82-9-10086

Geochemical Prospecting and Geology of the NECK Prospect

Mineral Claims	Gretchen	2756
	Next	2754
	Stop	2755
	The	2752
	Bahamas	2753

NTS 93 E

Latitude 53° 29'
Longitude 127° 43'

Owner Sveinson Way Mineral Services Ltd.

SKEENA MINING DIVISION

B. Way
January 1982

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Introduction

Copper mineralization was discovered during 1980 southeast of Sandifer Peak in the Kemano, B.C. area and subsequently staked as the Next, Stop, The, Bahamas and Gretchen Mineral Claims. The report discusses the initial phase of prospecting and geochemical investigation of the area.

Location and Access

The claims are located on the southern slope of Sandifer Peak which is approximately 16 km southeast of Kemano, B.C. This area is at the eastern margin of the Coast Crystalline Complex.

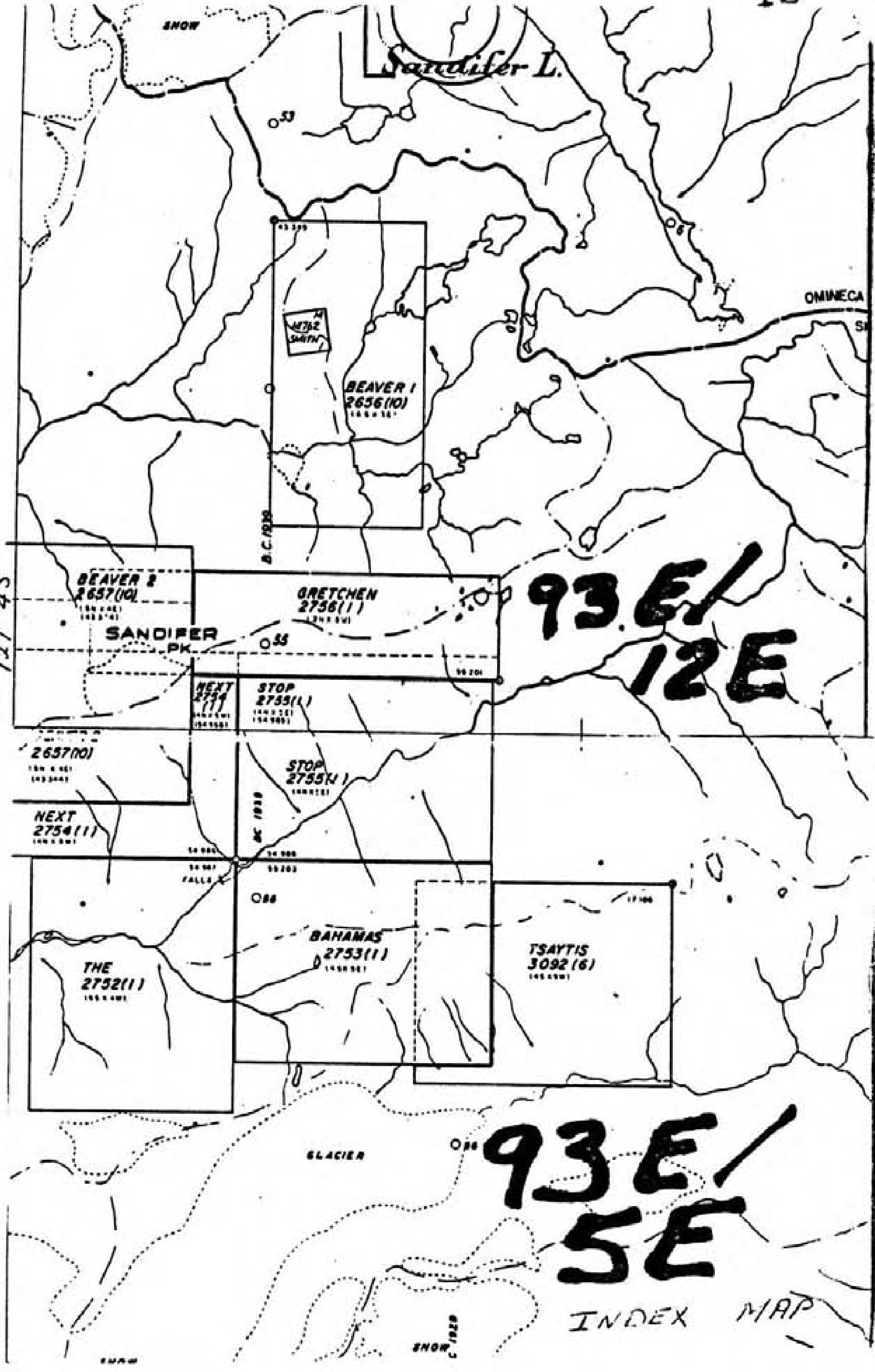
The claims can be reached from Kitimat, Terrace or Houston with helicopter or alternately from Kemano since often there is a helicopter stationed there. Just east of the claims Sandifer Lake or Thatsa Lake are suitable for fixed wing aircraft on floats.

