

GEOCHEMICAL, GEOLOGICAL AND GEOPHYSICAL REPORT  
on the  
SHUKSAN PROPERTY  
Atlin Mining Division  
NTS 104 N/11,12

January, 1983

A.G. TROUP, P.Eng.  
C. WONG, B.Sc.

<u>Claim Name</u>	<u>Units</u>	<u>Record No</u>	<u>Anniversary Date</u>
KAREN 3	16	1366	July 28
KAREN 4	15	1367	July 28
KAREN 5	10	1368	July 28
KAREN 6	20	1369	July 28
KAREN 7	20	1370	July 28
KAREN 8	6	1371	July 28
KAREN 9	6	1372	July 28
SURPRISE 1	20	1756	October 22
SHUKSAN 1	12	1359	July 28
SHUKSAN 2	20	1360	July 28
SHUKSAN 3	3	1361	July 28
JULIA 4	12	1384	July 29

Location: 59°33' N, 133°29'W

Owner: Surprise Lake Exploration Limited Partnership

Operator: Standard Gold Mines Ltd.

Consultant: A.G.Troup, P.Eng., Archean Engineering Ltd.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,138**

GEOCHEMICAL, GEOLOGICAL AND GEOPHYSICAL REPORTon theSHUKSAN PROPERTYAtlin Mining DivisionNTS 104 N/11,12SUMMARY

The Shuksan property is a gold prospect located 12 kilometres east of Atlin in northwestern British Columbia. In September and October, 1982 a programme consisting of geologic mapping, rock chip sampling, soil sampling, VLF-EM and fluxgate magnetometer surveys were carried out over the property. Geologic mapping suggests that potential zones of gold mineralization occur near the top of an extensively carbonatized ultramafic and along steeply dipping gabbroic dykes. The soil sample, rock chip sample and VLF-EM survey results support this hypothesis.

Additional exploration of the property is recommended to be undertaken in two stages. Phase 1 entails further surface exploration and consists of geologic mapping, fluxgate magnetometer and VLF-EM surveys, soil sampling, rock chip sampling and trenching. The Phase 2 programme is dependent upon the results of Phase 1 and entails diamond-drilling areas defined by VLF-EM, magnetometer, soil sampling and rock chip sampling results.

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SHUKSAN PROPERTY

## Atlin Mining Division

1. INTRODUCTION

The Shuksan property is a lode gold prospect located in the heart of the historic Atlin placer gold camp in northwestern British Columbia (Fig.1). The property was staked in July, 1981 by the Surprise Lake Syndicate on the advice of Consulting Geologist, William T. Irvine after Yukon Revenue Mines Ltd. reported a large low-grade gold discovery in the area. The claims are held under option by Standard Gold Mines Ltd. of Vancouver, B.C.

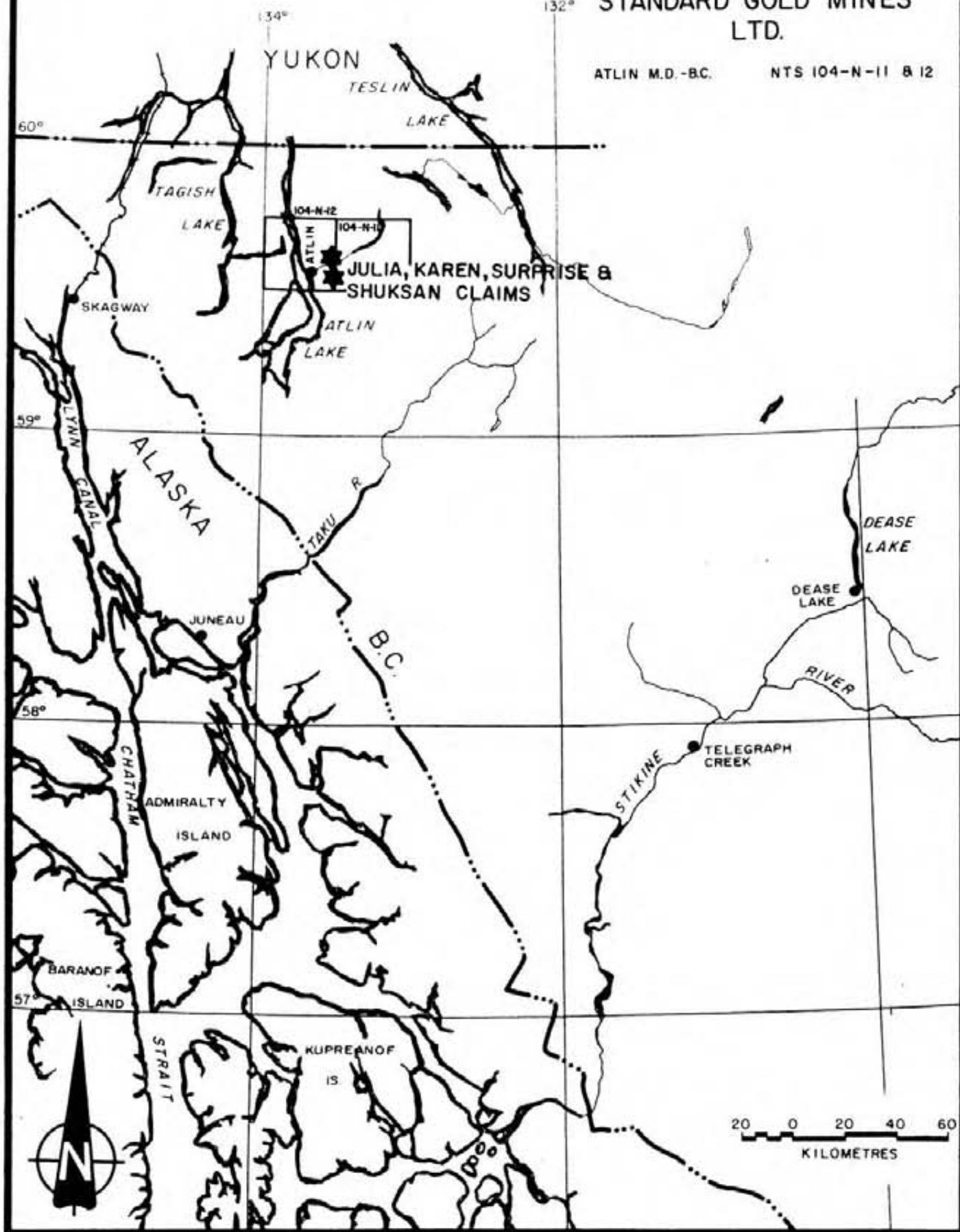
In September and October, 1982, follow-up work consisting of soil sampling, rock chip sampling, geologic mapping, VLF-EM and fluxgate magnetometer surveys were carried out over the property. A four-man crew working out of the town of Atlin, completed this work over the period September 21 to October 22, 1982. The programme was supervised by Mark Management project geologist C. Wong under the guidance of A.G. Troup, P.Eng., of Archean Engineering Ltd.

FIGURE 1

# LOCATION MAP STANDARD GOLD MINES LTD.

ATLIN M.D.-B.C.

NTS 104-N-11 & 12



## 1.1 LOCATION AND ACCESS

The Shuksan gold property located approximately 12 kilometres east of Atlin, covers an area of 40 square kilometres over the valleys of Birch, Spruce and Dominion Creeks. The claims are centred at latitude 59°33' and longitude 133°29' on NTS map sheets 104 N/4 and 5 (Fig. 2).

Atlin may be reached by car from Jakes Corner on the Alaska Highway (Mile 865), a distance of about 75 kilometres, along Highway 7. The distance from Jakes Corner to the major northern city of Whitehorse is about 80 kilometres along the Alaska Highway, which is paved over this entire length. Whitehorse is served with several flights a day from other major centres in Canada and Alaska.

Excellent access to the claims is provided by a gravel road that connects Atlin and Surprise Lake. There is a choice of four routes, depending on which portion of the property requires access. Access to the Julia 4 claim is provided by a good gravel road that services placer operations along Birch Creek. The northeast corner of the property is reached by a four-wheel drive road that leaves the Surprise Lake road just east of the outfall of Surprise Lake. The four-wheel drive road follows the south trending ridge located between Snake and Otter Creeks before heading west near the headwaters of Snake Creek. The road ends in a series of bulldozer trenches at an elevation of 5,000 feet on the east flank of Spruce Mountain. Access to the central portion of the property is provided by a good gravel road that services placer mining operations along Spruce Creek. The southern portion of the property is reached by a rough four-wheel drive road that leaves the main Spruce Creek road at the old Noland Mine near the confluence of Dominion and Spruce Creeks. This road follows the west side of Dominion Creek and crosses it near an old cabin at an elevation of 4,050 feet. Beyond here the road becomes extremely rough and winds its way south before ending near the southeast corner of the Shuksan 2 mineral claim at an elevation of 4,700 feet.

## 1.2 PHYSIOGRAPHY, VEGETATION AND CLIMATE

The Atlin area is located just east of the Coast Mountains on the Teslin Plateau. The town of Atlin lies on the east shore of Atlin Lake, the largest natural lake in British Columbia, at an elevation of 2,200 feet. The topography is moderately rugged with slopes of up to 30° rising from the Pine Creek valley floor at an elevation of 3,000 feet to mountains well over 6,000 feet. The immediate area of the property consists of short steep hills and wide, U-shaped valleys striking northeast and northwest. Glaciers occupied the Spruce Creek valley in Pleistocene time and deposited up to 300 feet of glaciofluvial till during their retreat. Meltwater channels are prominent on Spruce Creek just above its confluence with Dominimon Creek and near its confluence with Little Spruce Creek. Till cover is thin or non-existent above the valley floor, giving way to felsenmeer and outcrop at higher elevations.

The tree line is at approximately 4,500 feet on north facing slopes and 5,000 feet on south-facing slopes. Below 4,500 feet, the valleys are forested with lodgepole pine, black spruce, aspen and dwarf birch. Mountain alder and willow grow near streams with stunted buckbrush covering the hills above tree line.

Atlin enjoys a pleasant summer climate with temperatures averaging 20°C and little precipitation. Winter temperatures average -15°C in January with moderate snowfall. Total annual precipitation has been measured at 279.4 millimetres of moisture. "Winter" conditions can be expected from October to April.



### 1.3 CLAIM INFORMATION

The property is located in the Atlin Mining Division and consists of 12 modified grid claims totalling 160 units. The claims were staked in July, 1981 and are owned by the Surprise Lake Exploration Limited Partnership (also known as the Surprise Lake Syndicate) and currently held under option by Standard Gold Mines Ltd. of Vancouver, B.C. Claim information is listed in Table 1.

TABLE 1

CLAIM STATUS

<u>Claim Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Anniversary Date</u>
KAREN 3	16	1366	July 28
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SHUKSAN 3	3	1361	July 28
JULIA 4	12	1384	July 29

#### 1.4 HISTORY

Gold was first discovered in the Atlin area in 1897 by a man named Miller while en route to Dawson. The first workings were on Pine Creek and by the end of 1898, more than 3,000 people were camped in the Atlin area. Only eight creeks - Spruce, Pine, Birch, Boulder, Ruby, Otter, Wright and McKee - have been important producers in the Atlin camp. Gold production from these creeks in the period 1898 to 1946 is listed in Table 2. By far the most important producer was Spruce Creek with a reported total of well over 260,000 ounces of placer gold (1946). Almost all the gold was recovered from a Tertiary channel which appeared as a claybound orange-red gravel about three metres thick overlying bedrock. The channel was worked more or less progressively upstream from west to east for a distance of five and a half kilometres. The eastern limit of the worked channel is located at the old Noland Mine at the confluence of Spruce and Dominion Creeks. By 1957, the workings had been advanced underground a further 1,266 metres upstream. Gravels worked underground are reported to have averaged 0.65 ounces of gold to the cubic yard.

TABLE 2 (from Holland, 1950)

Gold Recovery from Productive Creeks in the Atlin Area, 1898-1946.

<u>Stream Name</u>	<u>Ounces of Gold Produced</u>
Spruce Creek	262,603
Pine Creek	138,144
Boulder Creek	67,811
Ruby Creek	55,272
McKee Creek	46,953
Otter Creek	20,113
Wright Creek	14,729
Birch Creek	12,898
All Others (21 creeks)	15,624

Gold-bearing quartz veins were first discovered in the Atlin area in 1899 and by 1905 most of the known showings had been discovered. Although the original showings have been repeatedly worked and re-examined there is no record of regional exploration for lode mineralization since 1905. Recently, Yukon Revenue Mines Ltd. acquired and re-examined the old Lakeview property. Work done in 1981 by Yukon Revenue showed low-grade gold values over an extensive but delicate stockwork of carbonatized and silicified andesite adjacent to a serpentinite intrusive.

The discovery by Yukon Revenue Mines Ltd. and the similarity of geology in the vicinity of major placer gold producing streams prompted the Surprise Lake Syndicate to stake the Shuksan property.

### 1.5 WORK DONE BY STANDARD GOLD MINES LTD. IN 1982

A late season programme was carried out over the property during the period September 21 to October 22, 1982 by a four-man crew based in Atlin. The following work was completed:

- 1) Detailed geologic mapping at a scale of 1:10,000 over the KAREN, SURPRISE and SHUKSAN mineral claims, and reconnaissance mapping of the JULIA 4 mineral claim.
- 2) Rock chip sampling of all mapping units, including outcrops, quartz veins and rust-stained boulders.
- 3) Soil sampling over selected areas of suitable geology.
- 4) Reconnaissance VLF-EM surveys over the Shuksan and Spruce Mountain grids.
- 5) An orientation fluxgate magnetometer survey along the Spruce Creek access road in the vicinity of the Noland Mine and over a portion of the Shuksan 2 mineral claim.

## 2. GEOLOGY

### 2.1 REGIONAL GEOLOGY

Geologic mapping of this area was undertaken in 1951-55 by J. D. Aitken and in 1975 by J. W. H. Monger of the Geological Survey of Canada. Aitken's work is compiled as map 1082A (Fig.3).

