	2103	5.14	28	5	ND	1	9	1	3	3	76	.21	.15	5	15	.75	56	.02	2	1.62	.04	.05	1	1
STD C/FA-AU	22	63	42	141	7.1	70	29	1119	3.99	40	15	8	35	51	19	17	21	63	.48	.15	39	63	.88	181	.08	40	1.73	.06	.11	11	52

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS, VANCOUVER B.C.  
PH: (604)253-3158 COMPUTER LINE:251-1011

DATE RECEIVED FEB 28 1986

DATE REPORTS MAILED *Mar 14/86*

**GEOCHEMICAL ASSAY CERTIFICATE**

SAMPLE TYPE : PULP

ASSAYER ... *D. Toye* ... DEAN TOYE, CERTIFIED B.C. ASSAYER.

CONSOLIDATED SILVER STANDARD FILE# 85-3305 R

PAGE# 1

SAMPLE	Pb ppm	Ag ppm
6451	52	.2
6452	138	1.3
6453	29	.3
6454	32	.4
6455	22	.4
6466 -80 MESH	38	.2
6466 +80 & ROCK	18	.1

CONSOLIDATED SILVER STANDARD MINES FILE # 85-3305

PAGE 2

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
19423	1	301	18	75	.1	4	30	644	5.69	25	5	ND	1	8	1	7	4	116	.68	.13	9	1	.60	21	.28	3	1.21	.09	.04	1
19426	3	15	23	13	.4	2	1	54	4.22	1118	5	ND	2	11	1	37	2	8	.04	.04	8	1	.03	47	.01	5	.24	.03	.05	1
19428	1	6	8	31	.1	23	7	306	3.65	17	5	ND	1	4	1	2	3	41	.02	.04	7	42	.19	13	.01	4	.80	.01	.02	1
19430	4	1283	39	345	1.9	7	16	503	11.93	8	6	ND	2	3	1	8	101	40	.23	.12	14	9	.83	13	.05	2	.98	.06	.03	1

APPENDIX A

Sample Procedure and Sample Description

## APPENDIX A

### Sample Procedure and Sample Description

Using geological plans and outcrop maps of the property, reconnaissance traverses were laid out in areas of known outcrop. As the property is dominated by Hazelton volcanics, samples weighing 500 gms or more were taken from those outcrops displaying some type of alteration, i.e. quartz veining, hematite, sericite, pyrite. The samples were then sent to Acme Analytical Lab, pulverized to -100 mesh and analyzed by standard gold/silver assaying, and geochemical techniques. A list of the samples follows.

### Stream Sediments

Stream sediments were collected at the confluence of a number of streams with Tahtsa Reach from small pools and backwashes where heavy minerals might concentrate due to the decrease in stream velocity. Samples consisted of sand to mud-sized particles. The -80 mesh fraction of the sample was analyzed by 30-element ICP. No preconcentration of the samples were undertaken.

ROCK SAMPLES

<u>Sample No.</u>	<u>Rock Type</u>	<u>Description</u>
19413	Granodiorite	Hollocrystalline, equigranular granodiorite with sulfides
19414	Andesite	Greenish, grey tuff
19415	Andesite	Greenish, grey tuff with minor sericite
19416	Andesite	Grey tuff with disseminated pyrite
19417	Andesite	Grey tuff with microfractures with sericite alteration selvages
19418	Granodiorite/Vein	Polymetallic (galena) vein in coarse phaneritic granodiorite
19419	Andesite	Dark grey with lapilli fragments
19420	Andesite	Dark green/grey with microveins of quartz
19421	Granite	Equigranular quartz-feldspar-biotite granite
19422	Andesite	Dark green with minor sulfides
19423	Andesite	Dark grey with hematitic fractures
19424	Granodiorite/Vein	Galena vein with edge of grandodiorite
19425	Vein	Massive galena
19426	Andesite	Grey tuff with minor quartz veining
19427	Greywacke	Grey grit with feldspar
19428	Andesite	Dark grey with minor sulfides
19429	Andesite	Green tuff with hematite stain
19430	Andesite	Dark grey with minor sericite

APPENDIX B

Analytical Results and Methodology



## ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

1985

Acme Analytical continues to update with mass spectrographic analysis which should be fully operational by May, 1985. In general, mass spec offers detection limits which are at least 100-fold lower than ICP or flame AA. These limits are comparable to graphite furnace AA, but the mass spec can analyze up to 60 elements simultaneously.

Acme has pioneered low cost multi-element ICP which has better detection and precision than AA. Mass spec will further expand the range of elements and isotopes available to mineral exploration programs.

### SPACE

Total laboratory, sample preparation and sample storage has been expanded to 12,000 square feet.

