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GEOLOGICAL AND GEOCHEMICAL RE On The LODE 3.4.5.6. and 8 CLAIM GR	ACTION: Date received back from amendament
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Skeena Mining Division British Columbia

for

WHITE CHANNEL RESOURCES INCORPORATED #718-744 West Hastings Street Vancouver, B.C. V6C 1A5



Ву

Andris Kikauka, B.Sc.(Hons.)

November 12, 1989

SUMMARY

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The Lode 3, 4, 5, 6, and 8 Claim Group consists of five continguous mineral claims comprising 71 units. The property is situated in the Skeena Mining Division approximately 20 kilometres north of Stewart, B.C.

The claims lie within the "Golden Crescent" of the Stewart Complex. This area is receiving an increase of attention with world class gold-silver deposits which currently represents the most active exploration area in the Western Canadian Cordillera.

The property is underlain by Lower-Middle Jurassic volcanic breccia, conglomerate, crystal and lithic tuff, sandstone, siltstone, and limestone cut by Tertiary dacitic dykes. The axis of a large scale anticline fold parallels American Creek.

A large scale fault west of American creek, trending 340 degrees, contains pyrite replacement mineralization and silicification. The mineral zone is approximately one kilometre in length tracing the fault structure. Near the southern portion of the mineral zone a radiating drainage pattern occurs. This area gave relatively and the composition of the mineral zone a radiating drainage pattern occurs. This area gave relatively and the composition of the mineral zone a radiating drainage pattern occurs. This area gave relatively and the composition of the mineral zone are quartz-

The four mineral zones identified on the claim group by geological mapping and geochemistry warrant follow-up exploration. A Phase II program, including horizontal loop geophysics, detailed and regional geological mapping, prospecting and trenching recommended. Approximate cost would be \$62,000.

Contingent on Phase II results, a Phase III program of diamond drilling is recommended. Approximate cost would be \$85,000.



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ITEMIZED COST STATEMENT

LODE 3,4,5,6,8 Claims

September and October, 1989

Field Crew:

Project Geologist (A. Kikauka) @ \$350/day x 5 days Geotechnician (I. Rose) @ \$150/day x 5 days	\$ 1,750.00 750.00	
		2,500.00
Field Costs:		
Helicopter @ \$650/hr x 2.0 hours Room and Board @ \$45/day/man x 10 man days Communications @ \$25/day x 5 days 1 4x4 truck @ \$70/day x 5 days Supplies	$1.300.00 \\ 450.00 \\ 125.00 \\ 350.00 \\ 30.00$	2,255.00
Lab Analysis:		
2 Rock chip samples (Cu, Pb, Zn, Ag, Au assay) @ \$34.40 sample 5 soil and 23 silt	66.80	
(30 element ICP, gold by FA/AA) @ \$16.75\sample	469.00	535.80
Report:		
Report writing Drafting and plotting Word processing, copying, and binding	400.00 225.00 75.00	700.00
TOTAL		\$ 5,990.80

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- Appendix B Stream Sediment and Soil Multi-element ICP
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1. INTRODUCTION

This report summarizes geological and geochemical surveys carried out between September 24-28,1989. The author, Mr. Andris Kikauka, planned and supervised the fieldwork on the Lode 3,4,5,6, and 8 Claims.

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2. LOCATION, ACCESS, AND PHYSIOGRAPHY

The Lode 3,4,5,6, and 8 Claim Group is located approximately 22 kilometres north of Stewart, B.C. The property lies within the Skeena Mining Division on NTS mapsheet 104 A/4 W (fig. 1).

Elevations range from 300 to 1800 metres. Slopes are generally moderate to steep with the exception of relatively flat terrain along the valley bottom. An old horse trail parallels American Ck. and there is an old road from the mouth of American Ck. to the Mountain Boy Crown Grants, which adjoin to the southern portion of the claim group.

3. PROPERTY STATUS

The Lode 3,4,5,6,and 8 Claim Group consists of 5 contiguous staked mineral claims in the Skeena Mining Division. The claims are owned by White Channel Resources Incorporated (fig. 2).