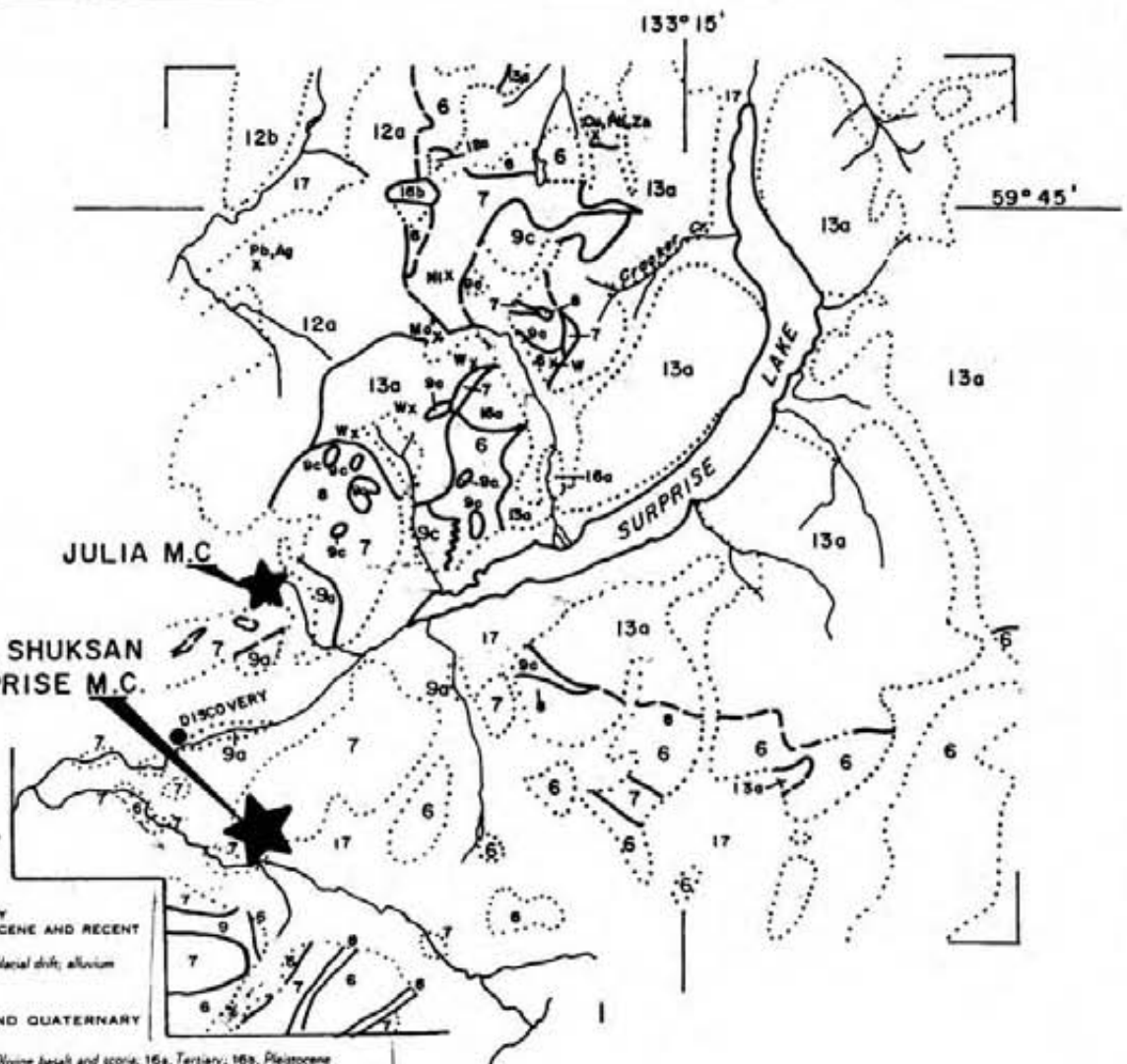
The Atlin region is located in a eugeosynclinal area composed of three distinct northwest striking tectonic belts; the St. Elias and Insular Belt, Coast and Cascades Belt and Intermontane Belt. The rocks of the area belong to the Atlin Terrane, which represents an independent tectonic entity of the oceanic sequence of the Intermontane Belt in the Canadian Cordillera. The Atlin Terrane consists of radiolarian cherts, pelites, carbonates, volcanics and ultramafics of the Paleozoic. These rocks are intruded by Mesozoic granite, alaskite and quartz monzonite. The youngest rocks of the Atlin Terrane are composed of Tertiary and Quaternary volcanics. Till deposited by receding Pleistocene glaciers extensively covers the valleys.

Structurally, the Atlin Terrane is characterized by northwest striking overthrusts, underthrusts and apparent right strike-slip faults. Fold axes generally strike northwest or trend southwest.

### 2.2 PROPERTY GEOLOGY

Outcrop exposure accounts for 30% of the surface area on the property. Felsenmeer is present in areas of no outcrop and is assumed to be close to outcrop. Till covers the valleys below 4,300 feet elevation.

Reconnaissance mapping of the Julia 4 claim agrees closely with the GSC mapping. The Shuksan property is underlain by Cache Creek Group metasediments and volcanics intruded by Pennsylvanian and Permian talcose ultramafics (Fig.4).



**LEGEND**

CENOZOIC	<b>QUATERNARY</b> PLEISTOCENE AND RECENT	17	Glacial drift, alluvium	
	<b>TERTIARY AND QUATERNARY</b>	16	Olivine basalt and scoria, 16a, Tertiary; 16b, Pleistocene	
	<b>TERTIARY (T)</b>	15	15a, quartz monzonite; 15b, granophyre; 15c, pebbles and diorite	
	<b>CRETACEOUS OR TERTIARY</b> SLOKO GROUP	14	Andesite, basalt; albite trachyte, albite rhyolite, dacite, and related pyroclastic rocks; conglomerate, sandstone	
	<b>CRETACEOUS</b>	13	13a, alkali; 13b, quartz monzonite	
	<b>JURASSIC</b> (May be in part older and younger) COAST INTRUSIONS	12	Undifferentiated granitic rocks; 12a, Black Mountain body; 12b, Fourth of July Creek body; 12c, pink granite; 12d, Mount McMaster body; 12e, diorite; 12f, alkaline granite	
	<b>JURASSIC</b> LABERGE GROUP	11	Volcanic greywacke, siltstone, mudstone, shale, conglomerate; minor concretionary sandy limestone	
	<b>TRIASSIC (T)</b>	10	Greywacke, chert, argillite, conglomerate, tuff, slate, greenstone, impure limestone, jasper	
	PALEOZOIC	<b>PENNSYLVANIAN AND PERMIAN</b> ATLIN INTRUSIONS	9	Peridotite; meta-diorite and meta-gabbro; 9a, serpentinite; 9b, carbonized serpentinite; 9c, talc-bearing (streamlined) ultramafic rocks
		<b>CACHE CREEK GROUP</b>	6, 7, 8	6, Chert, argillite, chert-pebble conglomerate and chert breccia; derived quartzite and schist; minor 7 and 8 7, Greenstone and volcanic greywacke; derived amphibolite; minor 6 and 8 8, Limestone and limestone breccia

x MINERAL OCCURENCE

STANDARD GOLD MINES LTD.  
JULIA, KAREN, SHUKSAN & SURPRISE M.C.  
ATLIN MD.—B.C. NTS 104-N-11,12

**GENERAL GEOLOGY MAP**

SCALE 1:253,440 (1"=4 Miles)

DATE: Feb., 1983

C.W./r.w.r.

AFTER GSC MAP 1082A

FIGURE 3

The Cache Creek Group rocks are of Pennsylvanian and Permian age and consist of limestone, chert and andesite. The andesite is typically drab grey-green in colour, siliceous, sometimes weakly carbonatized and contains up to 1% primary pyrite. The carbonatized ultramafic and carbonatized andesite are often difficult to distinguish apart because of their indistinct contact. The fetid limestone is ash grey in colour and contains fossil fragments believed to be crinoids. The dark grey to black coloured chert is a useful marker bed. Bedded chert is noted in only one location on the property. Cherty argillite also occurs in the chert horizon but is not mappable.

The Pennsylvanian and Permian ultramafics are part of the Atlin Intrusions and consist of serpentinite, carbonatized serpentinite and gabbroic dykes. Serpentinite is by far the most common ultramafic present. Usually it is dark green to dull waxy green in colour, slightly talcose, weathered and carbonatized and quartz veined near its contact with the chert. The quartz veins occasionally contain minor disseminated pyrite and mariposite. The carbonatized serpentinite is characterized by rusty orange-brown weathering and occurs as a recessive unit. It is rarely seen in outcrop although areas where numerous frost heaved carbonatized serpentinite chips are found are believed to be close to outcrop. The gabbroic dykes occur on Spruce Creek in the vicinity of the Noland Mine. The dykes are composed of medium grained pyroxene in a plagioclase groundmass.

Stratigraphically, from top to bottom, the units are as follows: andesite, carbonatized andesite, chert, carbonatized serpentinite, serpentinite and limestone. Locally pods of limestone are seen to lie stratigraphically above the serpentinite and below the chert. This incongruity is explained by the rafting up of limestone pods by the serpentinite as it intruded upwards through the limestone. In terms of age, the serpentinites are youngest. The true thickness of each unit is uncertain. The lower contact of the limestone is not mapped, making a determination of its thickness impossible. The chert horizon is believed to be thin; certainly not more than a metre thick. Due to erosion, the thickness of the andesite is indeterminable although it is believed to exist only as a thin capping.

The intrusive nature of the serpentinite suggests that sills and dykes of it pinch and swell in thickness. The gabbroic dykes extend into the andesite and measure up to five metres in width.

No faults were mapped on the property although hidden major faults may occur parallel to or underlie Spruce, Dominion and Rant Creeks. Folds as indicated by the mapped chert horizon are of the open type. Fold axial traces, southwest of Spruce Mountain, plunge to the northeast and southwest towards the Noland Mine. Two phases of folding are evident on the Shuksan 2 mineral claim. The primary antiform trends southwest and the secondary very low amplitude synform trends north-northwest (Figure 5).

### 2.3 ECONOMIC GEOLOGY

The Atlin area has enjoyed a history of productive placer mining and to a lesser extent, lode gold mining. Of special interest is the Noland Mine located at the confluence of Spruce and Dominion Creeks on the Karen 6 mineral claim and the Surprise lode showing on the Surprise 1 claim.

The Noland Mine was an underground operation worked until 1957 when static gold prices (\$35 Cdn per ounce) made further underground mining unattractive. During the period 1950 to 1957, a reported total of 41,000 ounces were produced from the underground workings. Many ounces of gold still remain and there are current plans to re-open the mine. Gravels mined from the gold-bearing Tertiary channel gave values as high as \$133 per cubic yard (gold valued at \$31 Cdn per ounce) although average values were 1/7 this amount. The gold occurs as coarse grains and nuggets, as is common in the Atlin area. Peculiarly, the highest grade gravel is in a short 300 feet stretch of the Tertiary channel where 200 feet of apparent left-lateral offset occurs (See Figures 6 and 7). Coincidentally, this high grade stretch of gravel is along strike of the gabbroic dykes mapped along Spruce Creek. The present-day Spruce Creek channel also shows this offset near the gabbroic dyke.



This suggests the possibility that the dyke acted as a mineralized solution guide and is related to gold mineralization.

The Surprise showing is located on the northeast shoulder of Spruce Mtn. at an elevation of approximately 4500 feet. The showing consists of a quartz vein emplaced in andesite measuring up to six metres in width and striking 170/70 W. Exploration with an adit prior to 1925 uncovered minor amounts of argentiferous galena, pyrite, chalcopyrite and siderite. Resampling of this showing in 1982 returned values of 0.042 ounces of gold per ton and 1.20 ounces of silver per ton. A series of 1980 bulldozer trenches located south of the Surprise showing exposes a carbonatized serpentinite stockwork containing pyrite and pervasive mariposite. Chip samples collected from the trenches assay as high as 0.018 ounces of gold per ton. The geology in the trenches appears very favourable. The presence of mariposite in the carbonatized serpentinite stockwork lends credence to the hypothesis that gold mineralization occurs at this stratigraphic level.

### 3. GEOCHEMISTRY

#### 3.1 ROCK CHIP SAMPLING

##### 3.1.1 SAMPLING AND SAMPLE TREATMENT

A total of 71 rock chip samples were collected for assay from various rock types, quartz veins, rust-stained boulders and mariposite stained carbonatized rock. Typically the samples consisted of two or three fist-sized representative specimens although areas of mineralization and great interest were systematically chip sampled. Sample sites were indicated by orange flagging and the samples placed in labelled plastic bags. The samples were shipped to Chemex Labs Ltd. in North Vancouver where they were crushed to minus 100 mesh and fire assayed for gold.

##### 3.1.2 PRESENTATION AND DISCUSSION OF RESULTS

Table 3 gives a brief description of the samples together with the assay results and sample numbers. Sample locations and assay results are shown in Figure 8. The results show gold assays to range from trace to 0.042 ounces per ton. Many of the quartz veins and boulders gave low assay values. The low values might be explained by the fact that many of the samples were obtained from veins occurring in sills and dykes of serpentinite where a minimum of hydrothermal activity took place. Gold values may be higher in veins near the plug of the serpentinite where hydrothermal fluids easily percolated up along fractures and shrinkage cracks. The best values are associated with the mariposite stained carbonatized serpentinite stockwork and from the Surprise quartz vein.