A road connecting Kemano with Thatsa Lake traverses the central part of the claims and also connects with tidewater on Gardner Canal. Barge service is available weekly from Kitimat, B.C. to Kemano.

The claims are located on NTS maps 93 E/12E and 93E/SE at generalized location 53^{0} 29' latitude and 127^{0} 43' longitude.

Mineral Claims

Mineral Claims Next, Stop, The, Bahamas and Gretchen are owned by Sveinson Way Mineral Services Ltd. Portions of Next and Gretchen Claims apparently overstake Beaver 4 Mineral Claim


SNOW
Sandifer L.
OMINECA
BEAVER 1
2656(10)
SMITH
BEAVER 2
2657(10)
GRETCHEN
2756(1)
SANDIFER
PK.
127° 45'
53° 30'
B.C. 1938
NEXT
2754(1)
STOP
2755(1)
2657(10)
NEXT
2754(1)
STOP
2755(1)
FALLS
THE
2752(1)
BAHAMAS
2753(1)
TSAYTIS
3092(6)
GLACIER
SNOW
93E/
12E
93E/
5E
INDEX MAP

owned by Whitesail Ventures Corporation. In addition the Smith Mineral Claim 14762 held under option by Silver Standard Mines Ltd. lies within the Next and possibly the Beaver 4 Mineral Claims.

The Smith Claim is correctly located by description to cover the Smith-NashVein but has been misplotted on government claim maps.

Previous Work

The only known work in the immediate area has been prospecting and sampling in connection with the Smith-Nash Vein occurring during the early 1950's.

To the west Charta Mines Ltd., in 1972, prospected and sampled an alaskite dyke about 2 km east from Kemano. To the east an assortment of porphyry copper prospects, including the Berg, lie at a distance of approximately 50 km.

Current Program

The present work program consisted of rock, soil and silt geochemical sampling, prospecting and preliminary geological mapping.

The area investigated measured 5 km by 1.5 km and included work actually done on all mineral claims. 43 rock samples were geochemically tested; 17 soil samples; and 25 silt samples. The maps attached to this report were prepared from aerial photographs and consequently have a variation in scale from place to place, but are in the order of 1: 21,600.

Regional Geology

The claims are within the Coast Crystalline Complex but lie on the eastern flank and border the transition zone to rocks of the Intermontane Belt to the east. An inlier of metamorphic rocks stretching from Nanika Lake to Kimsquit Lake in the south (Duffell; 1959) may rest on plutonic rocks of the Coast Plutonic Rocks. In the area of the claims plutonic rocks are dioritic but regionally are closer to geanodiorite. The meta-
morphic rocks have been regionally meta-
morphosed to the green schist facies, probably are equivalent to the Hazelton Group of Jurassic Age and consist of metavolcanics and metasediments.

Property Geology

A preliminary geology map (FIG. NECK 81-1) is attached. A limited portion of the property has been reconnaissance prospected - mapped. Features noted included intrusions, alteration, pyrite zoning, lithology of the metamorphic rocks and attitudes. Geochemical sampling accompanied prospecting traverses.