CLAIM NAME	#OF UNITS	RECORD#	RECORD D	ATE	. EXPIRY	DATE
Lode 3	20	7563	April 2	.4, 89	April	24, 90
Lode 4	20	756 4	April 2	24, 89	April	24, 90
Lode 5	20	8055	Sept. 2	24, 89	Sept.	24, 90
Lode 6	9	8056	Sept. 2	24, 89	Sept.	24, 90
Lode 8	2	8057	Sept. 2	24, 89	Sept.	24, 90

The total area of the claim group is approximately 1775 hectares.

4. AREA HISTORY

Exploration activity in the Stewart gold-silver district continues to be one of the most active mineral exploration areas of North America demonstrated by numerous projects being carried out by major and junior mining companies.

Westmin Resouces is mining the Silbak-Premier and Big Missourri gold-silver properties. Newhawk Gold Mines is approaching production of their Brucejack Lake property. Skyline Gold Corp. is mining their Stonehouse gold deposit. Cominco-Prime are approaching production on the Snip deposit. Con. Stikine-Calpine are rapidly inferring a world class gold-silver deposit. Westmin-Tenajon are now mining the Silver Butte deposit. Other deposits are approaching feasibility, including: Echo Bay-Magna-Silver Princess Doc property, Catear Golden Wedge, Bond Gold Red Mountain.

Many of the 500 gold-silver mines, prospects, and new discoveries will recieve more attention in the Stewart area over the next decade.

5. PROPERTY HISTORY

The claim group has several showings that have recieved attention from 1908 to present. These occurrences include the Anaconda-Adanac Ag-Pb-Zn, Daly Mines Ag-Cu, and Blue Jay Ag-Cu. The Anaconda was staked by E. Raymond in 1924. The Minister of Mines 1926 and 1928 reports the Anaconda showing as pyrite, sphalerite, and galena in a quartz-carbonate with fibrous hornblende gangue. The showing is exposed along 150 feet and is located on the east side of American Ck. at 1250 metres elevation 2 kilometres north of Basin Ck. The Bandolier property was prospected by J. Stewart in 1908 and optioned to American Ck. Mining Company Ltd. in 1910. Pride Resources Ltd. acquired the property in 1980 to examine the Ag-Cu showings.

In 1987, an airborne geophysical survey was flown over the property by Western Geophysical Areo Data Ltd. Results of this program are presently not available.

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6. GENERAL GEOLOGY

The Stewart Complex includes a thick sequence of mainly late Triassic to late Middle Jurassic volcanic, sedimentary, and metamorphic rocks. These have been intruded and cut by a mainly granitic to syenitic suite of Lower Jurassic through Tertiary plutons which together form part of the Coast Plutonic Complex. Deformation, in part related to intrusive activity has produced complex fold structures along the main intrusive contacts with simple open folds and warps dominant along the east side of the Complex. Cataclasis marked by strong north-south structures are prominent structural features that cut all the pre Lower Middle Jurassic units. (Figure 2).

Country rocks in the general Stewart area comprise mainly Hazleton Group strata which include the Lower Jurassic Unuk River Formation and the Middle Jurassic Betty Creek and Salmon River Formation and the Upper Jurassic Nass Formation (Grove, 1971, 1986). In the general Stewart area the Unuk River strata include mainly fragmental andesitic volcanics, epiclastic volcanics and minor volcanic flows. Widespread Aalenian uplift and erosion was followed by deposition of the partly marine volcaniclastic Betty Creek Formation, the mixed Salmon River Formation, and the dominantly shallow marine Nass Formation.

Intrusive activity in the Stewart area has been marked by the Lower to Middle Jurassic Texas Creek granodiorite with which the Big Missouri, Silbak Premier and many small ore deposits are associated. Younger intrusions include the extensive Hyder Quartz Monzonite and the many Tertiary stocks and dike swarms which form a large part of the Coast Clutonic Complex. Mineral deposits such as the major B.C. Molybdenum mine at Alice Arm and a host of smaller deposists are localized in or related to these 48 to 52 m.y plutons which include dykes forming part of the regionally extensive Portland Canal Dike Swarm (Grove, 1986).