TABLE 3

Rock Sample Descriptions and Results

NOTE: L indicates less than

<u>Assay Tag No.</u>	<u>Sample</u>	<u>Assay Value (Au oz/t)</u>	<u>Description</u>
38301	SH 109	0.006	Quartz-calcite veinlets in chloritic andesite
38302	SH 200	0.008	Carbonatized andesite with minor pyrite
38303	SH 201-C	0.008	Chert
38304	SH 201-M	L0.003	Mariposite stained andesite
38305	SH 201-Q	0.004	Quartz vein with argillite fragments
38306	SH 202	L0.003	Carbonatized serpentinite with quartz veinlets
38307	SH 203	L0.003	Carbonatized serpentinite with quartz veinlets and mariposite staining
38308	SH 204	0.014	Rusty quartz veinlets in carbonatized andesite
38309	SH 301	L0.003	Quartz boulders at the andesite-serpentinite contact
38310	SH 302	L0.003	Carbonatized andesite with quartz veinlets
38311	SH 303	0.003	Quartz vein with minor chalcopyrite
38312	SH 304	0.003	Andesite with disseminated pyrite
38313	SH 305	0.003	Quartz vein at the andesite-serpentinite contact
38314	SH 306-Q	L0.003	Quartz vein in mariposite stained carbonatized andesite
38315	SH 307	L0.003	Quartz veinlets in andesite
38316	SH 306-M	0.003	Mariposite stained carbonatized andesite

TABLE 3 Continued

<u>Assay Tag No.</u>	<u>Sample</u>	<u>Assay Value (Au oz/t)</u>	<u>Description</u>
38317	SH 308	L0.003	Quartz vein with argillite fragments
38318	SH 309	0.003	Quartz vein in carbonatized andesite
38319	SH 310	L0.003	Quartz veinlets at the andesite-serpentinite contact
38320	SH 311-Q	L0.003	Rust-stained quartz veinlets
38321	SH 311-M	L0.003	Mariposite stained carbonatized serpentinite
38322	SH 312	L0.003	Quartz vein with mariposite stained carbonatized serpentinite
38323	SH 314	0.003	Silicified pyroxenite
38324	SH 205	L0.003	Chip sample across a sheared quartz vein
38325	SH 206	0.042 Ag 1.20 oz/t	Surprise showing, chip sample across a quartz vein containing minor galena
38326	SH 207	L0.003	Talcose ultramafic with disseminated pyrite
38327	SH 316	L0.003	Carbonatized serpentinite with mariposite
38328	SH 110	L0.003	Carbonatized andesite with quartz veinlets
38329	SH 111	L0.003	Carbonatized andesite
38330	SP 001	0.010	Carbonatized ultramafic from trench
38331	SP 002	L0.003	Silicified carbonatized serpentinite from trench
38332	SP 003	L0.003	Carbonatized serpentinite with mariposite
38333	SP 004	0.004	Carbonatized serpentinite with mariposite

TABLE 3 Continued

<u>Assay Tag No.</u>	<u>Sample</u>	<u>Assay Value (Au oz/t)</u>	<u>Description</u>
38334	SP 005	0.003	Carbonatized ultramafic gouge from trench
38335	SP 007	0.004	Silicified carbonatized serpentinite with mariposite from trench
38336	SP 008	0.018	Carbonatized ultramafic with mariposite from trench
38337	SP 006	0.004	Quartz veinlets with mariposite stained carbonatized ultramafic
38338	SP 010	0.003	Carbonatized serpentinite from trench
38339	SH 126	L0.003	Calcareous andesite with oxidized pyrite
38340	SH 120	L0.003	Andesite with quartz and pyrite
38341	SH 124	L0.003	Carbonatized andesite with quartz veinlets
38342	SH 125	L0.003	Calcareous andesite
38343	SH 122	L0.003 Cu 1600 ppm	Bedded chert with disseminated chalcopyrite
38344	SH 127	L0.003	Limy, rust-stained andesite with pyrite
38345	SH 128	L0.003	Carbonatized serpentinite
38346	SH 129	L0.003	Chlorite schist
38347	12W8N Shuksan Grid	L0.003	Carbonatized ultramafic with mariposite and quartz
38348	SH 317	L0.003	Quartz boulder
38349	SH 318	L0.003	Quartz with chert
38350	SH 319	L0.003	Quartz with carbonatized ultramafic
38397	SH 104	L0.003	Black chert with quartz veinlets
38398	SH 105	L0.003	Quartz vein in andesite

TABLE 3 Continued

<u>Assay Tag No.</u>	<u>Sample</u>	<u>Assay Value (Au oz/t)</u>	<u>Description</u>
38399	SH 106	L0.003	Quartz vein with chalcopyrite and malachite staining
38400	SH 107	L0.003	Chert with disseminated pyrite
47084	SH 320	L0.003	Carbonatized ultramafic with quartz veinlets
47085	SH 321	L0.003	Carbonatized ultramafic with quartz and mariposite.
47086	SH 322	L0.003	Rusty quartz
47087	SH 323	L0.003	Quartz with mariposite
47088	SH 324	L0.003	Carbonatized ultramafic
47089	SH 325	L0.003	Andesite with quartz veinlets
47090	SH 009	L0.003	Chert
47091	SH 010	L0.003	Carbonatized ultramafic with quartz and mariposite
47092	SH 208	L0.003	Carbonatized ultramafic with quartz and mariposite
47093	SH 211	L0.003	Rust-stained quartz boulder
47094	SH 212	L0.003	Talcoose serpentinite
47095	SH 213	0.042	Rust-stained quartz boulder lying on carbonatized serpentinite
47096	SH 214	L0.003	Silicified chert
47097	SH 215	0.004	Chert with quartz veinlets
47098	SH 216	L0.003	Green chert with quartz veinlets
47099	SH 217	0.005	Carbonatized serpentinite with quartz stringers
47100	SH 218	L0.003	Carbonatized serpentinite with quartz and mariposite

## 3.2 SOIL SAMPLING

### 3.2.1 SAMPLING, SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Soil sampling was carried out over selected areas of carbonatized serpentinite to test for the presence of gold. Samples were collected at 25 metre intervals along portions of the upper and lower carbonatized serpentinite contact. A total of 212 "B" horizon and talus-fine samples were collected with the aid of a mattock. All samples were placed in labelled kraft envelopes and shipped to Chemex Labs Ltd. in North Vancouver for analysis.

In the laboratory, samples were oven-dried at approximately 60° C and sieved to minus 80 mesh. The coarse fraction was discarded and the minus 80 fraction analysed for gold by atomic absorption.

### 3.2.2 PRESENTATION AND DISCUSSION OF RESULTS

The majority of the values obtained in the laboratory were below the detection limit of 10 ppb, therefore statistical methods could not be used to determine meaningful threshold and anomalous levels. Previous experience has shown that gold values of greater than 10 ppb may be considered important and possibly anomalous.

The soil sample results are plotted on Figures 9 and 10. The results show 50 of the 212 samples to contain detectible gold concentrations with values ranging from 10 ppb to 440 ppb. Considering the particulate and relatively insoluble nature of gold, it is significant that 24 percent of the values are anomalous. The highest value of 440 ppb occurs next to a strong northeast striking VLF-EM conductor located at L 13+00W, 6+00N on the Shuksan grid. This suggests the possibility that the conductor is a mineralized shear.

#### 4. GEOPHYSICS

##### 4.1 FLUXGATE MAGNETOMETER SURVEY

###### 4.1.1 INSTRUMENT AND SURVEY TECHNIQUES

An orientation fluxgate magnetometer survey was conducted along the Spruce Creek access road in the vicinity of the Noland Mine and over a portion of the Shuksan 2 mineral claim in an attempt to outline subsurface ultramafic dykes and bodies (Fig. 8). A base station was established and readings were taken at 15-30 minute intervals with a Scintrex MF-1 fluxgate magnetometer. Base station magnetometer readings, taken in the morning and throughout the day, were used to correct for diurnal variation.

A total of 5.8 line kilometres were surveyed using a Scintrex MF-2 fluxgate magnetometer. A control station was established and readings were checked each day so that the day to day variation could be corrected. Readings were taken at 50 metre intervals in a northerly direction and the time of day recorded. Field readings were later corrected and plotted as profiles.

###### 4.1.2 PRESENTATION AND DISCUSSION OF RESULTS

Results of the survey are shown in Figure 11. Readings are in gammas and have been corrected for diurnal and day to day variations.

The magnetometer survey results show a range of values from 7700 to 9200 gammas, with most values in the 8500 to 8900 gamma range. The profiles show broad fluctuations and a noise level on the order of 100 gammas. The local fluctuations in magnetic susceptibility may be due to boulders of ultramafic in overburden. Significantly, the highest readings occur over carbonatized ultramafic and on the projected strike of gabbroic dykes. It is suspected that a detailed survey would better define the ultramafic dykes located near the Noland Mine.



## 4.2 VLF-EM SURVEY

### 4.2.1 INSTRUMENT AND SURVEY TECHNIQUES

Reconnaissance VLF-EM surveys were conducted over the Spruce Mtn. and Shuksan grids using a Geonics EM-16 instrument. A total of 22.2 line kilometers were surveyed with readings taken at 25 metre intervals along east-west and northwest-southeast lines. Using the submarine transmitting station in Hawaii (Station NPM, 23.4 kHz), in-phase and quadrature readings were taken in a northwesterly direction (315°) to ensure that east and south dips were indicated as negative readings by the instrument. The in-phase readings were later reduced by use of the Fraser Filtering Technique (Fraser, 1969) and contoured.

### 4.2.2 PRESENTATION AND DISCUSSION OF RESULTS

Results of the survey are shown in Figures 12 and 13. In-phase and filtered in-phase readings are shown, with the filtered in-phase readings contoured at 10% contour intervals.

Results over the Spruce Mtn. grid show two sets of sub-parallel conductors striking northeast and northwest. The strongest conductor has a maximum Fraser Filter value of +39 and a northeast strike length of at least 300 metres. Two other conductors with moderate Fraser Filter values of +20 exceed this strike length by 500 metres. Significantly, a northeast striking conductor with values up to +21 located at L25+00N, 26+00E occurs adjacent to anomalous soil samples. The samples assayed as high as 140 ppb gold and were collected from the carbonatized serpentinite-andesite contact. In summary, the VLF-EM results are inconclusive and will require more extensive and detailed surveying to give further indications of mineralized structures.

The survey results over the Shuksan grid show a multitude of conductors striking between 045° and 120°. The strongest conductor has a maximum Fraser Filter value of +86 and a minimum strike length of 600 metres.

Other conductors are of comparable length but have values ranging between +35 and +57. Conductors located in the southeast corner of the grid are believed to be due to terrain effects. Many of the conductors occur over carbonatized serpentinite. Coincidentally, the strongest conductor lies adjacent to soil samples assaying as high as 440 ppb gold and may be outlining mineralized fractures. In-phase readings across the strongest conductor indicate that it is dipping gently to the northwest. This agrees with the geologic interpretation discussed in Section 2.2.

## 5. CONCLUSIONS

The results of the 1982 programme indicate that the Shuksan property is a very promising lode prospect. The potential for the discovery of a high-grade lode deposit is apparent in light of the rich underground workings in the Noland Mine. The coarse nature of the placer gold and its sometimes intimate association with quartz and ultramafic indicates little transport and a local source. Lode mineralization is believed to be epithermal in origin, controlled by fractures and dykes and to occur near the top of the carbonatized ultramafic. Other important findings of the programme are summarized as follows:

- 1) Detailed geologic mapping of the property shows Cache Creek Group rocks to be intruded by ultramafics of the Atlin Intrusions. Carbonate alteration of the ultramafic is extensive and characterized by rusty orange-brown weathering and the presence of mariposite.
- 2) Rock chip samples of quartz veins and carbonatized ultramafic assay up to 0.042 ounces of gold per ton. Gold background values are highest in the carbonatized ultramafic, suggesting that it is the host for the mineralization.
- 3) Soil samples collected from the carbonatized ultramafic reveal scattered high gold values over and adjacent to several of the VLF-EM conductors. This suggests that the conductors may represent mineralized fractures or shears within the carbonatized ultramafic.
- 4) VLF-EM survey results show several northeast and northwest striking conductors to occur near soil samples anomalous in gold.
- 5) The orientation magnetometer results indicate that a detailed survey may be useful in outlining carbonatized ultramafic and gabbroic dykes.

## 6. RECOMMENDATIONS

Additional exploration of the property is warranted. This work should include detailed mapping, detailed fluxgate magnetometer and VLF-EM surveys, soil sampling, rock chip sampling, trenching and possibly diamond drilling.

### PHASE 1

- 1) Detailed mapping of the Noland Mine area should be carried out to better define the gabbroic dykes and their relationship to mineralization.
- 2) A detailed fluxgate magnetometer survey in the Noland Mine area is to be carried out to explore for subsurface dykes and ultramafic bodies. Northeast oriented survey lines are to be spaced 100 metres apart with readings taken at 10 metre intervals.
- 3) A detailed VLF-EM survey is to be conducted over all carbonatized ultramafic zones and over the Noland Mine area in an effort to detect mineralized shears, fractures and quartz veins.
- 4) Soil samples should be collected over all EM conductors and analysed for gold.
- 5) The strong EM conductor located at L13 + 00W, 6 + 25N on the Shuksan grid should be trenched.
- 6) Rock chip sampling should be carried out along the trenches and across all suspected mineralized zones. The samples are to be assayed for gold and silver if galena is present.

### PHASE 2

Diamond drilling is contingent upon the results of the Phase 1 programme. Important anomalies defined by VLF-EM, magnetometer, soil sampling and rock chip sampling results should be drilled. Favourable geology should also be drilled, especially in the Noland Mine area.

REFERENCES

- Aitken, J.D., 1960, Geology, Atlin, Cassiar District, British Columbia: Geological Survey of Canada, Map 1082A, Scale 1:253,440.
- Black, J.M., 1953, Report on the Atlin Placer Camp: B.C. Ministry of Energy, Mines and Petroleum Resources, Open File Report, 71p.
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- Troup, A.G., 1982, Report on the Shuksan Gold Property: Engineers Report.
- Veerman, H., 1981, Spruce Creek - Dominion Creek Placer Gold Leases: Engineers Report.