Lithology; Diorite

This plug has dyke-like geometry as it is now understood with a northeast strike and steep dip at the contact. Typically a linear fabric is apparent in the alignment of the amphibole laths as well as the plagioclase. Hornblende is slightly porphyrite in hand specimen and greatly exceeds biotite content in fresh rock. K-feldspar appears to form a small portion of the rock although no thin sections nor staining has confirmed this.

Quartz is absent. Near the southeastern contact, the only area so far explored, the rock is altered to varying degrees, within the propylite facies. Minor hydrothermal clay and sericite were noted in locations where silication through quartz veining has occurred. Frequently near the contact the diorite is chloritized to the point where the white-black speckled colour has given way to a completely dark green colour and the linear fabric is marked. Quartz veinlets aligned northeast are non-continuous and have widths varying from 3 mm to 40 cm. Pyrite is ubiquituous in the alteration zone but rare in fresher rock. Insufficient mapping has been accomplished to have delineated the pyrite zone.

Other sulfides occur in the altered diorite particularly in quartz veinlets but disseminated chalcopyrite has been noted in highly chloritic rock. Initial sampling of this altered diorite indicated an outstanding gold-copper ratio of occurrence. In leached gossanous material a plate of native gold was identified under hand lends in copper wad (after chalcopyrite). Molybdenite is rare in outcrops examined. Bornite has not been seen. Chalcocite occurs but is thought to be supergene.

A fine grained granite rock has been described (Lytle; 1952) underlying Sandifer Peak. The relationship of this rock to the previously described diorite is not known.

The age of the plug is thought to be Tertiary but it may be older.

Metamorphic Rocks

These rocks appear to be predominantly clasitic sediments in the claims area. The valley bottom has a substantial volume of quartzites. Higher in elevation sericite schists are common. Greenstones with occasional relict phenocrysts were noted. Occasionally rocks with high chlorite content were thought to be metatuffs.

Quartzites appeared that were clean, massive and granular although fused. Others have micaeous partings grading to quartz sericite schists or were in varying degrees chloritic.

Near the diorite contact epidote is common in greenstones. Veins and bands of epidote are common near the road below the Smith-Nash Vein. Chalcopyrite is common in this area.

Frequently on creek traverses away from the diorite contact chalcopyrite was found in trace amounts disseminated in greenstones and on several occasions in quartzites.

Pyrite is almost ubiquituous in the metamorphic rocks that were examined. Volumes range from trace to 20%. Quartzites seem to bear the greater volume.

The metamorphic rocks are interrupted by faults commonly; these rocks persistently have shallow dips. Schistosity appears to conform with bedding planes.

1981 Sampling

Because gold mineralization is so closely linked with pyrite in the Smith-Nash Vein the 1981 program was directed toward pyritic zones for potential precious metal deposits as well as gaining an understanding of the porphyry type mineralization and the nature of the metamorphic rocks.

Results of silt, soil and rock sampling are plotted on FIG: NECK 81-2. Geochemical assays are expressed in parts per million except gold which is expressed in parts per billion.

Bonder Clegg and Company Ltd., performed all assays. For Cu, Mo and Ag extraction was performed with hot HNO_3-HCl and atomic absorption spectrometry completed the assay. Gold was extracted with aqua regia, fire assayed and the bead assayed by atomic absorption. All samples were crushed to -100 mesh and seived to -80 mesh.

Soil samples were collected from the B horizon or beneath the bulk of organic meterial where horizon differentiation was not possible. Depths ranged from 5 to 30 cm. Soil profiles are poorly developed on the steep slopes consisting of an organic mat underlain by rock fragments with minor soily material.

Silt samples were collected from the finest material available at sample sites. Creeks travel on bedrock in large portions of the steep slopes; consequently long reaches have no silt accumulation.

Rock samples were collected where chalcopyrite was visible, in general. Several samples were assayed for auriferous pyrite possibilities.

Discussion of Results

The contact between diorite and the metamorphic rocks is both altered and mineralized with sulfides in the areas which have been examined. Initial sampling indicated that the gold to copper ratio was quite favourable but sampling described in this report indicates that gold may not have concentrated significantly in this zone. Gold was, however, recognized in hand specimen on one occasion.