Stewart District Mineral Deposits

More than 700 mineral deposits and showings have now been discovered in a large variety of rocks and structural traps in the Stewart District. The famous Silbak Premier mine which has been reactivated as an open pit operation by Westmin Resources represents a telescoped epithermal gold-silver base metal deposit localized along a complex steep fracture system in Lower Jurassic volcaniclastics overlain by shallow dipping Middle Jurassic Salmon River Formation sedimentary rocks. In this example, the shallow lying younger rock units formed a dam, trapping bonanza type gold-silver mineralization at a relatively shallow depth. Mineralization at the Silbak Premier, Big Missouri and a number of other deposits in the area have been related to early Middle Jurassic regional plutonic-volcanic event (Grove 1971, 1986). Younger high grade mineralization found localized in various members of the Portland Canal Dike Swarm particularly in the Stewart area have also been related to Cretaceous and Tertiary plutonic-volcanic events. Overall at least four major episodes of mineralization involving gold-silver, base metals, molybdenum and tungsten dating from early Lower Middle Jurassic through to the Tertiary have been recorded throughout the Stewart Complex.

7. 1989 FIELD PROGRAM

7.1 SCOPE AND PURPOSE

From Sept. **2**4-**28**, 1989 one geologist and one geotechnician carried out geological mapping, stream sediment and soil sampling, and prospecting.

The purpose of this program was:

- a) to cover the property with a geological and geochemical survey in order
- to define trenching targets and additional follow-up exploration targets.
- b) prospect to find and systematically sample sulphide mineralization on the property.

7.2 METHODS AND PROCEDURES

Utilizing a compass and hipchain, contour geochemical sampling was carried out on all accessible drainages. A total of 23 stream sediment and 5 soil samples were taken.

Geological mapping was carried out at a scale of 1:12,500. A total of two rock chip samples were taken.

8.RESULTS

8.1 PROPERTY GEOLOGY AND MINERALIZATION

Geological mapping of the Lode 1,2, and 7 claims indicated that the majority of the bedrock is Lower Jurassic Unuk R. Formation, with a small portion of the west edge of the claims unconformably overlain by Middle Jurassic Betty Ck. Formation (fig.2 and 3). The Unuk R. lithologies include green, red, purple, and grey volcanic breccias, conglomerate, crystal and lthic tuff, sandstone, siltstone and minor limestone. The Betty Ck. lithologies include green, red, purple, and black volcanic breccia, conglomerate, crystal and lithic tuff, sandstone, siltstone, and minor limestone. The Betty Ck. is simular in lithology to the Unuk R. but the the two formations are seperated by an aerial unconformity. This unconformity is recognized as an erosional surface with abundant oxidized material and usually corresponds to a change in slope, i.e. a change in rock competency and attitude. The entire sequence of volcanics and sediments are cut by dacitic dykes.

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Sediments on the east side of American Ck. dip moderately east. West of American Ck. they dip moderately west. The structure responsible for this feature is a large scale anticline fold with the axial plane parallel to American Ck. (fig. 2).

Two mineral zones occur 600-900 metres west of American Ck. (@600-900 metres elevation) on the Lode 3 Claim. There is a 340 trending fault forming a cliff face along a creek. Following the fault to its southern limit (in the centre portion of Lode 3), there is a radiating drainage pattern in the creeks. Pyrite replacement mineralization and silicification are present. This area gave anomalous Cu-Pb-Zn-Ag-Au values in the silt and soil samples.

A mineral zone located on the Lode 6 claim has a series of pyrite-quartz<u>+</u> chalcopyrite veins related to northwest trending dacitic dykes that cut the older volcanics. Signifigant vein width up to 1 metre was observed however low Au-Ag assays were returned from limited sampling. Stream sediment samples from the adjacent creek gave higher than average Au vales suggesting there may be gold bearing veins upslope.

The Anaconda Ag-Pb-Zn showing was examined by aerial recconnaissance. Bad weather hampered an attempt to visit the showing.

8.2 GEOCHEMISTRY

relatively high

Stream sediment samples gave values in Cu-Pb-Zn-Ag-Au in various portions of the claim group. The following samples are of signifigance and should be followed up: ST-18 Cu-Ag, ST-20 Cu-Au, ST-21 Au, ST-24 Zn-Au, ST-27 Ag, ST-29 Au, ST-30 Au, ST-59 Au, D1+00S Pb. All of these creeks require additional prospecting and sampling.