Respectfully submitted,



A. G. Troup, P. Eng.

COSTS STATEMENT  
SHUKSAN CLAIMS  
21 September - 31 October 1982  
GEOPHYSICS, GEOLOGY, and GEOCHEMISTRY

GENERAL COSTS

FOOD & ACCOMMODATION

4 pers, 21 Sep-22 Oct, 94 man days @ \$41.58 \$ 3,908.35

FIXED WING

CP Air, 29 Sep-19 Oct, 2 @ \$400.39 800.78

RENTAL EQUIPMENT

Mark Management 4WD Bronco		
21 Sep-22 Oct, 32 days @ \$40	\$ 1,280.00	
4360 km @ \$0.15	654.00	
Gabriel 4WD Bronco, 30-31 Oct, 2 days @ \$40	80.00	
367 km @ \$0.15	55.05	
Tilden Pickup, 29 Sep-19 Oct, 21 days @ \$47.22	991.48	
Ezekiel Field Equipment, 94 man days @ \$6	564.00	3,624.53

SUPPLIES

399.18

SHIPMENTS

168.72

FUEL

587.19

REPAIRS

105.75

CONSULTANT'S FEES (Archean Engineering)

2,400.75

REPORT PREPARATION

5,521.27

TOTAL GENERAL COSTS

\$17,516.52  
=====

GEOPHYSICS COSTS

SALARIES & WAGES

3 pers, 22 man days @ \$83.15 \$ 1,829.30

BENEFITS @ 20%

365.86

RENTAL EQUIPMENT

Dora EM-16, 21 Sep-22 Oct, 32 days @ \$25	800.00	
Gallant EM-16, 21 Sep-22 Oct, 32 days @ \$25	800.00	
Goliath MF-1, 7-29 Oct, 13 days @ \$7	91.00	
Gallant MF-2, 7-29 Oct, 13 days @ \$23	299.00	1,990.00

SUPPLIES (Geonics EM-16 Crystal)

120.00

SHIPMENTS (MF-1, MF-2)

70.64

CONSULTANT'S FEES (Archean Engineering)

1,254.00

GENERAL COSTS APPORTIONED

22/75 X \$17,516.52

5,138.18

TOTAL GEOPHYSICS COSTS

\$10,767.98  
=====GEOLOGY COSTSSALARIES & WAGES

3 pers, 40 man days @ \$83.15

\$ 3,326.00

BENEFITS @ 20%

665.20

CONSULTANT'S FEES (Archean Engineering)

2,280.00

GENERAL COSTS APPORTIONED

40/75 X \$17,516.52

9,342.14

TOTAL GEOLOGY COSTS

\$15,613.34  
=====GEOCHEMISTRY COSTSSALARY & WAGES

3 pers, 13 man days @ \$83.15

\$ 1,080.95

BENEFITS @ 20%

216.19

ASSAYS and ANALYSES (Chemex Labs)

212 Soils for AU @ \$5.63

\$ 1,194.40

71 Rock Chip Assays for AU and

1 Rock Chip Assay for AG, AU and

1 Rock Chip Assay for CU, AU @ \$10.52

768.15 1,962.55CONSULTANT'S FEES (Archean Engineering)

741.00

GENERAL COSTS APPORTIONED

13/75 X \$17,516.52

3,036.20

TOTAL GEOCHEMISTRY COSTS

\$ 7,036.89  
=====

COSTS APPORTIONED  
TO CLAIMS

<u>CLAIM</u>	<u>GEOPHYSICS</u>	<u>GEOLOGY</u>	<u>GEOCHEMISTRY</u>	<u>TOTAL</u>
JULIA 4		1,171.00	\$	\$ 1,171.00
SURPRISE 1	1,940.18	1,951.64	1,901.86	5,793.68
KAREN 3		1,561.33		1,561.33
KAREN 4	1,455.13	1,463.75	1,426.40	4,345.28
KAREN 5	970.09	975.83	950.93	2,896.85
KAREN 6	1,940.18	1,951.64		3,891.82
KAREN 7	1,940.18	1,951.64		3,891.82
KAREN 8		585.50		585.50
KAREN 9	582.05	585.50	570.56	1,738.11
SHUKSAN 1		1,171.00		1,171.00
SHUKSAN 2	1,940.17	1,951.64	1,901.86	5,793.67
SHUKSAN 3		292.75	285.28	578.03
TOTALS	\$10,767.98 =====	\$15,613.22 =====	\$ 7,036.89 =====	\$33,418.09 =====



STATEMENT OF QUALIFICATIONSA. TROUP, P.ENG.ACADEMIC

1967	B.Sc. Geology	McMaster University, Ontario
1969	M.Sc. Geochemistry	McMaster University, Ontario

PRACTICAL

1981 -	#45-4100 Salish Dr. Vancouver, B.C.	Consulting Geologist with Archean Engineering Ltd.
1977 - 1980	Geological Survey of Malaysia	Project Manager on a CIDA supported mineral explora- tion survey over peninsular Malaysia.
1969 - 1977	Rio Tinto Canadian Exploration Ltd. Vancouver, B.C.	Geologist involved in all aspects of mineral explora- tion in B.C., the Yukon and N.W.T.
1968	McMaster University Dept. of Geology Hamilton, Ontario	M.Sc. thesis work. Reconnaissance mapping and geochemical study, Lake Shubenacadia area, Nova Scotia.
1967 (summer)	Canex Aerial Exploration Ltd. Toronto, Ontario	Geologist in charge of detailed mapping and reconnaissance geochemical program in Gaspé, Quebec
1966 (summer)	McMaster University Dept. of Geology Hamilton, Ontario	Detailed and reconnaissance mapping in Northern Ontario.
1965 (summer)	International Nickel Co. of Canada Thompson, Manitoba	Detailed mapping in the Thompson area, Manitoba.
1964 (summer)	Geological Survey of Canada Ottawa, Ontario	Regional geochemical survey in the Keno Hill area, Yukon.

STATEMENT OF QUALIFICATIONSCOLMAN WONGACADEMIC

1981	B.Sc. Geology	University of British Columbia
------	---------------	--------------------------------

PRACTICAL

1981 - Present	Mark Management Ltd. Vancouver, B.C.	Project Geologist involved in all aspects of mineral exploration in B.C. and the Yukon.
1980 (Summer)	Hudson Bay Expl. and Dev. Co. Ltd., Vancouver, B.C.	Prospecting and detailed mapping in Central and West-Central B.C.
1979 (Summer)	Hudson Bay Expl. and Dev. Co. Ltd., Vancouver, B.C.	Regional geochemical survey and prospecting in South-Central and South-Eastern B.C.
1978 (Summer)	Hudson Bay Expl. and Dev. Co. Ltd., Vancouver, B.C.	Property work in West-Central Yukon and Macmillan Pass, Yukon



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V6B 1N2

CERT. # : A8214139-001-  
INVOICE # : I8214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUKSAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb					
SM 001	201	180	--	--	--	--	--
SM 002	201	<10	--	--	--	--	--
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SM 007	201	<10	--	--	--	--	--
SM 008	201	<10	--	--	--	--	--
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SM 036	203	<10	--	--	--	--	--
SM 037	201	<10	--	--	--	--	--
SM 038	201	<10	--	--	--	--	--
SM 039	201	<10	--	--	--	--	--
SM 040	201	<10	--	--	--	--	--

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CERT. # : A8214139-002-A  
INVOICE # : 18214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUKSAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb					
SM 041	203	<10	--	--	--	--	--
SM 042	201	<10	--	--	--	--	--
SM 043	201	<10	--	--	--	--	--
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SM 122	201	<10	--	--	--	--	--
SM 123	201	<10	--	--	--	--	--
SM 124	201	<10	--	--	--	--	--



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CERT. # : A8214139-003-1  
INVOICE # : I8214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUK SAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb					
SM 125	201	<10	--	--	--	--	--
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UM 001	201	10	--	--	--	--	--
UM 002	201	<10	--	--	--	--	--
UM 003	201	<10	--	--	--	--	--
UM 004	201	<10	--	--	--	--	--
UM 005	201	10	--	--	--	--	--

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V6B 1N2

CERT. # : A8214139-004-1  
INVOICE # : I8214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUKSAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb					
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UM 007	201	30	--	--	--	--	--
UM 008	201	40	--	--	--	--	--
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UM 029	201	<10	--	--	--	--	--
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UM 031	201	<10	--	--	--	--	--
UM 032	201	<10	--	--	--	--	--
UM 033	201	<10	--	--	--	--	--
UM 034	201	<10	--	--	--	--	--
UM 035	201	<10	--	--	--	--	--
UM 036	201	<10	--	--	--	--	--
UM 100	201	<10	--	--	--	--	--
UM 101	201	<10	--	--	--	--	--
UM 102	201	<10	--	--	--	--	--
UM 103	201	<10	--	--	--	--	--
UM 104	201	20	--	--	--	--	--
UM 105	201	10	--	--	--	--	--
UM 106	201	<10	--	--	--	--	--
UM 107	201	10	--	--	--	--	--
UM 108	201	<10	--	--	--	--	--



Certified by *Heath Bickler*....



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1

TELEPHONE: (604) 984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : STANDARD GOLD MINES LIMITED

STE. 706-675 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1N2

CERT. # : A8214139-005-1  
INVOICE # : I8214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUKSAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb					
UM 109	201	20	--	--	--	--	--
UM 110	201	10	--	--	--	--	--
UM 111	201	10	--	--	--	--	--
UM 112	201	30	--	--	--	--	--
UM 113	201	20	--	--	--	--	--
UM 114	201	10	--	--	--	--	--
UM 115	201	10	--	--	--	--	--
UM 116	201	<10	--	--	--	--	--
UM 117	201	40	--	--	--	--	--
UM 118	201	20	--	--	--	--	--
UM 119	201	20	--	--	--	--	--
UM 120	201	10	--	--	--	--	--
UM 121	203	<10	--	--	--	--	--
UM 122	201	30	--	--	--	--	--
UM 123	201	10	--	--	--	--	--
UM 124	201	<10	--	--	--	--	--
UM 125	201	<10	--	--	--	--	--
UM 126	201	<10	--	--	--	--	--
UM 127	201	<10	--	--	--	--	--
UM 128	201	<10	--	--	--	--	--
UM 129	201	<10	--	--	--	--	--
UM 130	201	<10	--	--	--	--	--
UM 131	201	<10	--	--	--	--	--
UM 132	201	<10	--	--	--	--	--
UM 133	201	<10	--	--	--	--	--
UM 134	201	<10	--	--	--	--	--
UM 135	201	<10	--	--	--	--	--
UM 136	201	<10	--	--	--	--	--
UM 137	201	10	--	--	--	--	--
UM 138	201	<10	--	--	--	--	--
UM 139	201	<10	--	--	--	--	--
UM 140	201	<10	--	--	--	--	--
UM 141	201	<10	--	--	--	--	--
UM 142	203	10	--	--	--	--	--
UM 143	201	<10	--	--	--	--	--
UM 144	201	30	--	--	--	--	--
UM 145	201	<10	--	--	--	--	--
UM 146	201	<10	--	--	--	--	--
UM 147	201	10	--	--	--	--	--
UM 148	201	<10	--	--	--	--	--

Certified by *Hart Bichler*





# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1

TELEPHONE: (604) 984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

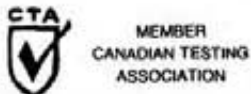
TO : STANDARD GOLD MINES LIMITED

STE. 706-675 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1N2

CERT. # : A8214139-006-1  
INVOICE # : I8214139  
DATE : 29-OCT-82  
P.O. # : NONE  
SHUK SAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	AU-AA ppb						
UM 149	201	20	--	--	--	--	--	--
UM 150	201	20	--	--	--	--	--	--
UM 151	201	<10	--	--	--	--	--	--
UM 152	201	<10	--	--	--	--	--	--
UM 153	201	10	--	--	--	--	--	--
UM 154	201	<10	--	--	--	--	--	--
UM 155	201	40	--	--	--	--	--	--
UM 156	201	<10	--	--	--	--	--	--
UM 157	201	10	--	--	--	--	--	--
UM 158	201	10	--	--	--	--	--	--
UM 159	201	<10	--	--	--	--	--	--
UM 160	201	<10	--	--	--	--	--	--



Certified by *Hart Bichler*.....





# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1

TELEPHONE: (604) 984-0221  
TELEX: 043-52597

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ASSAY

TO : STANDARD GOLD MINES LIMITED

STE. 706-675 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1N2

CERT. # : A8214138-001-  
INVOICE # : I8214138  
DATE : 1-NCV-92  
P.O. # : NONE  
SHUKSAN

ATTN: ART TRQUP & COLMAN WONG.

Sample description	Prep code	Ag FA oz/T	Au FA oz/t				
38301	207	--	0.006	--	--	--	--
38302	207	--	0.008	--	--	--	--
38303	207	--	0.008	--	--	--	--
38304	207	--	<0.003	--	--	--	--
38305	207	--	0.004	--	--	--	--
38306	207	--	<0.003	--	--	--	--
38307	207	--	<0.003	--	--	--	--
38308	207	--	0.014	--	--	--	--
38309	207	--	<0.003	--	--	--	--
38310	207	--	<0.003	--	--	--	--
38311	207	--	0.003	--	--	--	--
38312	207	--	0.003	--	--	--	--
38313	207	--	0.003	--	--	--	--
38314	207	--	<0.003	--	--	--	--
38315	207	--	<0.003	--	--	--	--
38316	207	--	0.003	--	--	--	--
38317	207	--	<0.003	--	--	--	--
38318	207	--	0.003	--	--	--	--
38319	207	--	<0.003	--	--	--	--
38320	207	--	<0.003	--	--	--	--
38321	207	--	<0.003	--	--	--	--
38322	207	--	<0.003	--	--	--	--
38323	207	--	0.003	--	--	--	--
38324	207	--	<0.003	--	--	--	--
38325	207	1.20	0.042	--	--	--	--
38326	207	--	<0.003	--	--	--	--
38327	207	--	<0.003	--	--	--	--
38328	207	--	<0.003	--	--	--	--
38329	207	--	<0.003	--	--	--	--
38330	207	--	0.010	--	--	--	--
38331	207	--	<0.003	--	--	--	--
38332	207	--	<0.003	--	--	--	--
38333	207	--	0.004	--	--	--	--
38334	207	--	0.003	--	--	--	--
38335	207	--	0.004	--	--	--	--
38336	207	--	0.018	--	--	--	--
38337	207	--	0.004	--	--	--	--
38338	207	--	0.003	--	--	--	--
38339	207	--	<0.003	--	--	--	--
38340	207	--	<0.003	--	--	--	--



.....  
*Shuksan*  
Registered Assayer, Province of British Columbia



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1

TELEPHONE: (604) 984-0221

TELEX: 043-52597

ANALYTICAL CHEMISTS

GEOCHEMISTS

REGISTERED ASSAYERS

## CERTIFICATE OF ASSAY

TO : STANDARD GOLD MINES LIMITED

STE. 706-675 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1N2

CERT. # : A8214138-002-1  
INVOICE # : I8214138  
DATE : 1-NOV-82  
P.O. # : NONE  
SHUKSAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	Ag FA oz/T	Au FA oz/t				
38341	207	--	<0.003	--	--	--	--
38342	207	--	<0.003	--	--	--	--
38343	207	--	<0.003	--	--	--	--
38344	207	--	<0.003	--	--	--	--
38345	207	--	<0.003	--	--	--	--
38346	207	--	<0.003	--	--	--	--
38347	207	--	<0.003	--	--	--	--
38348	207	--	<0.003	--	--	--	--
38349	207	--	<0.003	--	--	--	--
38350	207	--	<0.003	--	--	--	--
38397	207	--	<0.003	--	--	--	--
38398	207	--	<0.003	--	--	--	--
38399	207	--	<0.003	--	--	--	--
38400	207	--	<0.003	--	--	--	--
47084	207	--	<0.003	--	--	--	--
47085	207	--	<0.003	--	--	--	--
47086	207	--	<0.003	--	--	--	--
47087	207	--	<0.003	--	--	--	--
47088	207	--	<0.003	--	--	--	--
47089	207	--	<0.003	--	--	--	--
47090	207	--	<0.003	--	--	--	--
47091	207	--	<0.003	--	--	--	--
47092	207	--	<0.003	--	--	--	--
47093	207	--	<0.003	--	--	--	--
47094	207	--	<0.003	--	--	--	--
47095	207	--	0.042	--	--	--	--
47096	207	--	<0.003	--	--	--	--
47097	207	--	0.004	--	--	--	--
47098	207	--	<0.003	--	--	--	--
47099	207	--	0.005	--	--	--	--
47100	207	--	<0.003	--	--	--	--