### EQUIPMENT

1. Our ICP system has been expanded, and a fourth unit has been purchased which will allow us to determine up to 45 elements simultaneously.
2. AA spectrophotometers have been increased to 8.
3. Sample preparation, weighing and dissolution facilities have been increased.
4. A LECO Induction Furnace has been installed for determining Carbon and Sulfur simultaneously in geological and metallurgical samples.
5. An UA3 Laser Fluorometer from Scintrex is now used for determination of U in water to .01 ppb.
6. Two ICP mass spectrographs will be operational by May, 1985.

### TECHNOLOGY

1. Fire Assay laboratory for Ag, Au, Pt, Pd has been installed.
2. ICP multi element packages for water, geochem and assay programs have been developed.
3. Lower detection limits for some elements have been achieved by graphite furnace AA.

### TECHNICAL ACHIEVEMENTS

1. Background corrected Atomic Absorption analysis of Ag and Au since 1971.
2. Best proven precision, accuracy and price for MoS<sub>2</sub> assays in North America.
3. Pioneered geochemical analysis by ICP at or to better detection limits than AA, including Ag, As, U, Th and W.

### PROVEN PERFORMANCE

Our logistical and technical performance for our clients has been demonstrated on the Gambier, Capoose Lake, Trout Lake, Blackdome, Red Mountain, Carolin, Cirque, Minago River, Quesnel River, Terra Swede, Musto and other major projects.

MAY 1985



GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR Mn,Fe,Ca,P,Cr,Mg,Ba,Ti,B,Al,Na,K,W,Sr,Zr,Ce,Sn,Y,Mo and Ta. Au DETECTION LIMIT BY ICP IS 3 PPM.  
 SAMPLE TYPE: ROCKS AND CORES AU\*\* ANALYSIS BY FA+AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: NOV 21 1984 DATE REPORT MAILED: *Nov 23/84* ASSAYER: *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Ag**	Loi
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	%
NO-392	4	126	3	40	.1	88	22	465	2.53	2	5	ND	2	8	1	2	1	49	.74	.03	2	75	.79	12	.13	4	1.17	.07	.10	6	14	2.0
NO-401	5	106	1	16	.3	95	19	376	1.08	2	5	ND	2	15	1	2	2	22	2.59	.02	3	30	.28	11	.12	5	.70	.07	.04	2	6	3.4
NO-402	11	56	7	18	.1	38	9	220	2.04	4	5	ND	2	14	1	2	2	29	.82	.05	2	39	.35	38	.15	3	.66	.06	.05	2	4	2.2
NO-462	3	39	8	10	.7	4	4	174	5.37	63	5	4	2	5	1	6	2	9	.03	.06	2	1	.02	23	.01	2	.18	.02	.06	2	7800	4.0
NO-1215	1	26	4	42	.1	1	6	367	2.53	4	5	ND	2	15	1	2	2	54	.84	.10	6	3	.83	25	.09	10	1.52	.12	.08	2	2	1.5
NO-1216	2	96	5	60	.1	41	19	748	4.56	15	5	ND	2	10	1	2	2	121	5.27	.03	5	63	2.46	10	.14	4	3.09	.02	.02	2	4	9.7
NO-1217	2	113	7	28	.4	42	25	1100	3.24	73	5	ND	2	86	1	40	2	9	6.35	.02	2	14	2.77	82	.01	5	.18	.01	.10	2	6	18.1
NO-1218	2	87	1	53	.1	50	18	805	4.37	13	5	ND	2	60	1	2	3	121	1.95	.03	2	118	3.90	32	.09	3	2.99	.02	.30	2	2	8.4
NO-1219	1	43	3	55	.2	115	25	834	4.32	34	5	ND	2	67	1	2	5	59	3.30	.01	2	181	4.73	27	.01	2	2.91	.01	.06	2	3	13.7
NO-1220	20	9	15	89	.1	4	4	44	3.33	26359	14	ND	32	2	1	6	2	2	.05	.01	2	2	.07	19	.01	2	.15	.04	.05	2	100	1.0

WHOLE ROCK ICP ANALYSIS

A .1000 GRAM SAMPLE IS FUSED WITH .60 GRAM OF LiO2 AND IS DISSOLVED IN 50 MLS 5N HNO3. SAMPLE TYPE: PULFS

DATE RECEIVED: DEC 19 1984 DATE REPORT MAILED: *Dec 21/84* ASSAYER: *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