9. CONCLUSION

The author believes that the Lode 3,4,5,6,and 8 Claim Group has potential for hosting economic deposits of Au-Ag with associated Cu-Pb-Zn values.

This is based on the following facts:

 Geological mapping has shown wide alteration-mineral zones that trend along the axis of a large scale fold with associated large scale faults. This indicates potential for a large system of mineralization at depth.

2. Soil and silt geochemistry indicate that there are precious metalbase metal values associated with alteration-mineral zones.

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3. Mining infrastructure is relatively close to the showings.

10. RECOMMENDATIONS

PHASE II

a) Pulse EM or UTEM horizontal loop geophysics to cover four mineral zones outlined by geological mapping. Approximately 15 km. of line grid.

b) Backhoe and cat trenching over geophysical conductors and other surface prospects.

c) Detailed geological mapping in the area of the trenching program and regional mapping and prospecting of the unmapped areas of the claim.

PHASE III

a) Diamond drilling.

REFERENCES

- Grove, E.W. (1971), Geology and Mineral Deposits of the Stewart Area, BCDM Bulletin No. 58.
- Grove E.W. (1986), Geology and Mineral Deposits of the Unuk River-Salmon-River-Anyox Area, Minister of Energy Mines and Petroleum Resources Bulletin No. 63.

Cremonese, D.M. (1988), Airborne Mag and VLF-EM Survey, Ernst 1-2 and Pabicia Claims, #17629, for Teuton Res. Corp.

Schumacher, R.E. (1981), Prospecting Report on the Mountain Boy Group, #9184, for Pride Res. Ltd.

STATEMENT OF QUALIFICATIONS

1, Andris, Kikauka, of Box 370, Brackendale B.C., VON 1110, do hereby declare that:

- I graduated from Brock University, Faculty of Geological Sciences, St. Catharines, Ontario, 1979, receiving Honours B.Sc., First Class.
- From 1976 79, have been performing geological field work for Uranium targets on the Canadian Shield.
- From 1979 to 1989, have been performing geological field work, for precious metal, base metal targets on the western cordillera in B.C. and the Yukon Territory.
- Maintain a professional affiliation with the G.A.C. and M.E.G.
- Personally participated in the field work of this report, reviewed and assessed the data.
 - I am a principle of White Channel Resources Inc., and this assessment report is written to fulfill government regulations as specified by the current Mineral Act.

Sincerely:

-

Andria Kilante

Andris Kikauka, B.Sc.(Hons.) Geologist





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SEDIMENTARY AND VOLCANIC ROCKS MIDDLE JURASSIC SALMON RIVER FORMATION Siltstone, greywacke, sandstone, some calcarenite, minor limestone, argillite, conglomerate. BETTY CREEK FORMATION	METAMORPHIC ROCKS JURASSIC Cataclasite, mylonite KILOMETRES 0 1 2 3 4 5
and siltstone, crystal and lithic tuff.	WHITE CHANNEL RESOURCES INC.
Volcanic breccia, conglomerate, sandstone, and siltstone.	RICH 1-4, LODE 1-8, STRIKE 1-3 CLAIMS
PLUTONIC ROCKS EOCENE AND OLDER Geologic contact	Skeena Mining Division, B. C.
E Augite diorite Fault	REGIONAL GEOLUGY MAP
Granodiorite	NTS 104 A/4W after Grove, 1964-1970
Snow boundary	DATE: Nov 1989 FIGURE; 2

- Alexandra Section Section 1

Sandstone,	Siltstone,	Lithic	Tuff

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FIG. 39

Lode Claims

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APPENDIX A

October 15, 1989 Page <u>1.</u> of <u>1.</u>

Claims

Sample Record

WHITE CHANNEL RESOURCES INC.