MEMBER  
CANADIAN TESTING  
ASSOCIATION

.....  
*Mr. [Signature]*  
.....  
Registered Assayer, Province of British Columbia



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA V7J 2C1

TELEPHONE: (604) 984-0221  
TELEX: 043-52597

- ANALYTICAL CHEMISTS

GEOCHEMISTS

- REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO : STANDARD GOLD MINES LIMITED

STE. 706-675 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1N2

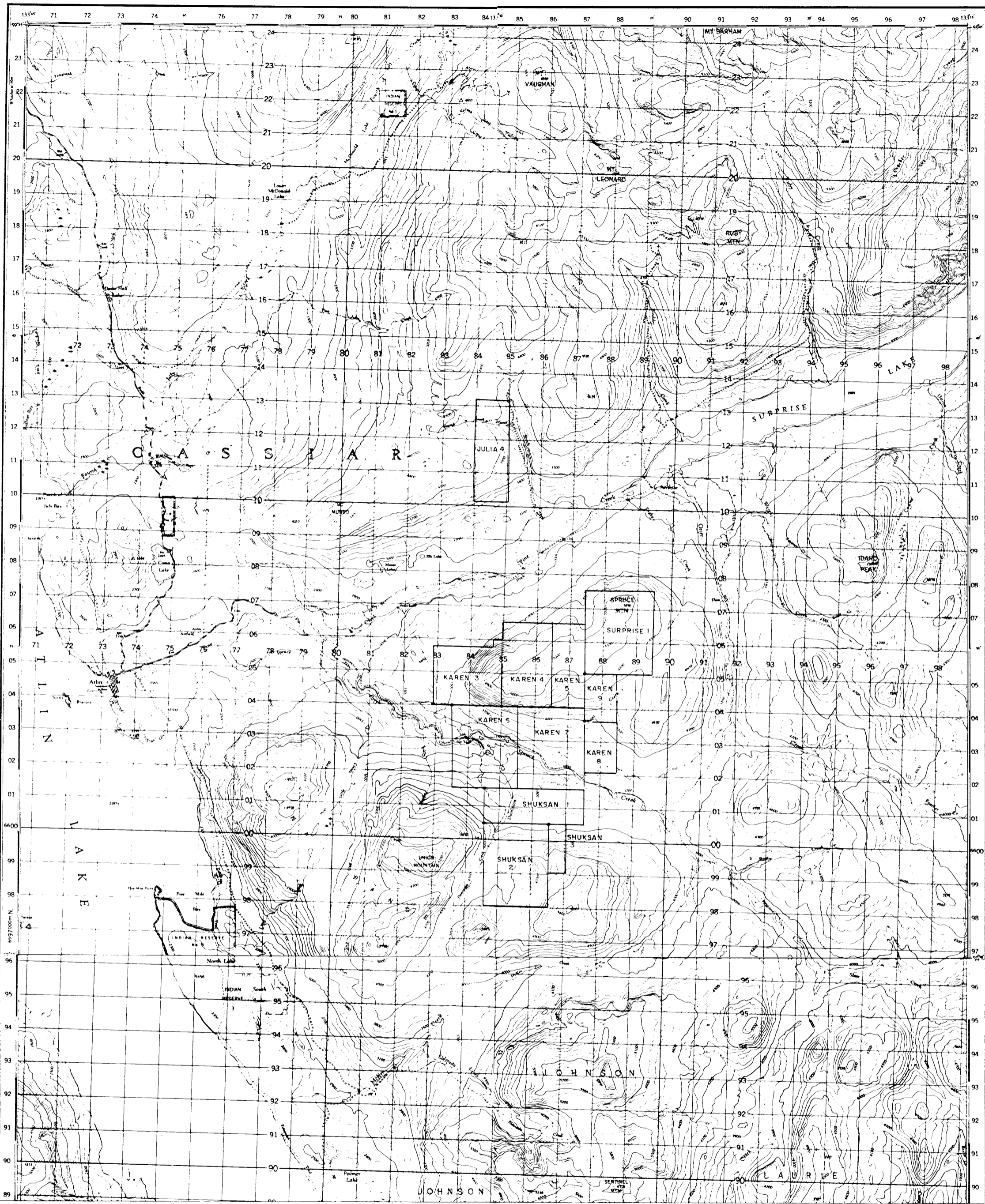
CERT. # : A8214138-002-  
INVOICE # : 18214138  
DATE : 1-NOV-82  
P.O. # : NONE  
SHUK SAN

ATTN: ART TROUP & COLMAN WONG.

Sample description	Prep code	Cu ppm						
38341	207	--	--	--	--	--	--	--
38342	207	--	--	--	--	--	--	--
38343	207	1600	--	--	--	--	--	--
38344	207	--	--	--	--	--	--	--
38345	207	--	--	--	--	--	--	--
38346	207	--	--	--	--	--	--	--
38347	207	--	--	--	--	--	--	--
38348	207	--	--	--	--	--	--	--
38349	207	--	--	--	--	--	--	--
38350	207	--	--	--	--	--	--	--
38397	207	--	--	--	--	--	--	--
38398	207	--	--	--	--	--	--	--
38399	207	--	--	--	--	--	--	--
38400	207	--	--	--	--	--	--	--
47084	207	--	--	--	--	--	--	--
47085	207	--	--	--	--	--	--	--
47086	207	--	--	--	--	--	--	--
47087	207	--	--	--	--	--	--	--
47088	207	--	--	--	--	--	--	--
47089	207	--	--	--	--	--	--	--
47090	207	--	--	--	--	--	--	--
47091	207	--	--	--	--	--	--	--
47092	207	--	--	--	--	--	--	--
47093	207	--	--	--	--	--	--	--
47094	207	--	--	--	--	--	--	--
47095	207	--	--	--	--	--	--	--
47096	207	--	--	--	--	--	--	--
47097	207	--	--	--	--	--	--	--
47098	207	--	--	--	--	--	--	--
47099	207	--	--	--	--	--	--	--
47100	207	--	--	--	--	--	--	--



Certified by Hart Bichler



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

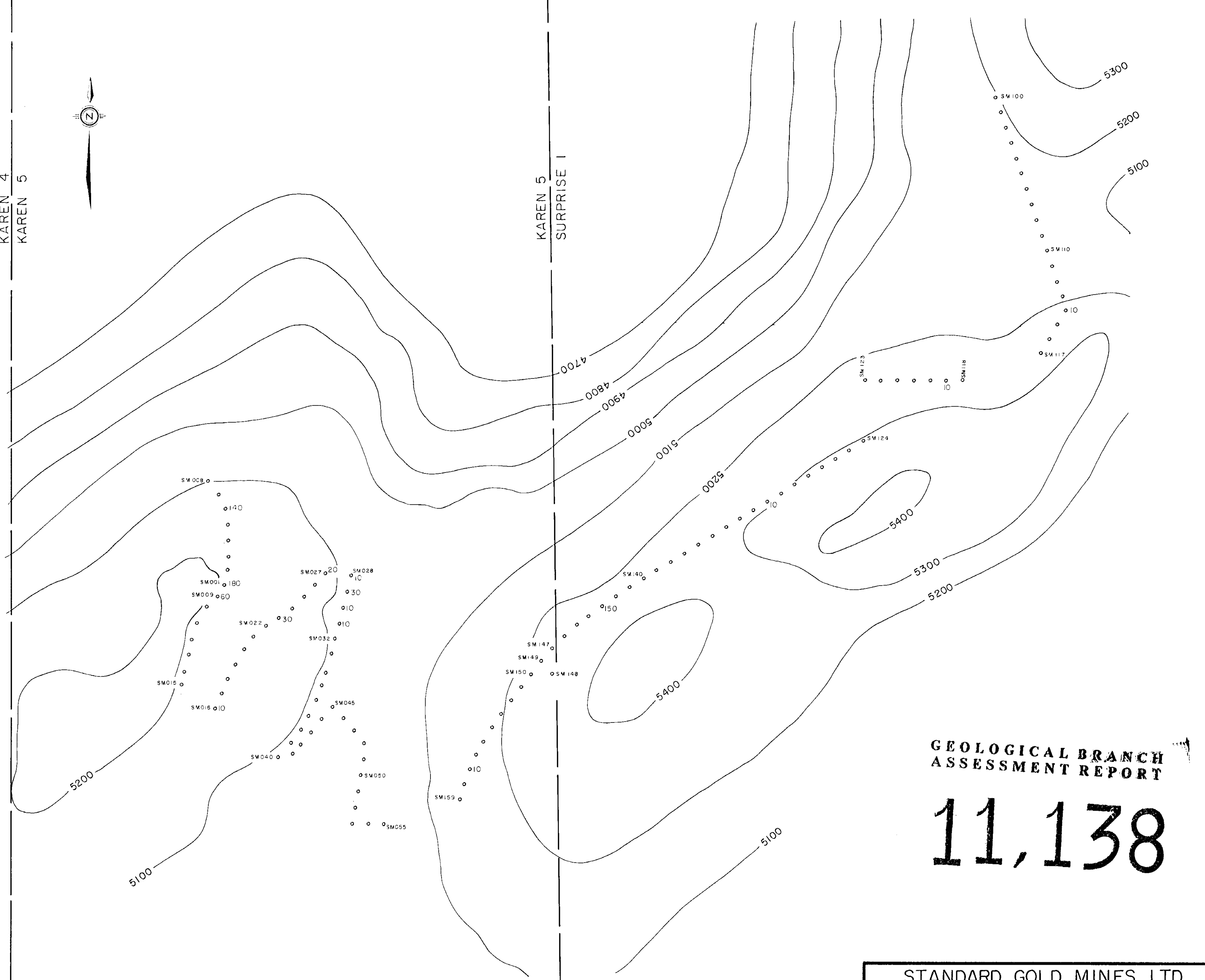
**11,138**

STANDARD GOLD MINES LTD.	
JULIA, KAREN, SHUKSAN & SURPRISE M.C.	
ATLIN MINING DIVISION B.C.	
CLAIM MAP	
0 1000 2000 3000 4000 5000 METRES	
BY: C.W./r.w.r.	NTS. 104-N-11 & 12 DATE: JAN. 27/83 FIGURE 2

KAREN 4  
KAREN 5



KAREN 5  
SURPRISE 1



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,138**

**LEGEND:**

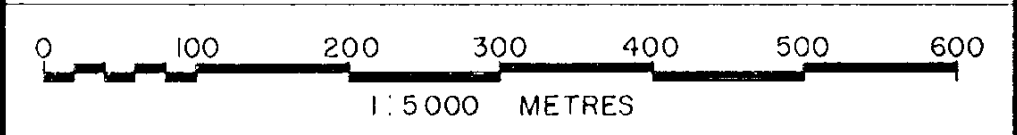
- Soil sample location
- SM036 Sample number
- 10 Gold value in ppb.

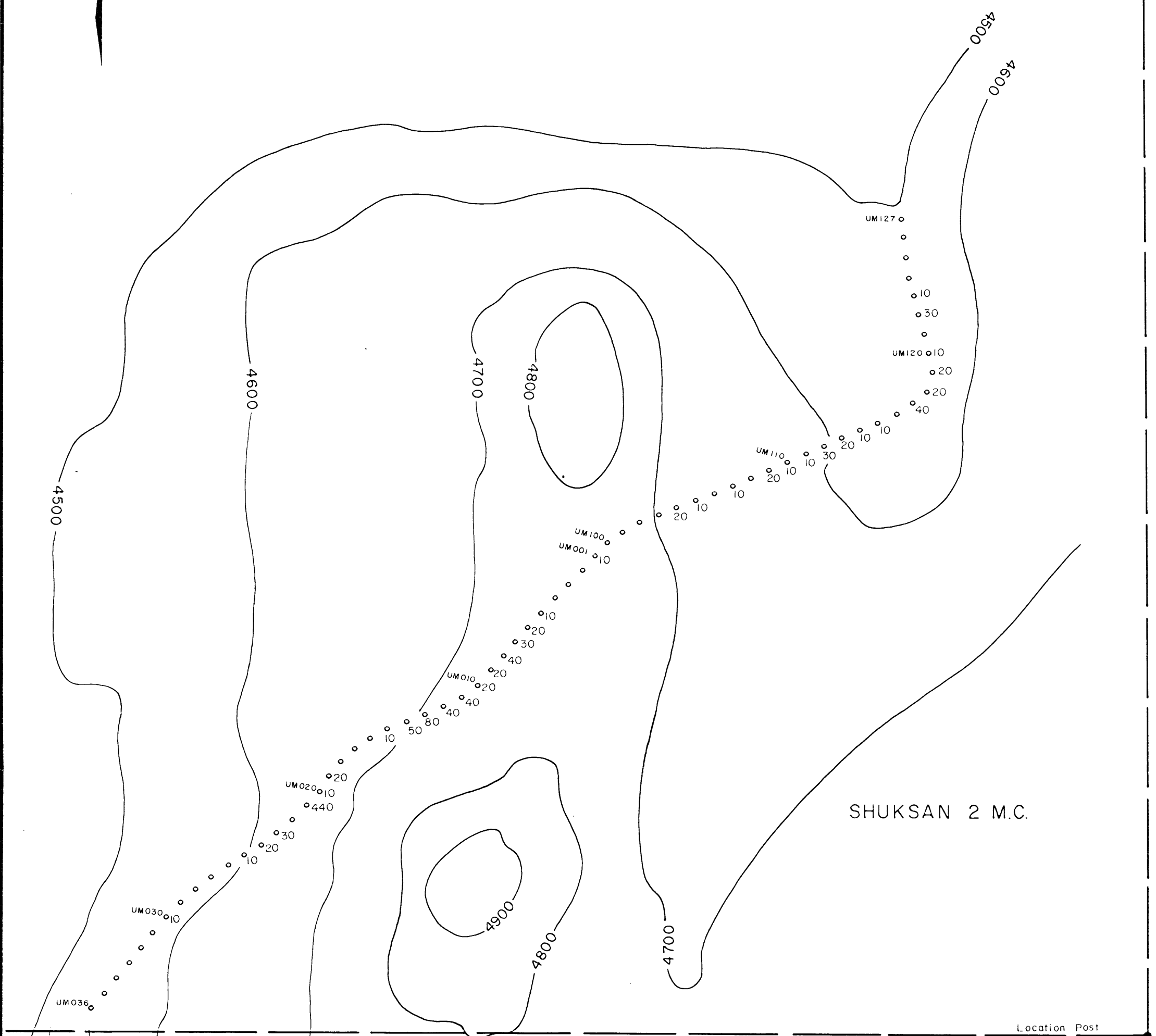
Gold values that recorded <10 ppb are not plotted.  
All samples were analyzed.