SAMPLE#	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Loi	Sum
	%	%	%	%	%	%	%	%	%	%	%	%	-
71562	51.80	14.49	8.50	4.60	8.00	2.80	2.95	.49	.32	.21	.04	4.1	98.31
71563	52.86	14.74	8.36	4.65	7.97	3.00	2.84	.48	.34	.20	.04	4.4	99.89
71603	52.51	14.94	8.30	4.46	7.71	3.11	2.88	.49	.34	.21	.03	4.6	99.59
71604	51.09	14.68	7.91	4.50	9.33	3.03	2.78	.49	.33	.21	.02	5.1	99.48
71683	59.38	14.09	6.94	3.25	4.87	5.21	3.37	.45	.30	.14	.01	2.5	100.54
71684	60.07	13.96	5.73	2.78	4.06	4.45	4.89	.34	.22	.11	.02	2.0	98.68
71707	49.62	3.55	11.53	18.05	7.80	.35	.01	.27	.17	.26	.46	6.5	98.58
71708	49.33	3.59	11.21	17.74	8.25	.31	.18	.26	.15	.26	.47	6.8	98.56
71861	56.82	17.13	6.87	2.95	5.51	4.19	1.85	.51	.16	.19	.01	3.0	99.20
71862	55.28	17.69	6.59	2.73	6.49	3.37	2.62	.49	.16	.15	.01	3.3	98.89

ASSAY CERTIFICATE

1.00 GRAM SAMPLE IS DIGESTED WITH 50ML OF 3-1-3 OF HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR.  
 AND IS DILUTED TO 100ML WITH WATER. DETECTION FOR BASE METAL IS .012.  
 - SAMPLE TYPE: SAND AU# 10 GRAM REGULAR ASSAY

DATE RECEIVED: JULY 26 1984 DATE REPORT MAILED: *July 28/84* ASSAYER: *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	TH	CD	SB	BI	AU
	%	%	%	%	OZ/T	%	%	%	%	%	%	%	%	%	%	OZ/T
SAND	.002	.33	.45	.63	25.69	.11	.01	.05	5.29	.13	.001	.01	.009	.002	.004	.001



## ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

### GEOCHEMICAL LABORATORY METHODOLOGY - 1985

#### Sample Preparation

1. Soil samples are dried at 60°C and sieved to -80 mesh.
2. Rock samples are pulverized to -100 mesh.

#### Geochemical Analysis (AA and ICP)

0.5 gram samples are digested in hot dilute aqua regia in a boiling water bath and diluted to 10 ml with demineralized water. Extracted metals are determined by :

##### A. Atomic Absorption (AA)

Ag\*, Bi\*, Cd\*, Co, Cu, Fe, Ga, In, Mn, Mo, Ni, Pb, Sb\*, Tl, V, Zn  
(\* denotes with background correction.)

##### B. Inductively Coupled Argon Plasma (ICP)

Ag, Al, As, Au, B, Ba, Bi, Ca, Cd, Co, Cu, Cr, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Th, Ti, U, V, W, Zn.

#### Geochemical Analysis for Au\*

10.0 gram samples that have been ignited overnight at 600°C are digested with 30 mls hot dilute aqua regia, and 75 mls of clear solution obtained is extracted with 5 mls Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction (Detection Limit = 1 ppb).

#### Geochemical Analysis for Au\*\*, Pd, Pt, Rh

10.0 - 30.0 gram samples are subjected to Fire Assay preconcentration techniques to produce silver beads.

The silver beads are dissolved and Au, Pd, Pt, and Rh are determined in the solution by graphite furnace Atomic Absorption. Detections - Au=1 ppb; Pd, Pt, Rh=5 ppb

#### Geochemical Analysis for As

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml. As is determined in the solution by Graphite Furnace Atomic Absorption (AA) or by Inductively Coupled Argon Plasma (ICP).

#### Geochemical Analysis for Barium

0.25 gram samples are digested with hot NaOH and EDTA solution, and diluted to 20 ml.

Ba is determined in the solution by ICP.

#### Geochemical Analysis for Tungsten

0.25 gram samples are digested with hot NaOH and EDTA solution, and diluted to 20 ml. W in the solution determined by ICP with a detection of 1 ppm.

#### Geochemical Analysis for Selenium

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml with H<sub>2</sub>O. Se is determined with NaBH<sub>3</sub> with Flameless AA. Detection 0.1 ppm.



**ACME ANALYTICAL LABORATORIES LTD.**

**Assaying & Trace Analysis**

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

Geochemical Analysis for Uranium

0.5 gram samples are digested with hot aqua regia and diluted to 10 ml.

Aliquots of the acid extract are solvent extracted using a salting agent and aliquots of the solvent extract are fused with NaF,  $K_2CO_3$  and  $Na_2CO_3$  flux in a platinum dish.

The fluorescence of the pellet is determined on the Jarrel Ash Fluorometer.