Sample Number	Showing Name	Survey Location	Width	Description	Au g/t	Ag g/t	Cu %	РЪ %	Zn %
47052	Lode 6	elev3600' Basin Ck.	.45 m	60% qtz 8% py	.07	2.7	.01		
47053	11		.30 m	20% qtz 5% cp 5% py	.07	2.2	16.80		

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SAMPLE#	MO PPN	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPN	Co PPM	Nn PPM	Fe %	AS PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca X	Р Х	La PPM	Cr PPM	Mg X	Ba PPM	Ti X	B PPM	Al X	Na X	K X	W PPM	Au * PPB
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ST-18 ST-19	1 1	191 47	27 14	163 87	2.2 .1	17 5	16 13	2372 935	5.49 4.18	13 9	5 5	ND ND	1 3	32 43	1	2 2	2 2	74 68	.41 .56	.092 .083	23 16	30 13	1.07	481 242	.04 .11	7 1 2 1	.85 .35	.01 .01	.11 .08	2 1	16 4
ST-20 ST-21	1 1	138 56	50 30	193 181	.5 .3	9 7	17 16	2002 1907	5.46 5.89	11 13	5 5	ND ND	1 2	32 47	1	2 2	2 2	80 73	.45 .42	.095 .102	17 16	19 14	1.15 .87	430 569	.07 .07	8 1 3 1	.83 	.01 .01	.10 .17	2 1	49 63
ST-22 ST-23	1	32 18	8 15	101 170	.3	7 4	15 12	784 1114	4.66 3.98	7	5 5	ND ND	3 2	53 55	1	2	2 2	93 78	.61	.100	13 12	13 12	1.19	336 245	.13	71 21	.45 .31	.01 .01	.14	1	20 9
ST-24 ST-25	2 1	29 29	18 11	354 86	े .2 ा	5 2	14 6	2344 659	4.98 2.14	25 6	5 8	ND ND	2	52 26	5 1	2	2 2	82 33	.45 .37	.061 .063	13 18	11 7	.75 .55	370 205	.06 .05	81 13	.27 .81	.01 .01	.07 .07	- 1 1 -	89 7
ST-26	1	39	13	112	.3	4	14	1349	4.68	27	5	ND	1	51	1	2	2	61	2.22	.087	14	12	1.20	303	.05	98 1	.59	.01	08)	4
ST-27 ST-28 ST-29	5 1 1	30 86 37	44 18 15	63 80	1.1	4 8 4	37	686 853	4.90	39 38 10	5	ND ND	2 4 7	24 34 25	1	3	2	03 112 125	1.21	.088	10 17 15	20 16	.70 1.67 1.42	134 36 77	.03	7 2	2.00 51	.0 .C.	.10	-9-1 (∧1) 2318	13 24
st-30 st-31	1	54 31	11 10	80 93	.3	6 6	17 15	949 745	5.96	18 17	5	ND ND	32	22 38	1	32	2	115 97	.44	.127	19 17	20 18	1.41	156 159	.04 .06	11 1	.69 .43	.01	.07	1	22 7
ST-32	3	22	26	210	.4	4	17	4656	5.23	33	5	ND	1	41	2	2	2	63	.49	.058	17	9	.35	608	.02	10 1	.08	.01	.09	1	3