The width and alteration facies within diorite dyke have not been mapped to date nor has the contact been fully prospected. The porphyry copper prospects that occur east of the NECK Project tend to have copper concentrations in hornfelsed Hazelton Group rocks adjacent to granitic stocks. In the area of the NECK Prospect sulfide mineralization is evident at the contact with diorite and has been located in trace amounts up to 1950 m away.

Silt sampling completed during 1981 indicates that anomolous metal contents occur in the drainages. The values obtained form a population size which is thought to be too small under the geological circumstances to yield reliable statistical tests. Copper and molybdenum values, however, show some highs south from the diorite contact.

Soil samples were taken in several areas to evaluate the technique. A pit was excavated near the diorite contact to examine the profile geochemically. Best resolution for Cu and Mo appears to occur immediately beneath the organic layer. No where are soils well developed; the organic mat is directly underlain by bedrock chips supported in immature soil material. Since outcrop and talus are common, soil is absent from much of the property. Precious metals appear to have little response in geochemical prospecting using soils and silts with the data now available.

For reconnaissance work rock geochemistry has been selected as an important tool in delineating mineralized areas. The results to date indicate that previous metals occur very sparingly. Highly pyritic lithology does not appear to be auriferous although gold is directly related to pyrite in the Smith-Nash Vein which lies in a hydrothermal vein system located near the western boundary of the diorite dyke (Way; 1980). Good correlation is evident between copper and molybdenum values and only slight enrichment is suggested for gold and silver in zones of visible copper mineralization.

Recommendations

The 1981 program failed to confirm that previous metals are super concentrated in the probable porphyry copper type mineralization known as the NECK Project. Consequently a limited program of geological mapping, geochemical surveys and prospecting is proposed for a 1982 program. Efforts will be directed towards defining the diorite dyke, the mineralized contact potential, other mineralized zones and location of auriferous zones or veins such as the Smith-Nash Vein.

A cost estimate for the program follows:

Labour	2 people	12 days @ $375/day	$ 4,500.00
Aircraft Support		5 Hours @ $495	2,475.00
Food		$16/d/person, 2 people, 12 days	384.00
Transportation			500.00
Assays		150 samples @ $10	1,500.00
Supplies			1,000.00
Photos, Map Preparation, Report			
Administration			2,500.00
Contingency			1,141.00
	TOTAL		14,000.00

REFERENCES

Duffel S. (1959) Whitesail Map - Area British Columbia. G.S.C. Memoir. 299.

Lytle L.K. (1953) Report to Conwest Exploration Company Ltd.

Way, B. (1980) Sampling Evaluation of the Smith-Nash Prospect.

STATEMENT OF QUALIFICATION

I, Barry C. Way, am a geologist registered as a Professional Geologist in the Province of Alberta.

I graduated from the University of Alberta during 1973 with specialization in geology and have practised this profession since graduation.

I am a principal in the firm Sveinson Way Mineral Services Ltd.