Geochemical Analysis for Fluorine

0.25 gram samples are fused with sodium hydroxide and leached with 10 ml water. The solution is neutralized, buffered, adjusted to pH 7.8 and diluted to 100 ml.

Fluorine is determined by Specific Ion Electrode using an Orion Model 404 meter.

Geochemical Analysis for Tin

1.0 gram samples are fused with ammonium iodide in a test tube. The sublimed iodine is leached with dilute hydrochloric acid.

The solution is extracted with MIBK and tin is determined in the extract by Atomic Absorption.

Geochemical Analysis for Chromium

0.1 gram samples are fused with  $Na_2O_2$ . The melt is leached with HCl and analysed by AA or ICP. Detection 1 ppm.

Geochemical Analysis for Hg

0.5 gram samples is digested with aqua regia and diluted with 20% HCl.

Hg in the solution is determined by cold vapour AA using a F & J scientific Hg assembly. An aliquot of the extract is added to a stannous chloride / hydrochloric acid solution. The reduced Hg is swept out of the solution and passed into the Hg cell where it is measured by AA.

Geochemical Analysis for Ga & Ge

0.5 gram samples are digested with hot aqua regia with HF in pressure bombs.

Ga and Ge in the solution are determined by graphite furnace AA. Detection 1 ppm.

Geochemical Analysis for Tl (Thallium)

0.5 gram samples are digested with 1:1  $HNO_3$ . Tl is determined by graphite AA. Detection .1 ppm.

Geochemical Analysis for Te (Tellurium)

0.5 gram samples are digested with hot aqua regia. The Te extracted in MIBK is analysed by AA graphite furnace. Detection .1 ppm.

Geochemical Whole Rock

0.1 gram is fused with .6 gm  $LiBO_2$  and dissolved in 50 mls 5%  $HNO_3$ . Analysis is by ICP or M.S. ICP gives excellent precision for major components. The M.S. can analyze for up to 50 elements.



## ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

### Suggestions for Effective use of Analytical Services

#### 1. General Sampling

- A. Rocks - In general  $\frac{1}{2}$  to 2 lb of sample are required. Large boulders should be broken down to chip size with a 20 lb sledge hammer. A representative sample is then taken from these chips. The lab will crush, split and pulverize.
- B. Cores - Drill cores should be split into halves for assaying
- C. Soils - The organic "A" horizon gives good base metal responses. Supply about one cup of material in a soil or paper envelope. The soil is treated in one of three methods after drying :-
  - 1) -80 mesh sieving (standard).
  - 2) -80 mesh sieving + pulverizing.
  - 3) pulverizing the whole sample.

Samplers must not wear any jewelry.

#### 2. Shipping

- A. Local and Within Canada - use Greyhound or Pacific Stage Lines. For large drill programs use a truck line.
- B. U.S. Customers - for surface transport use UPS and address to :-

Acme Analytical Laboratories Ltd.,  
c/o Pac Ex Services,  
140 - 14th St.,  
Blaine, Wash. 98230

Air freight shipments are addressed to :-

Acme Analytical Laboratories Ltd.,  
c/o Hogg & Boxall,  
Vancouver, B.C.

Shipments from the U.S. should be labelled "Geological Samples for Analysis - No Commercial Value".

#### 3. Suggested Geochemical Analyses

- A. Rocks with No Visible Mineralization - 30 element ICP + geochemical Au.
- B. Rocks with High Sulphides - 16 element ICP Assay.
- C. Cores - assays for elements of mineralization and possible 30 element ICP.
- D. Soils - 30 element ICP + geochemical Au.

#### 4. Samples with Possible Native Gold

For rocks and cores with nugget or native gold, request that the total sample be pulverized and sieved on a 140 mesh screen. Two fire assays are then required for each sample; one on the entire +140 mesh fraction for any possible native gold and one on the -140 mesh. (1 A.T.)

Pan or sluice concentrates are best treated by cyclone concentration and fire assay for total Au.