**SURPRISE 1  
KAREN 9**

**STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY ; ATLIN M.D.-B.C.  
KAREN 5 & SURPRISE 1 M.C.**

**SOIL GEOCHEMISTRY  
(GOLD)**





**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,138**

**LEGEND:**

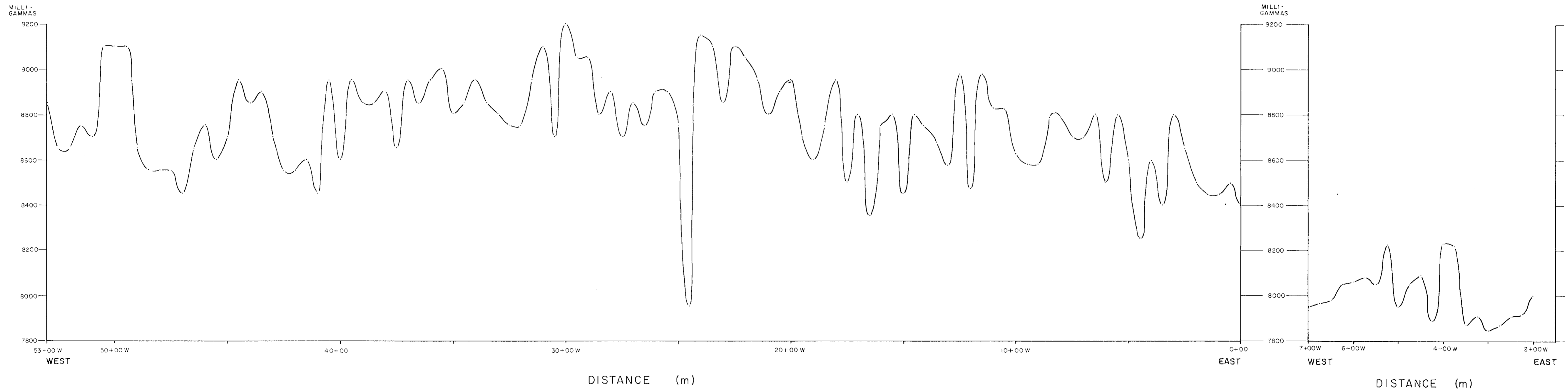
- o Soil sample location
  - UM 036 Sample number
  - 10 Gold value in ppb.
- Gold values that recorded <10ppb are not plotted.  
All samples were analyzed.

STANDARD GOLD MINES LTD. SHUKSAN PROPERTY ; ATLIN M.D.-B.C. SHUKSAN 2 M.C.	
<b>SOIL GEOCHEMISTRY (GOLD)</b>	
<p>0 100 200 300 400 500 600 1:5000 METRES</p>	
NTS 104-N-11 DATE: NOV. 14/82      AT./r.w.r.      FIGURE <u>10</u>	

# 11,138

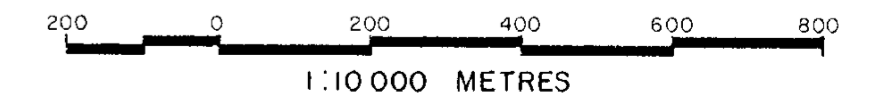
SHUKSAN GRID  
T.L. 3+50 N

## SPRUCE CREEK ROAD - FLUXGATE MAGNETOMETER SURVEY LINE



STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY ; ATLIN M.D.-B.C.

### MAGNETOMETER PROFILES



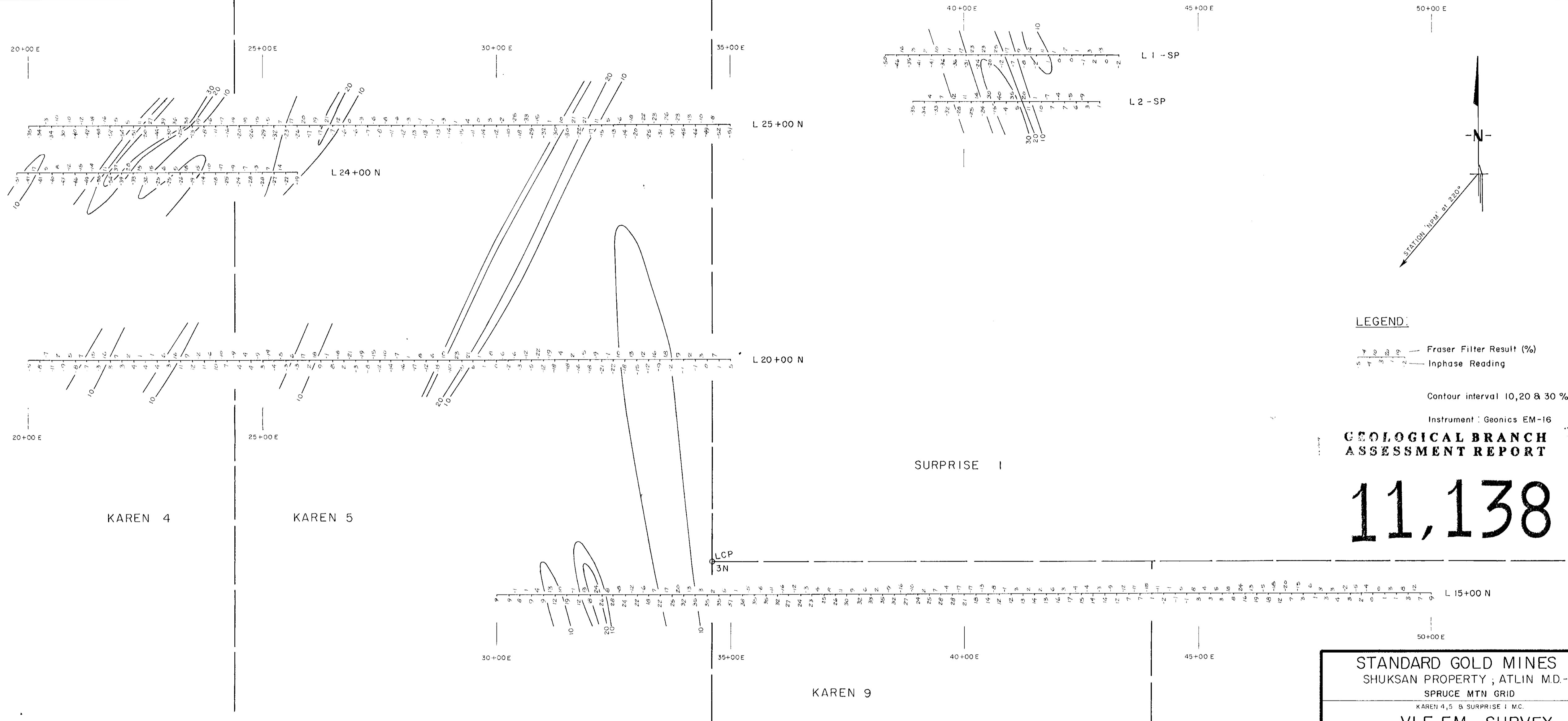
INSTRUMENT: Fluxgate MF-2 Magnetometer

NTS 104-N-11812

DATE: JAN. 30/1983

CW/r.w.

FIGURE 11



**LEGEND:**

- Fraser Filter Result (%)
  - - - Inphase Reading
- Contour interval 10, 20 & 30 %

Instrument : Geonics EM-16

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

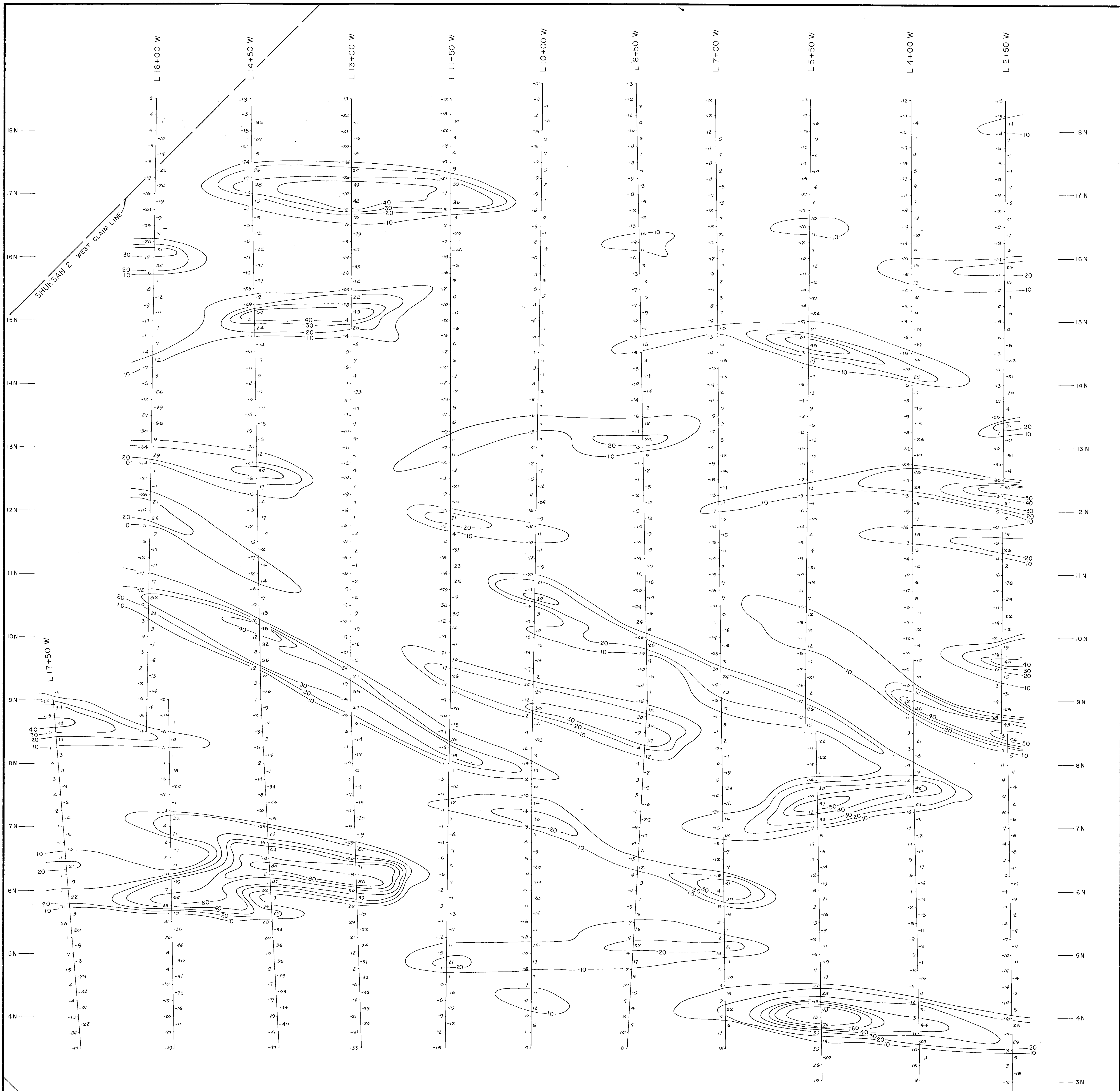
**11,138**

STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY ; ATLIN M.D.-B.C.  
SPRUCE MTN GRID  
KAREN 4,5 & SURPRISE 1 M.C.

**VLF-EM SURVEY**  
CONTOURS OF FRASER FILTER RESULTS (%)

100 0 100 200 300 400  
1:5000 METRES





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,138

LEGEND:

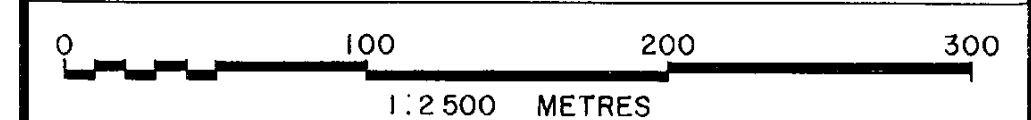
In-phase reading  $\rightarrow$  Fraser filter result (%)

Contoured at 10% intervals

Instrument: Geonics EM-16

STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY; ATLIN M.D.-B.C.  
SHUKSAN GRID

VLF-EM SURVEY  
CONTOURS OF FRASER FILTER RESULTS (%)

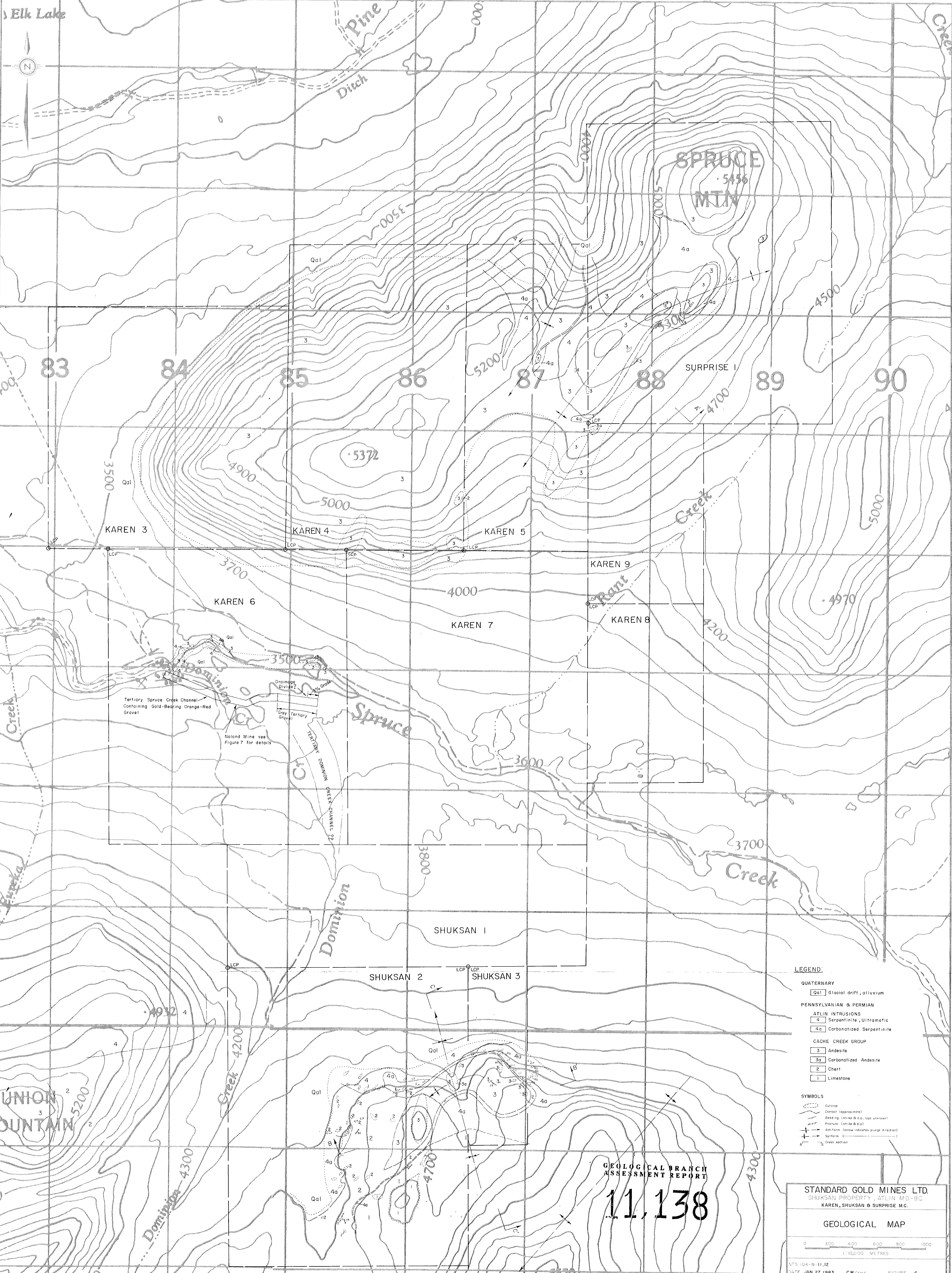


NTS 104-N-11

DATE: JAN 30/1983

AT./r.w.r.