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	st-33	3	13	23	162	.4	3	11	2217	3.94	9	7	ND	1	41	1	2	2	54	.55	.058	13	7	.43	271	.03	4	1.51	.01	.05	5	1
	ST-34	1	10	10	119	.3	3	10	1154	3.82	15	5	ND	1	40	1	2	2	53	.35	.036	11	8	.57	280	.02	9	1.39	.01	.12	1	1
	ST-35	3	16	18	156	.3	3	13	1316	4.29	15	5	ND	1	53	1	2	3	59	.38	.032	11	8	.58	407	.02	10	1.36	.01	.13	1	1
	st-36	1	16	16	111	.3	3	12	1139	3.87	12	5	ND	1	40	1	2	2	55	.33	.041	12	8	.67	438	.03	6	1.48	.01	.10	1	1
	ST-37	2	12	15	89	.2	3	10	1141	3.89	9	5	ND	1	44	1	2	2	40	.29	.035	11	8	.69	495	.01	6 '	1.45	.01	.12	1	1
~~~~	st-38	1	28	24	126	.4	5	11	813	5.48	42	5	ND	1	27	1	2	2	72	.48	.085	11	12	1.04	268	.05	11	1.51	.01	.04	1	9
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STD C/AU-S	18	62	39	132	6.6	68	30	1037	3.96	40	18	7	37	48	17	15	21	57	.48	-089	38	55	.88	175	.06	32	1.94	.06	. 14	813.8	48

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			ICP - THIS (	.500 .EACH	GRAM Is pa	SAMPL	LE IS FOR	DIGEST NN FE	ED WIT SR CA	TH 3MI P LA	. 3-1- CR MG	2 HCL BA T	-HNO3	5-H20 1 AND	AT 95 LIMIT	5 DEG. Ted Fo	. C FO DR NA	R ONE K AND	HOUR AL	AND AU D	IS DI ETECT	LUTED	10 1 .[M]T	IO ML BY IC	WITH P 15	WATER 3 PPM	•	,	Ŭ	D-	ł
	•		- SAMI	PLE	rpe: P	1 501	IL P2	-P3 SIL	T	AU* /	NALYS	15 BY σ.	( ACIE 1	LEA	CH/AA	FROM	10 GM	SAMP	LE.	ſ											
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			Wh:	ite	Cha	nno	91 I	Reso	urce	es I	Inc.	PF	<b>NOJ</b> É	ĊĊŤ	LOI	DE C	CLAI	MS	F	file	: <b>'</b> #.	89-	-396	57	F	age	1				
AMPLE#	No PPN	Cu PPM	Pb PPN	Zn PPN	Ag PPM	Ni PPM	Co PPN	Mn PPM	Fe X	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bİ PPM	V PP <b>N</b>	Ca X	P X	La PPH	Cr PPM	Mg X	8a PPM	ti X	8 PPN	Al X	Na X	K X	W PPN	Au* PPB
D 0+505	t 1	35 30	14 233	-142 141	.2	5	14 15	2784 24 <b>34</b>	4.77	2 2	5 5	ND ND	1	23 28		3	2 2	62 57	.38 .42	. 111	14 20	12 9	.73 .85	335 261	.02	5 3	1.31	.01 .01	. 17		2 LOU
台D 1+50S	1	44 15	26 25	448	.2	3	9 17	572 3064	2.95	2	5	ND	1	53 23	10	2	2	51 46	.77	.107	19 25	8	.82 14	516	.02	2	1.46	.01	.10	1	1 3 1 Sol
D 2+50S	. i	17	16	105		4	17	928	3.51	2	5	ND	1	12	ាំ	2	2	58	.30	.076	28	9	.91	216	.02	2	1.05	.01	.15	ţ	i

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Appendix C

# Analytical Techni**q**ue;

## Gold & Silver by Fire Assay

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1/2 A.T. samples is mix in dry reagent flux with 1 Ag inquart and fused for 45 - 60 mins. The resulting bead from cupellation is dissolved in aqua regia. Analysis by A.A/ICP.

- For Au > 1 oz/t, determination by gravimetric finished.
- Wet acid leached for Ag is also ran. (Procedure same as below).

## Determination of Cu, Pb, Zn and Ag

In 100 ml volumetric flask, 1 g sample is digested in 50 ml 3-1-2 HCl-HNO₃-H₂O at 95°C for one hour, dilute to 100 ml with demineralized water, analyze by ICF.

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ICF - .5 gram sample is digested with 3 ml 3-1-2 HCl-HN03-H20 at 95 deg.C for one hour and is diluted to 10 ml with water. This leach is Partial for Mn, Fe, Sr, Ca, P, La, Cr, Mg, Ba, Ti, B, W and limited for Na, K, Al.

Aux - 10 gram samples are ignited at 600 deg.C, digested with aqua regia at 95 deg.C for one hour, 50 ml aliquot is extracted into 10 ml MIBK, analysed by graphite furnace AA.

Soil prep - Dry 2165 at 60°C Sieve approx 3g of -80 mestr.

Rock prep - Crush to approx -3/16" up to 10 161, "split to approx 200-300g Pulverize to - 100 mesh.

#### APPENDIX

### FIELD SAMPLING PROCEDURES:

- SILT SAMPLES: Each sample consists of approximately 500 grams of silt-sand size fraction of detrital sediments from the active channel of relatively small streams and creeks. Sample depth varied from U-25 cm. Samples were dried and shipped to the lab.
- SOIL SAMPLES: Each sample consists of approximately 500 grams of silt-sand size fraction of B horizon soil or talus fines at a depth of approximately 10-40 cm. Samples were dried and shipped to the lab.
- Rock samples: Each sample consists of 1-3 kilograms of 1-4 centimetre sized rock chip fragments taken from a measured width of bedrock exposure (unless described as float).