**ACME ANALYTICAL LABORATORIES LTD.**

**Assaying & Trace Analysis**

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

5. Guidelines for Data Interpretation

A. 30 Element ICP - typical value from ICP

Mo - normal soils	1-3 ppm	Th - normal soils	3 ppm
highly decomposed organics	5 ppm	Sr - normal soils	40 ppm
shales	30 ppm	Cd - normal soils	1 ppm
Cu - normal soils	20 ppm	Sb - normal soils	less than 2 ppm
high organics	100 ppm	Bi - normal soils	less than 2 ppm
Pb - normal soils	5 ppm	V - normal soils	40 ppm
Zn - normal soils	30 ppm	Ca - normal soils	0.5 %
high organics	200 ppm	P - normal soils	0.5 %
Ag - normal soils	0.2 ppm	La - normal soils	10 ppm
high organics	0.6 ppm	Cr - normal soils	10 ppm
Ni - normal soils	20 ppm	Mg - normal soils	0.5 %
Co - normal soils	15 ppm	Ba - normal soils	20 ppm
Mn - normal soils	300 ppm	Ti - normal soils	0.1 %
Fe - normal soils	2 %	B - normal soils	1 ppm
As - normal soils	5 ppm	Al - normal soils	2 %
U - normal soils	2 ppm	Na - normal soils	0.05 %
Au - normal soils	ND	K - normal soils	0.1 %
(ICP detection limit = 2 ppm)		W - normal soils	2 ppm

B. Geochemical Au

Normal soil 1-3 ppb

6. Geochemical ICP - Notes on Solubilities of Elements

Barites, chromites .. insoluble	As .....	soluble up to 20,000 ppm
Magnetite .....	Pb .....	soluble up to 10,000 ppm
Al, Ca, P, Mg .....	Sb, Bi ..	soluble up to 1000 ppm
Na, K, Ti .....	Ag, W ...	soluble up to 100 ppm

7. Conversion Factors

1 Troy oz = 31.10 g  
 1 oz/ton = 34.3 ppm = 34.3 g/tonne = 34,300 ppb  
 1 % = 10,000 ppm

8. Whole Rock Geochemical Analysis

The lithium metaborate fusion dissolves most types of rock except for very high chromite and very massive sulfides. Zr, Ba, Ce, Y and Sr are also available from this fusion by ICP. Other elements will soon be available by mass spectrographic analysis. The proposed 50 element package includes Ag, Al, As, Au, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cs, Eu, Fe, Ga, Ge, Hg, In, K, La, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, Re, Rh, S, Sb, Se, Si, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr.

## SUPPLI

Plastic Bags, Ties, Tags are available on request.

## SAMPLE STORAGE

Crushed rocks or rejects are retained for 30 days, and discarded unless claimed.

Pulps are retained for one year and discarded unless claimed.

## SHIPPING OF SAMPLES

All shipments from outside Canada should be marked "GEOLOGICAL SAMPLES FOR ANALYSIS - NO COMMERCIAL VALUE".

Free Custom Clearance.

By Air Freight:

Acme Analytical  
c/o Hogg & Boxall  
Vancouver, B.C.

By Surface - UPS:

Acme Analytical  
c/o PacEx  
140 - 14th St., Blaine, Wa.

Discounts by Contract.

Turnaround time is generally around three days, and can be 24 hours by special contract.

Free pick up from downtown Vancouver and Bus Depot.

## FIELD SERVICES

Portable crushers and core splitters are available at reasonable rentals, cut your shipping costs on large drilling programs.

All prices subject to change without notice.

## SPECIAL SERVICE

Modem data transfer

Statistical Analysis:

- SD
- Mean
- Median
- Frequency Plot
- Grid Coordinate Contour Plot



Bowing Tsang Joe Phang  
ICP Analysis

# ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Metal Analysis

## SCHEDULE OF FEES

### ASSAYING and GEOCHEMICAL ANALYSES

24 hr. per day operation

Effective March 1, 1985

ACME ANALYTICAL LABORATORIES LTD.  
852 EAST HASTINGS STREET  
VANCOUVER, B.C. V6A 1R8

TELEPHONE: (604) 253-3158  
COMPUTER DATA LINE: (604) 251-1011

Dean Toya, BSc, Certified BC Assayer, President  
Bowing Tsang, BSc, Lab Manager  
Raymond Sam, BSc, Assistant Manager  
Tom Saundry, BSc, Certified BC Assayer, Chief Assayer

## GEOCHEMICAL ANALYSES

Rocks, Soils and Sediments

### Single Element Determinations

#### GROUP I - Base Metals by Aqua Regia Extraction and Atomic Absorption

Element	Lowest Value Reported	Price **
Antimony *	3 ppm	
Bismuth *	3 ppm	
Cadmium *	0.1 ppm	
Chromium	1 ppm	
Cobalt	1 ppm	First Element \$2.00
Copper	1 ppm	
Iron	0.01%	Each Subsequent Element .75
Lead	2 ppm	
Lithium	2 ppm	
Manganese	5 ppm	
Molybdenum	1 ppm	
Nickel	2 ppm	
Silver *	0.1 ppm	
Vanadium	2 ppm	
Zinc	2 ppm	

\* with background correction.