FIGURE 13



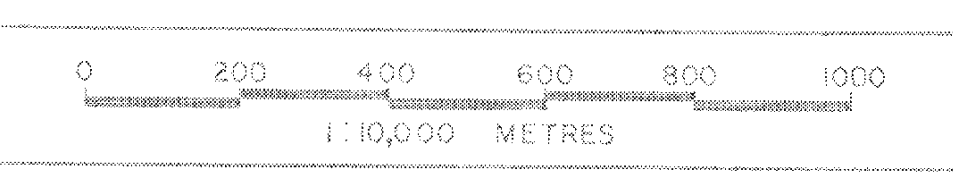
- LEGEND**
- QUATERNARY**
- Qal Glacial drift, alluvium
- PENNSYLVANIAN & PERMIAN**
- ATLIN INTRUSIONS**
- 4 Serpentine, Ultramafic
  - 4a Carbonatized Serpentine
- CACHE CREEK GROUP**
- 3 Andesite
  - 3a Carbonatized Andesite
  - 2 Chert
  - 1 Limestone
- SYMBOLS**
- Outcrop
  - Contour (approximate)
  - ▭ Bedding (strike & dip, tops unknown)
  - ▭ Fracture (strike & dip)
  - ▭ Anticline (arrow indicates plunge direction)
  - ▭ Synform (arrow indicates plunge direction)
  - Cross section

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,138

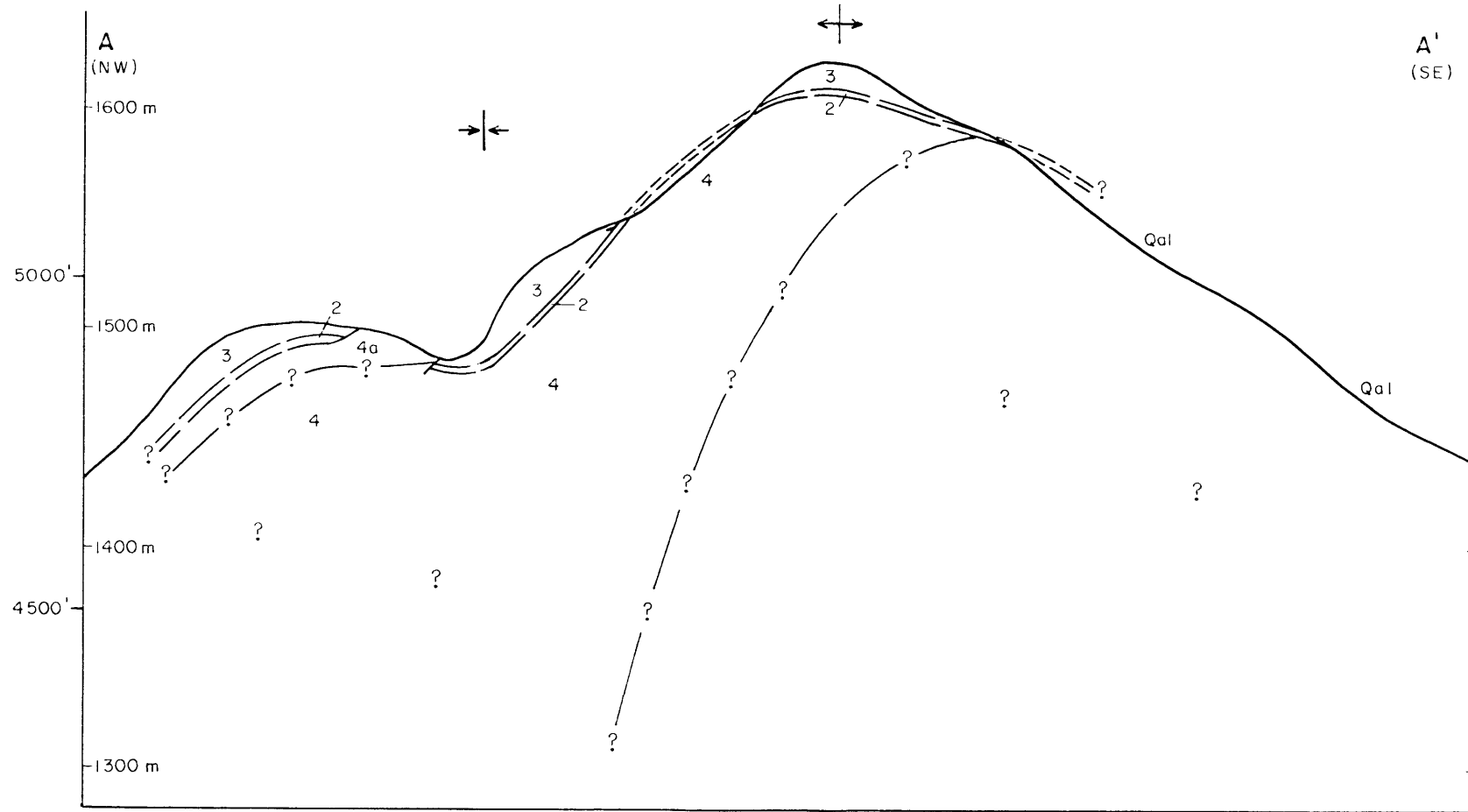
STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY, ATLIN M.D.-B.C.  
KAREN, SHUKSAN & SURPRISE M.C.

GEOLOGICAL MAP

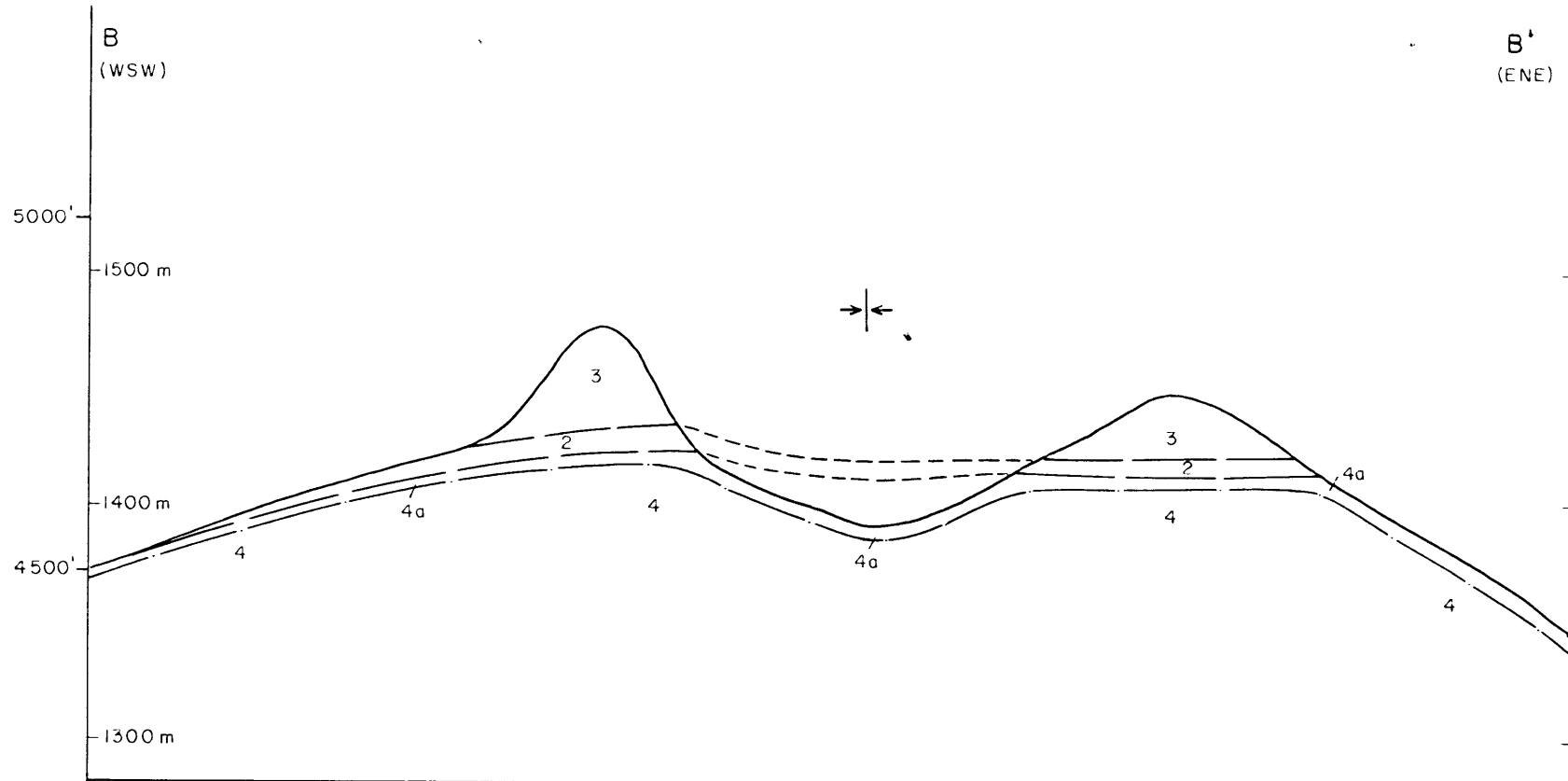


NTS 104-N-11,12  
DATE JAN. 27, 1983 C.W./P.W. FIGURE 4

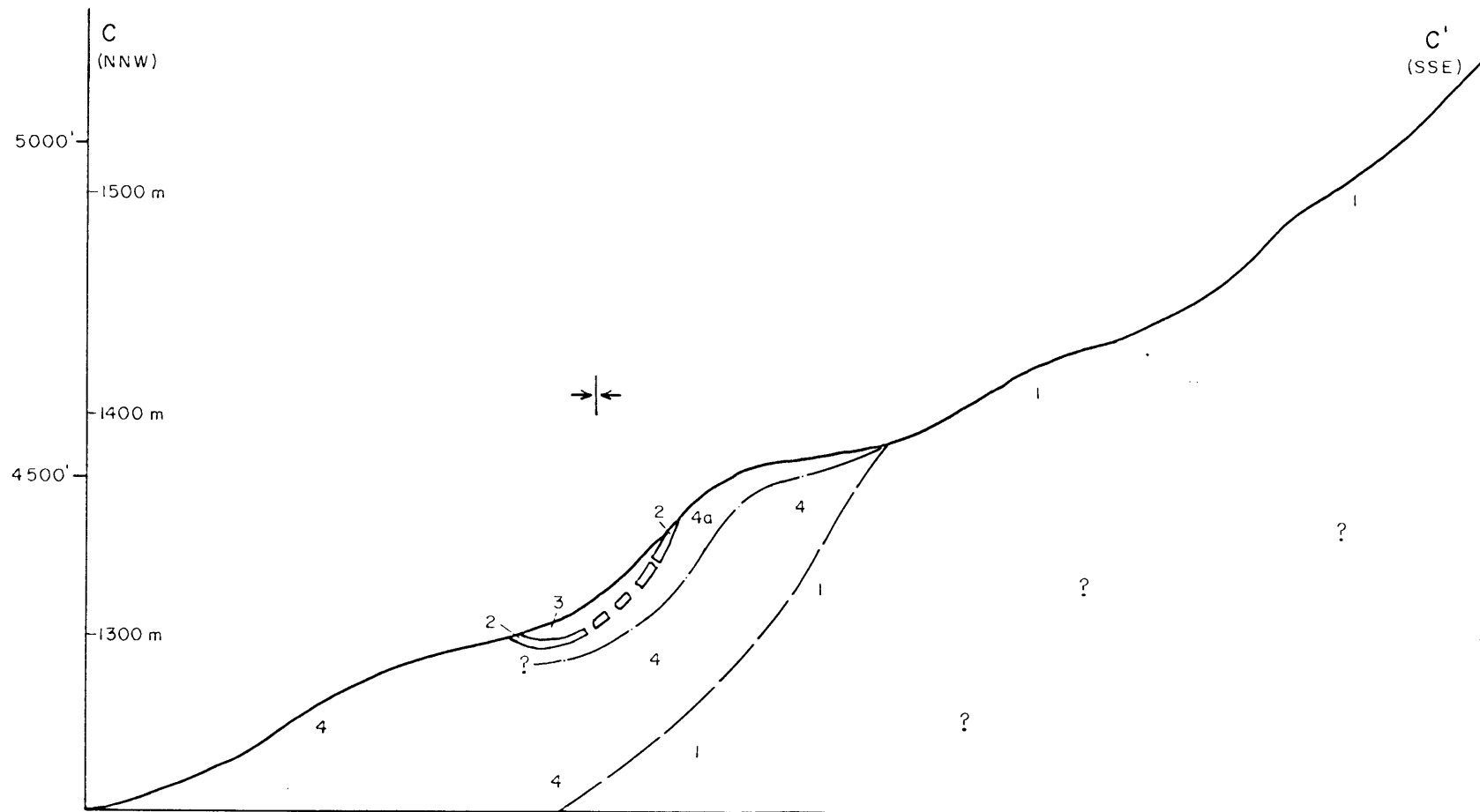
**CROSS-SECTION A-A'**



**CROSS-SECTION B-B'**



**CROSS-SECTION C-C'**



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,138**

**LEGEND:**

**QUATERNARY**

Qal Glacial drift, alluvium

**PENNSYLVANIAN & PERMIAN**

**Atlin Intrusions**

4 Serpentinite, ultramafic  
4a Carbonatized serpentinite

**Cache Creek Group**

3 Andesite  
3a Carbonatized andesite  
2 Chert  
1 Limestone

--- Contact (approximate), (gradational)

↑ ↓ Antiform

↓ ↑ Synform

STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY ATLIN M.D.-B.C.