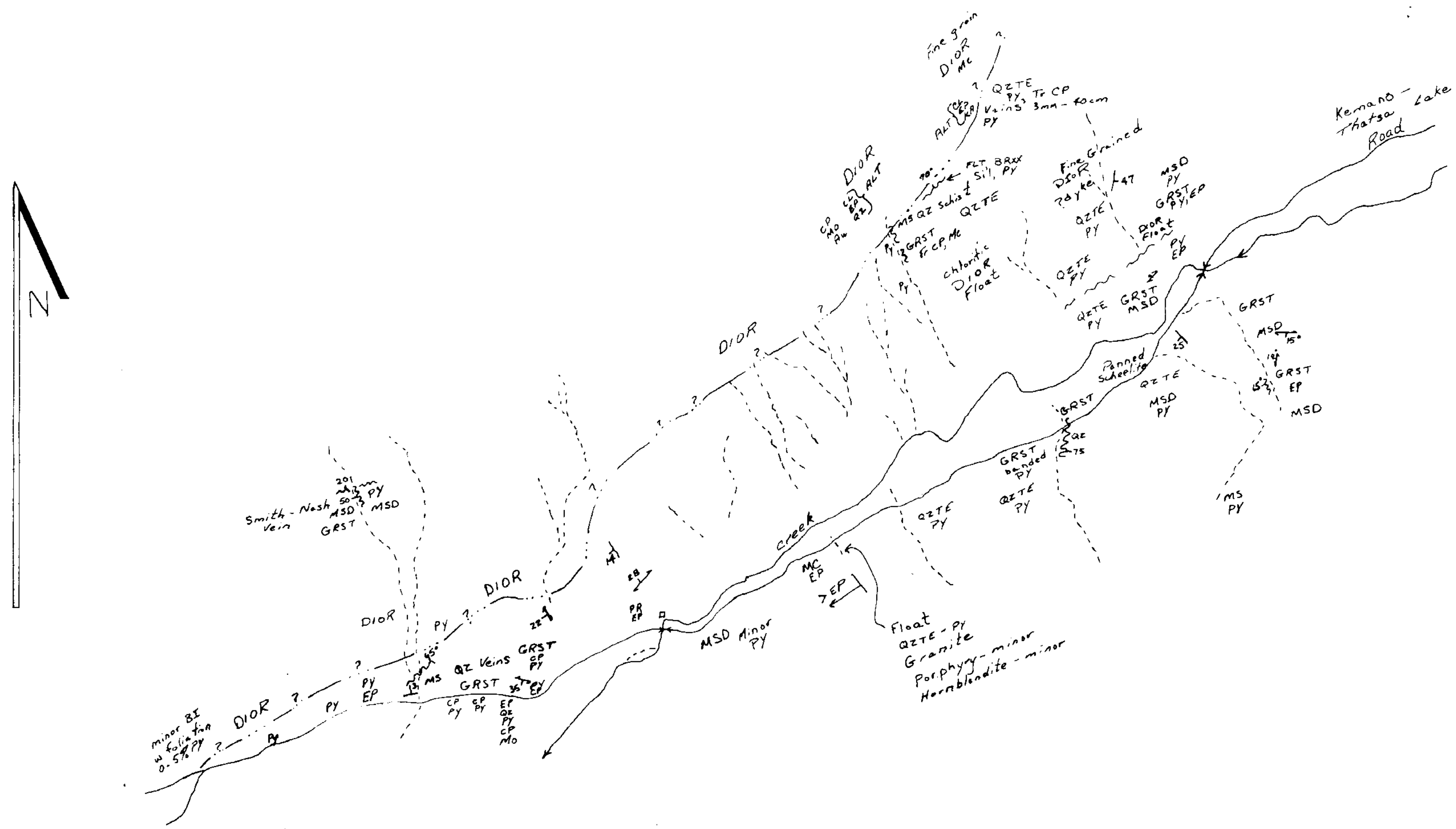
I conducted and supervised the 1981 work program outlined in the report. I was assisted by:

T. Hennebury
223 No. 3 Hangar Municipal Airport,
Edmonton, Alberta.

and H. Kaiser,
223 No. 3 Hangar Municipal Airport,
Edmonton, Alberta.

STATEMENT OF EXPENDITURES

Labour		October 6 - 16, 1981				
	Field	J. Hennebury	@	$100/day		
		H. Kaiser	@	$ 95/day		
		B. Way	@	$230/day		
					$4,675	
	Office	B. Way Dec. 20 - 24				
			@	$230/day	$1,150	$ 5,825.00
Food		3 people $15/day/person, 11 days				495.00
Supplies						17.66
Travel		Vancouver to Smithers. Truck cost @ $0.25/km				791.38
Motels						103.88
Helicopter		10.7 hours	@	$477.77		5,117.76
Assaying						
		85 Ag	@	$1.75	$148.75	
		85 Au	@	$5.25	$446.25	
		43 preparations	@	$2.50	$107.50	
		43 Handling	@	.25	$ 10.75	
		42 Sample Preparations	@	.60	$ 25.20	
		42 Handling	@	.20	$ 8.40	
		48 Copper, Molybdemum	@	$1.50	$ 72.00	
						818.85
	TOTAL COST					$13,169.53



DIOR	Diorite
GRST	Greenstone
MSD	Metasediment
QZTE	Quartzite
BRXX	Breccia
SIL	Silication
MS	Sericite
QZ	Quartz
PY	Pyrite
CP	Chalcopyrite
EP	Epidote
MC	Malachite
PR	Pyrrhotite
Mo	Molybdenite
KA	Clay
ALT	Alteration
	Bedding
	Schistosity
	Contact