#### GROUP II - Base Metals by Specific Extraction and Instrumental Techniques

Element	Method	Detection	Price **
Arsenic	ICP	2 ppm	\$3.00
Berium (Total)	ICP	10 ppm	3.00
Carbon (Total)	LECO	10 ppm	5.00
Carbon plus Sulfur	LECO	10 ppm	6.00
Chromium (Total)	AA	5 ppm	3.00
Fluorine	Specific Electrode	10 ppm	4.00
Gallium	AA	1 ppm	4.00
Germanium	AA	1 ppm	4.00
Mercury	AA	2 ppb	3.00
pH	Meter	0.1 pH	1.25
Selenium	AA	0.1 ppm	4.00
Sulphur	LECO	10 ppm	5.00
Tellurium	AA	0.1 ppm	4.00
Thallium	AA	0.1 ppm	4.00
Tin	AA	1 ppm	3.00
Tungsten	ICP (Fusion)	1 ppm	3.00
Uranium	UA <sub>3</sub>	1 ppm	4.00

#### GROUP III - Noble Metals by Fire Assay and Atomic Absorption

Element	Method	Detection	Price **
Gold	AA	1 ppb	\$4.00
Gold	FA+AA	1 ppb	First Element \$5.50
Palladium	FA+AA	2 ppb	Each Subsequent Element \$2.00
Rhodium	FA+AA	2 ppb	

#### GROUP IV - Geochem Whole Rock Assay - Lithium Metaborate Fusion

SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, MgO, Na<sub>2</sub>O, K<sub>2</sub>O, MnO, TiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, Cr<sub>2</sub>O<sub>3</sub>, LOI.

Price:  
 First Metal ..... \$4.50 Each Additional ..... \$2.00  
 All 12 ..... \$2.00  
 Geochem Whole Rock Mass Spec - 50 elements ..... \$4.00  
 Aqua Regia + HF Digestions, Any 10 elements ..... \$10.00

## MULTI ELEMENT ANALYSIS BY INDUCTIVELY COUPLED ARGON PLASMA (ICP)

### GROUP V - MINERAL EXPLORATION PROGRAM ICP ANALYSIS

This program has been developed to determine economic minerals in rocks, soils and sediments for exploration geologists and geochemists. Aqua Regia digests are analyzed by ICP. This digestion and analysis is comparable to current atomic absorption technology.

Detection	Elements	Price per Sample **
0.1 ppm	Ag	
1 ppm	Cd, Co, Cu, Mn, Mo, Pb, Ni, Zn, Cr, Sr	any 5 elements \$4.60
2 ppm	As, Sb, U, Au, W, Th, Bi, La, V, Ba	any 10 elements \$5.00
0.01%	Al, Ca, Fe, K, Mg, Na, P, Ti	30 elements \$6.00

Geochem Mass Spec - Same as above but lower detections  
 + Hg, Ga, Ge, Tl, Ta, In, Eu, Pb isotopes ..... \$10.00

### GEOCHEMICAL SAMPLE PREPARATION

Soil and silt	..... \$0.50
Rock	..... 2.75
Vegetation	..... 2.75
Pulverizing of Soil	..... 1.25
Heavy Mineral Separation	..... 11.00
Cone Splitting and Sampling	..... \$0.50 per foot, \$10.00 minimum
Cyclone Concentrating	..... \$2.00/lb.

### SAMPLE STORAGE

- 80 mesh pulps are stored for one year.
- Soil rejects are normally discarded. Saving of soil rejects - 35¢ each. Rock rejects are stored for one month.

### SUPPLIES

Soil Envelopes	..... \$100.00 per thousand
Plastic Bags 7 x 13 or 12 x 20	..... At Cost
Ties	..... \$5.00 per hundred
Assay Tags	..... No charge

\*\* Minimum 20 samples per batch, or a surcharge of \$5.00 per batch. Volume Discount by Contracts only.

### HYDROGEOCHEMICAL ANALYSIS

Natural water for mineral exploration.

Analysis Price:  
 Mass Spec. 40 elements ..... \$6.00 per sample

Au detection .001 ppb	..... \$6.00 per sample
Fe detection 20 ppb	..... \$3.00 per sample
U detection .01 ppb	..... \$4.00 per sample