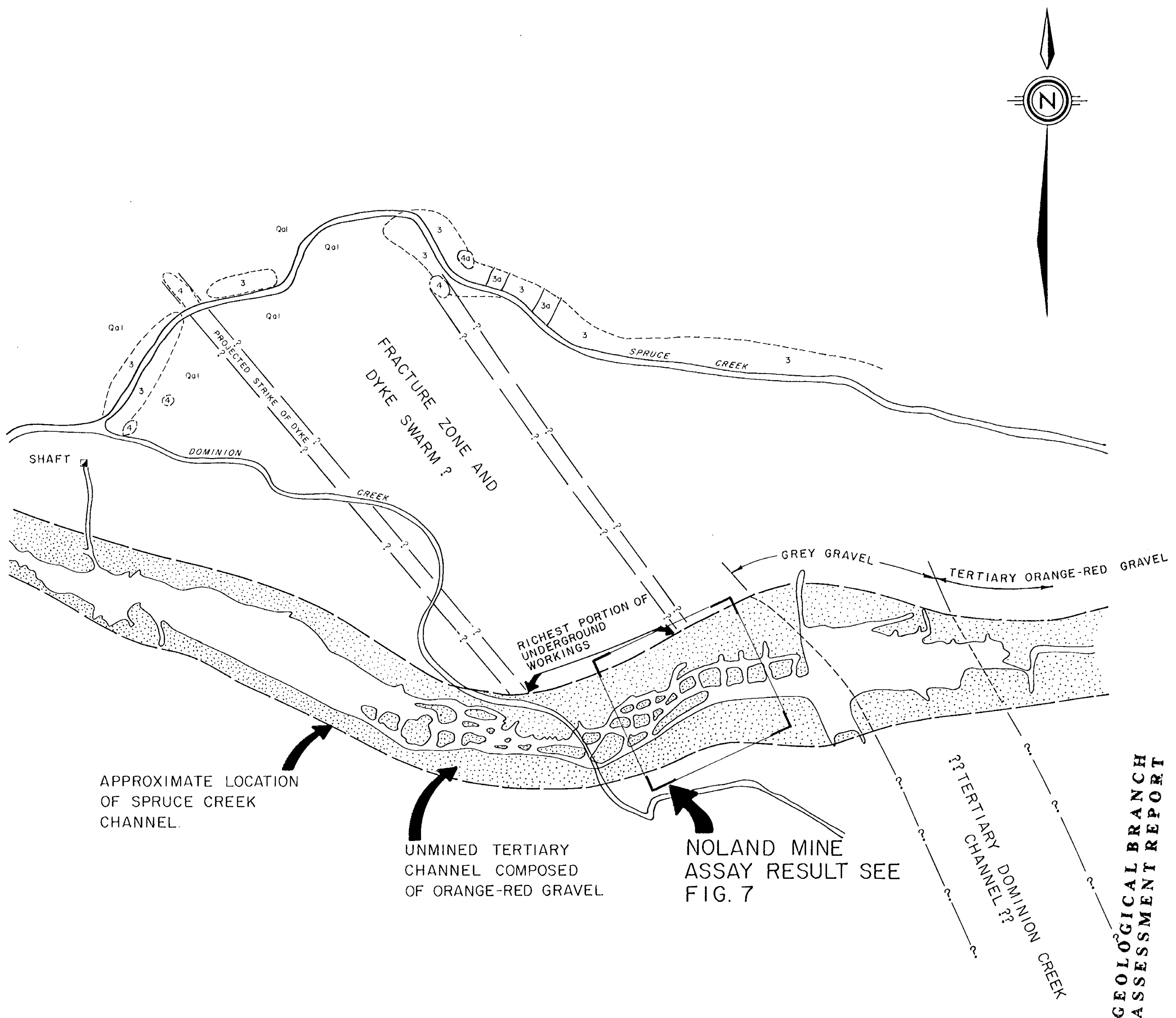
**CROSS SECTIONS**

Vertical scale 1 cm = 100 feet  
Horizontal scale 1 cm = 100 metres  
Vertical exaggeration = 3.3 x

NTS 104-N-11 & 12

DATE: JAN. 30, 1983 C.W./r.w.r.

FIGURE 5



GEOLOGICAL BRANCH ASSESSMENT REPORT

11,138

**LEGEND:**

- Qal Glacial drift, alluvium
- 4 Serpentine, gabbroic dyke
- 3 Andesite
- 3a Carbonatized andesite

**STANDARD GOLD MINES LTD.**  
SHUKSAN PROPERTY AT LIN M.D.-B.C.  
KAREN 6 M.C.

---

LOCATION OF:  
**UNDERGROUND WORKINGS IN  
THE NOLAND MINE**

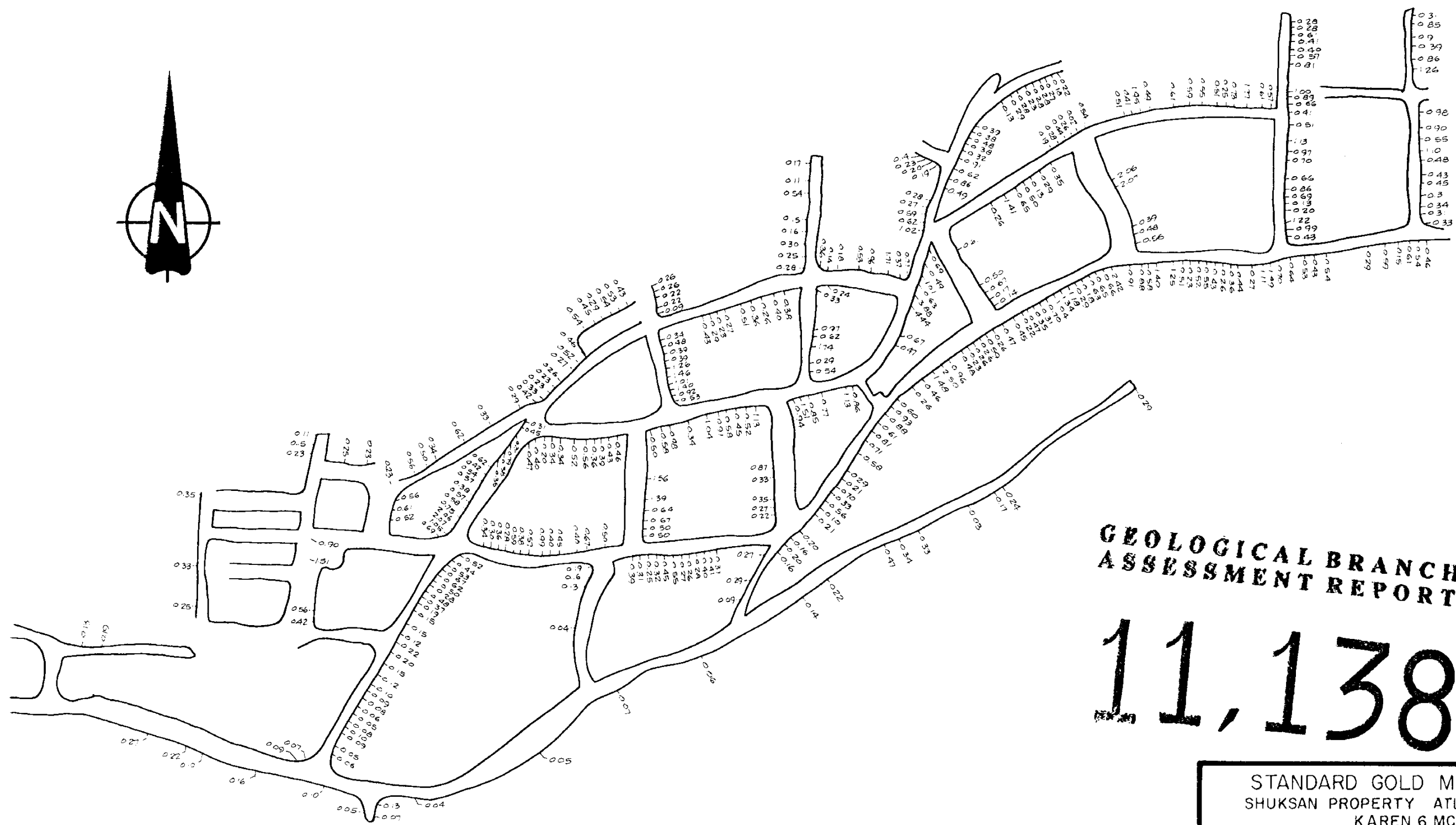
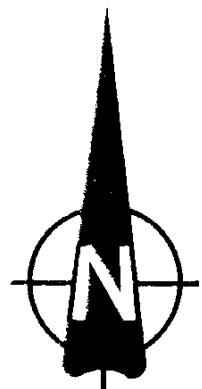
---

0      100      200      300m  
1:3 600

---

NTS 104-N-11 & 12  
DATE: JAN. 30, 1983      C.W./r.w.r      FIGURE 6

From Veerman, 1981



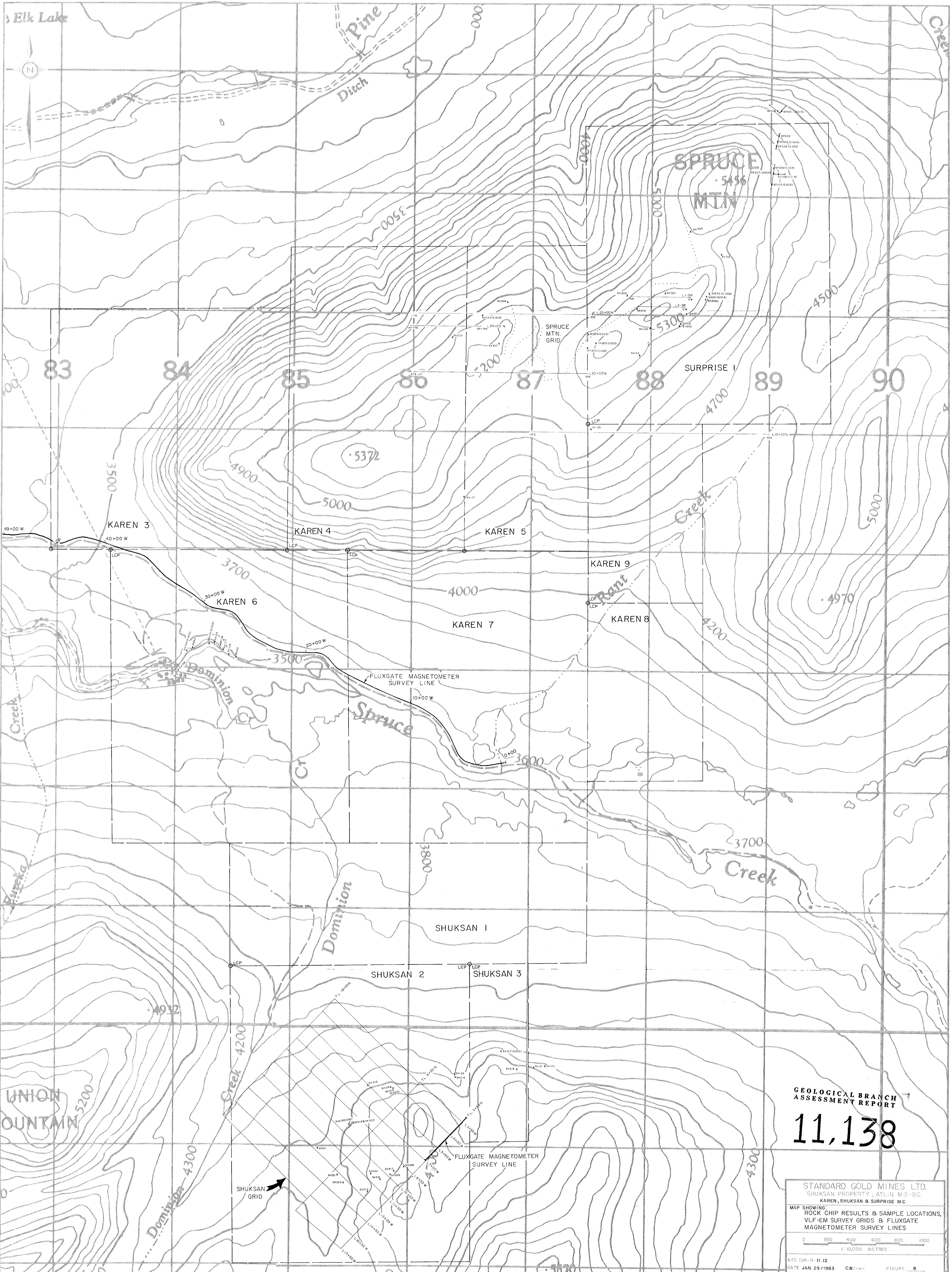
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,138**

LEGEND.  
Values are ounces of GOLD /cubic yard of GRAVEL

NOTE: From VEERMAN, 1981

STANDARD GOLD MINES LTD. SHUKSAN PROPERTY ATLIN M.D. - B.C. KAREN 6 MC.
ASSAY PLAN OF THE NOLAND MINE
SCALE 1:730
NTS. 104-N-11,12 DATE Feb / 1983 C.W./r.w.r. FIGURE 7



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,138

STANDARD GOLD MINES LTD.  
SHUKSAN PROPERTY, ATLIN, B.C.  
KAREN, SHUKSAN & SURPRISE M.C.

MAP SHOWING  
ROCK CHIP RESULTS & SAMPLE LOCATIONS,  
VLF-EM SURVEY GRIDS & FLUXGATE  
MAGNETOMETER SURVEY LINES

0 200 400 600 800 1000  
1:10,000 METRES

S/GS 104-N-11.12  
DATE JAN 29/1983 C.W./rwr. FIGURE 8