SVEINSON WAY MINERAL SERVICES LTD

NECK PROSPECT

GEOLOGY

SCALE 1: 21,600

0 216 432 648 864 1080 1296 1512 1728
METERS

NOTE: Scale approximate; air photo base. NECK 81-1

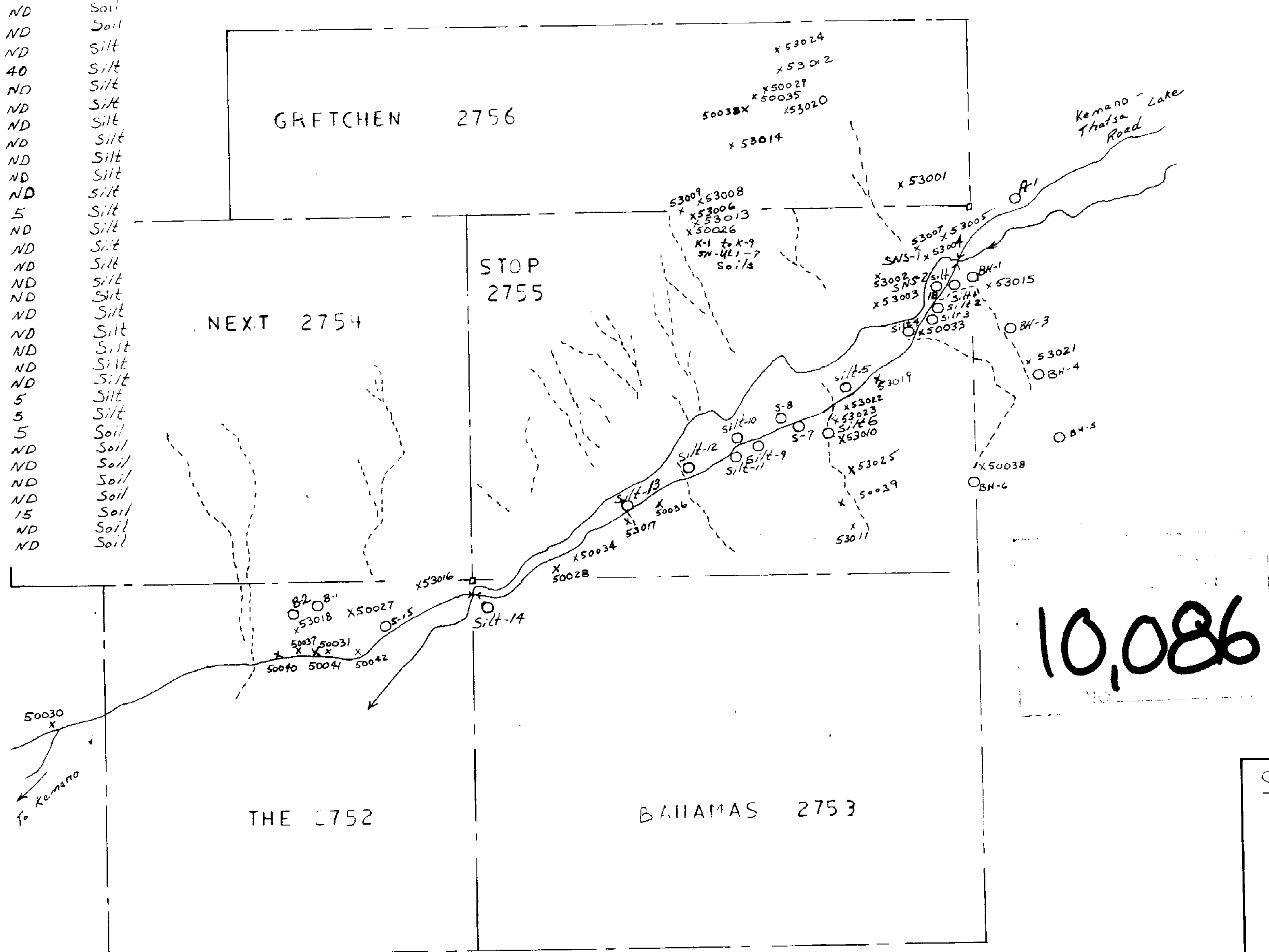
SAMPLE No	Cu ppm	Mo ppm	Ag ppm	Au ppb	
A-1	70	1	0.4	35	Silt
B-1	82	1	0.2	40	Silt
B-2	85	1	0.2	ND	Silt
K-1	173	4	0.2	ND	SOIL PROFILE 0-2.5m depth
K-2	250	7	0.2	ND	
K-3	360	16	0.2	ND	
K-4	260	7	0.4	ND	
K-5	100	5	0.2	ND	Soil
K-6	32	4	0.2	ND	Soil
K-7	48	3	0.4	ND	Soil
K-8	55	3	0.2	ND	Soil
K-9	15	2	0.2	ND	Soil
BH-1	64	6	0.2	ND	Silt
BH-3	52	6	0.2	40	Silt
BH-4	52	4	0.2	ND	Silt
BH-5	70	4	0.2	ND	Silt
BH-6	21	2	0.2	ND	Silt
S-7	190	6	0.2	ND	Silt
S-8	90	9	0.2	ND	Silt
S-15	40	3	0.3	ND	Silt
Silt-1	66	9	0.2	ND	Silt
Silt-1A	98	3	0.2	5	Silt
Silt-2	36	3	0.2	ND	Silt
Silt-3	32	3	0.2	ND	Silt
Silt-4	40	2	0.2	ND	Silt
Silt-5	51	10	0.2	ND	Silt
Silt-6	65	3	0.2	ND	Silt
Silt-9	152	4	0.2	ND	Silt
Silt-10	54	5	0.2	ND	Silt
Silt-11	380	17	0.3	ND	Silt
Silt-12	70	4	0.3	ND	Silt
Silt-13	32	ND	0.2	ND	Silt
Silt-14	35	2	0.2	5	Silt
SN-UL-1	62	7	0.2	5	Soil
SN-UL-2	35	1	0.2	5	Soil
SN-UL-3	70	ND	0.2	ND	Soil
SN-UL-4	40	1	0.2	ND	Soil
SN-UL-5	25	6	0.2	ND	Soil
SN-UL-6	21	1	0.2	ND	Soil
SN-UL-7	21	2	0.2	15	Soil
SNS-1	24	2	0.2	ND	Soil
SNS-2	40	2	0.2	ND	Soil