## ASSAYING OF ORES AND MINERALS

Aluminum	(Al)	..... \$7.50	Moisture	(H <sub>2</sub> O)	..... 5.00
Antimony	(Sb)	..... 7.50	Molybdenum	(Mo)	..... 6.75
Arsenic	(As)	..... 7.50	Molybdenum Sulfide (MoS <sub>2</sub> )	..... 7.50	
Berium	(Ba)	..... 7.50	Niobium	(Nb)	..... 10.00
Bismuth	(Bi)	..... 7.50	Nickel	(Ni)	..... 6.75
Boron	(B)	..... 7.50	Nickel (Non-sulfide) *	..... 7.50	
Cadmium	(Cd)	..... 6.75	Platinum	(Pt)	..... 12.50
Calcium	(Ca)	..... 7.50	Potassium	(K)	..... 7.50
Carbon (Total)	(C)	..... 7.50	Rhodium	(Rh)	..... 12.50
Carbon (Graphitic) *	..... 9.50	Rubidium	(Rb)	..... 7.50	
Carbon plus Sulfur (Total) *	..... 11.00	Selenium	(Se)	..... 10.00	
Cerium	(Ce)	..... 10.00	Silica	(SiO <sub>2</sub> )	..... 7.50
Chromium	(Cr)	..... 7.50	Silver	(Ag)	..... 6.75
Cesium	(Cs)	..... 10.00	Silver (Fire Assay)	..... 9.00	
Cobalt	(Co)	..... 6.75	Sodium	(Na)	..... 7.50
Copper	(Cu)	..... 6.75	Specific Gravity *	..... 6.00	
Copper (Non-sulfide) *	..... 8.00	Strontium	(Sr)	..... 7.50	
Europium	(Eu)	..... 10.00	Sulfur (Total) *	(S)	..... 7.50
Fluorine	(F)	..... 7.50	Sulfur (Sulfate)	(S)	..... 8.50
Gallium	(Ga)	..... 7.50	Tantalum	(Ta)	..... 7.50
Germanium	(Ge)	..... 7.50	Tellurium	(Te)	..... 10.00
Gold	(Au)	..... 6.75	Thallium	(Tl)	..... 10.00
Gold (Fire Assay)	..... 8.25	Thorium	(Th)	..... 7.50	
Gold plus Silver (Fire Assay)	..... 11.25	Tin	(Sn)	..... 8.00	
Iridium	(Ir)	..... 8.50	Titanium	(Ti)	..... 7.50
Iron (Total)	(Fe)	..... 7.50	Tungsten	(W)	..... 7.50
Iron (Ferrous) *	..... 9.00	Uranium	(U)	..... 7.50	
Lanthanum	(La)	..... 7.50	Vanadium	(V)	..... 7.50
Lithium	(Li)	..... 7.50	Yttrium	(Y)	..... 10.00
Lead	(Pb)	..... 6.75	Zinc	(Zn)	..... 6.75
Loss on Ignition	(LOI)	..... 2.00	Zirconium	(Zr)	..... 10.00
Magnesium	(Mg)	..... 7.50			
Manganese	(Mn)	..... 7.50			
Mercury	(Hg)	..... 7.50			

\* Minimum 5 samples per batch.  
 Other elements by Mass Spec. on request.

### Multi-Element Assay Price

Arsenic, Antimony, Bismuth, Cadmium, Cobalt, Copper, Gold, Iron, Lead, Manganese, Molybdenum, Nickel, Silver, Thorium, Uranium, Zinc.  
 Price: First element ..... \$6.75 Each Additional ..... \$3.75  
 All 16 elements ..... \$20.00

### Whole Rock Assay Prices

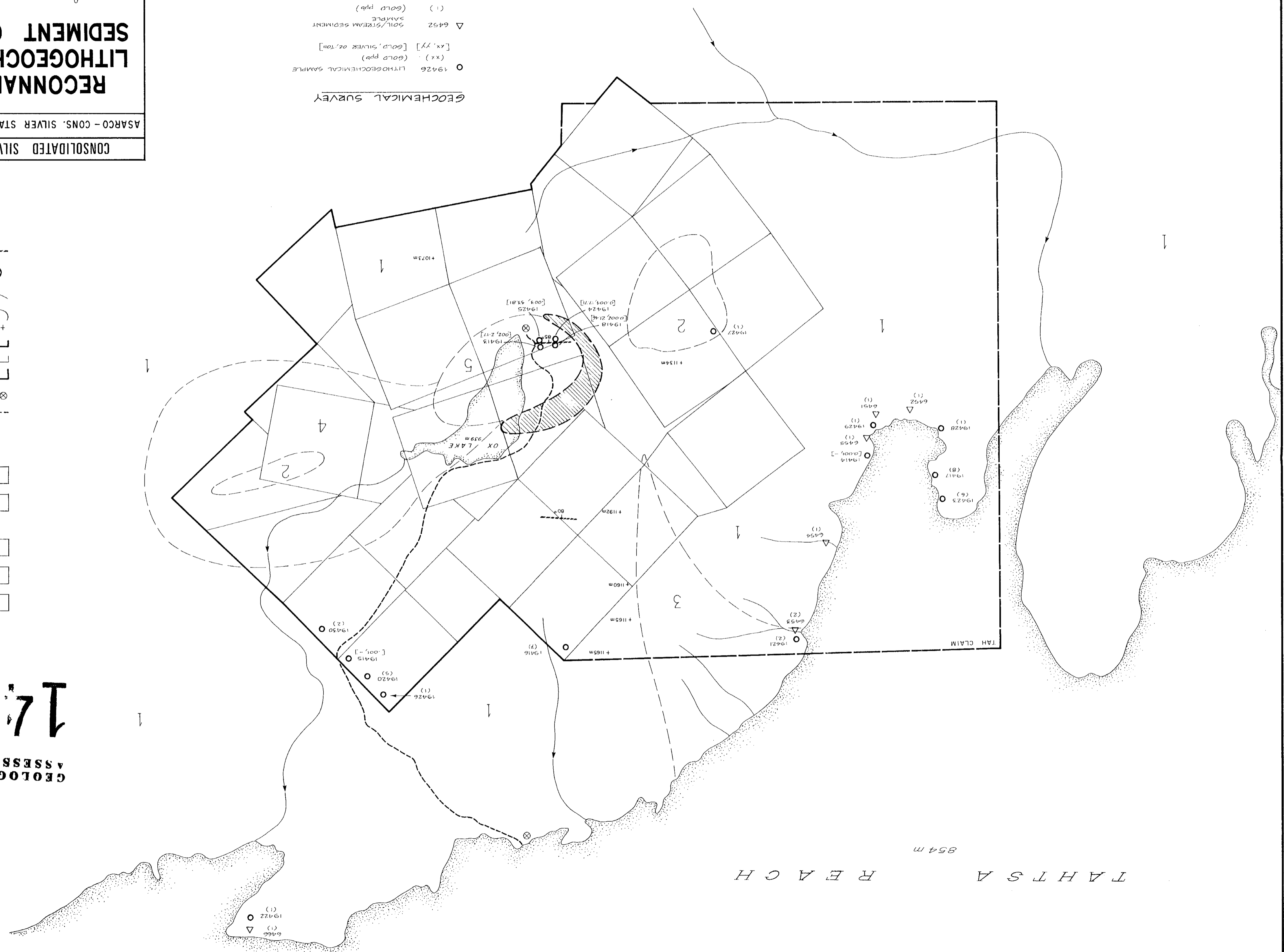
SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, MgO, Na<sub>2</sub>O, K<sub>2</sub>O, MnO, TiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, Cr<sub>2</sub>O<sub>3</sub>, LOI.

Price: First oxide ..... \$7.50 Each Additional ..... \$3.50  
 Price: All 12 ..... \$20.00  
 Volume Discounts Available.

### Sample Preparation

Drying extra wet samples ..... \$1.75 per sample  
 Rock and Core sample preparation ..... 2.75  
 Over 10 lbs. .... 0.25 per lb.  
 Compositing pulps or rejects ..... 1.25 per sample  
 Special Handling ..... \$16.00 per hour  
 Extra Pulverizing ..... \$1.50 per lb.

TAHTSA REACH 854 m



○ 19426 LITHOGEOCHEMICAL SAMPLE  
 (xx) (gold ppb)  
 [xx, yy] [gold, silver oz./ton]  
 △ 6452 SOIL/STREAM SEDIMENT SAMPLE  
 (1) (gold ppb)

GEOCHEMICAL SURVEY

- SYMBOLS**
- ⊗ CAMP
  - TRAIL
  - GROUP CLAIM BOUNDARY
  - CLAIM BOUNDARY SURVEYED
  - CLAIM BOUNDARY ASSUMED
  - +1165m HEIGHT OF LAND (metres ASL)
  - GEOLOGICAL BOUNDARY
  - CREEK
  - ▨ CU - MO MINERALIZATION
  - PREVIOUS METAL VEINS
- GEOLOGY**
- 1 VOLCANICS
  - 2 GREYWACKE, CHEST
  - 3 GRANITE
  - 4 QUARTZ FELDSPAR PORPHYRY
  - 5 QUARTZ MONZONITE

CONSOLIDATED SILVER STANDARD MINES LIMITED  
 ASARCO - CONS. SILVER STANDARD LTD. OX LAKE JOINT VENTURE  
**RECONNAISSANCE GOLD LITHOGEOCHEM AND STREAM SEDIMENT GEOCHEM SURVEY**  
 COMPILED: DRAWN: RZ SCALE: 1:10000 MAP: DATE: FEB 1986 DWG: OX-85-3

17,482

GEOLOGICAL BRANCH ASSESSMENT REPORT