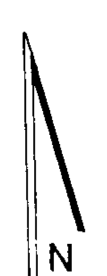
x Rock Sample

o Silt or Soil Sample

□ Initial Post

- - - Claim Line





SAMPLE No	Cu ppm	Mo ppm	Ag ppm	Au ppb
x 50026			0.2	ND
50027			0.2	5
50028			0.4	ND
50029			0.2	5
50030			0.3	ND
50031	1700	1	0.2	20
50032			0.2	ND
50033			0.2	ND
50034			0.5	ND
50035			0.2	5
50036	30	5	0.2	10
50037			0.2	ND
50038			0.4	ND
50039			1.0	5
50040			0.2	5
50041	1920	3	0.4	40
50042			0.2	10
53001			1.0	ND
53002			0.2	ND
53003			0.2	ND
53004			0.2	5
53005			0.2	ND
53006	2200	28	1.6	10
53007			0.2	ND
53008			0.2	ND
53009			0.2	ND
53010			0.2	ND
53011			1.6	ND
53012	32	2	0.2	ND
53013	4000	43	2.8	70
53014			0.2	ND
53015			0.2	ND
53016			0.4	ND
53017			0.2	10
53018			0.5	5
53019			0.2	ND
53020			0.2	ND
53021			0.2	ND
53022			0.2	ND
53023			0.2	5
53024			0.2	10
53025			0.2	ND
SN-23			0.2	ND

10,086

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NECK PROSPECT

GEOCHEMISTRY

SCALE 1:21,600

0 216 432 648 864 1080 1296 1512 1728

METERS

NOTE: Scale approximate; air photo base

NECK 81-2