Box 12

FINAL REPORT
1977 GEOLOGY PROGRAMME

QUASH CREEK CLAIMS
104G/9W & 16W

D.A. Donnelly

November 1977 Project 19

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104 G/9W & 16W
PROJECT 19

by

D.A. Donnelly

November 1977

Vancouver, B.C.

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SUMMARY

This report describes a mapping programme completed during 1977 on the "Quash Creek Claims" (Project 19), and the "Al Claims" (Silver Standard Mines Ltd.), situated some 8 km east of Nuttlude Lake, and about 20 km southwest of Iskut, British Columbia. Texasgulf's property consists of two contiguous claims, aggregating 20 units or 500 hectares. These claims were located in November 1976 and are wholly owned by Texasgulf Canada Ltd. Silver Standard's property consists of three old claims (Al 3, 4 and 5) and one fractional claim.

Approximately four days were spent assessing the Silver Standard ground to the west of the Quash Creek Claims. Five days were spent mapping and sampling the main mineralized area of Texasgulf's property. A total of 10 talus fine and 5 rock chip samples were taken for geochemical analysis and 23 grab samples were taken for assay.

Results of the mapping and sampling cannot be looked upon as being encouraging, and no further work should be accorded this claim group.

CONCLUSIONS

1. The geological work completed on the properties indicates that they are underlain by mainly sedimentary rocks in the west and volcanic rocks in the east. These rocks are cut by east-west trending bodies of hornblende diorite.

2. An alteration and sulphide-bearing system is associated with the hornblende diorite. Alteration is generally moderate to strong in intensity, pervasive and propylitic in character. A few scattered areas of weak quartz-chalcopyrite stockworks were noted.

3. Observed copper grades are sub-economic. Even if this were the top of buried porphyry copper system, the current and projected future copper price makes this property unattractive.

4. No further work should be contemplated for this property, and the claims should be allowed to lapse.

INTRODUCTION:

This report summarizes work done by Texasgulf on the Quash Creek Claims (Project 19) and the nearby Al Claims (Silver Standard Mines Ltd.), during 1977.

A two-man crew spent approximately 9 days mapping and sampling on the properties. A total of 10 talus fine and 5 rock chip samples for geochemical analysis and 23 grab samples for assay were taken.

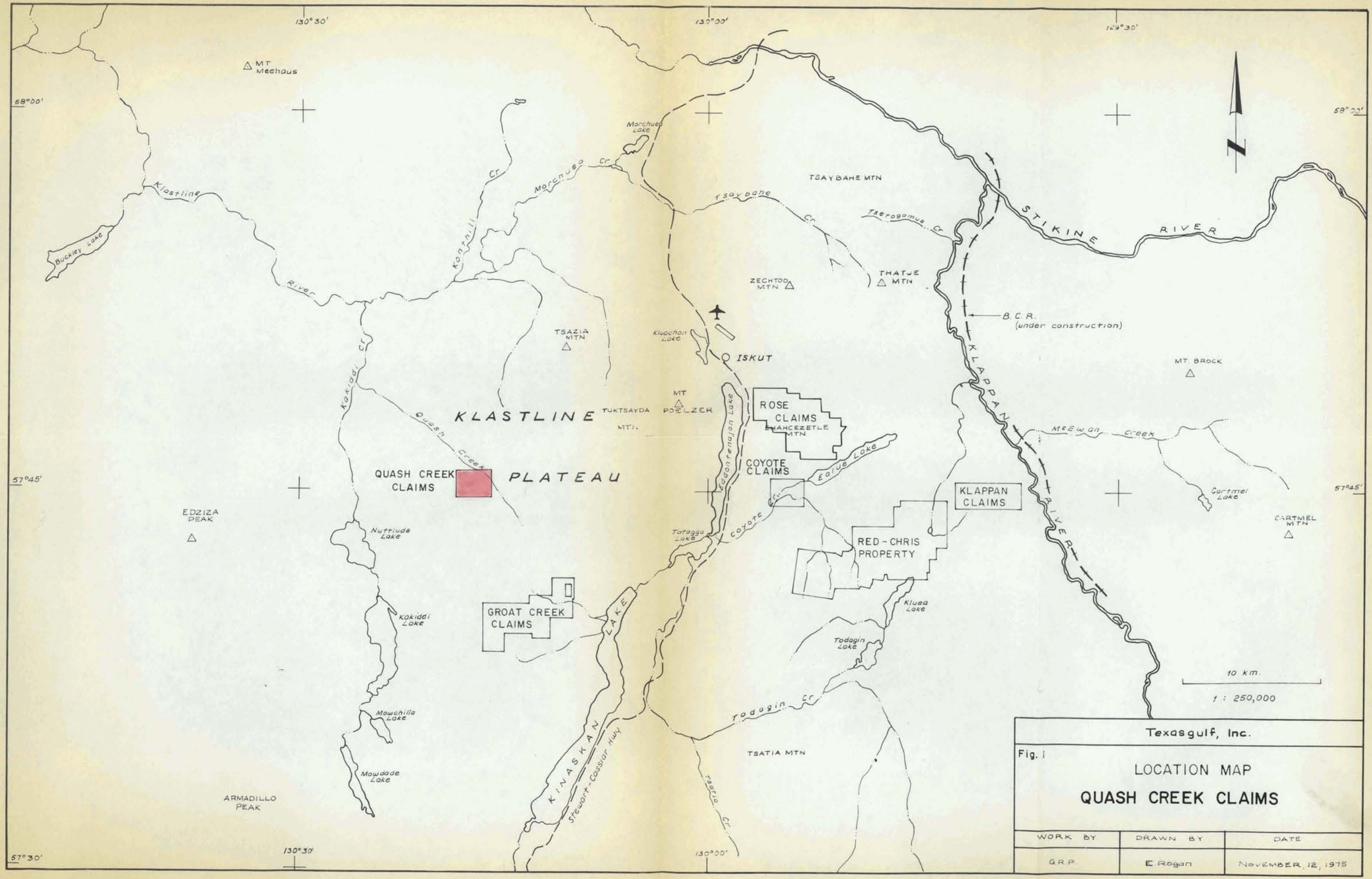
LOCATION, ACCESS AND TERRAIN:

The Quash Creek and Al Claims are located in the Liard Mining Division, and are centered approximately 20 km southwest of the village of Iskut, B.C. (see Figure 1). Access is by helicopter from points along the Stewart-Cassiar Highway which passes some 18 km east of the property.

The properties lie on the southwest side of Quash Creek which flows in a deeply incised northwest trending valley. Topography is steep, with local areas of sheer inaccessible cliffs. Mapping was confined to cliff tops and bottoms and any accessible stream cuts.

HISTORY:

The Quash Creek Claims copper occurrence was located by P.O. Hachey, A.H. Groat and A. John while prospecting for Conwest Exploration Co. Ltd. in 1964. Subsequently, 72 claims were staked to cover the showing and stream silt sampling was carried out along streams draining the large iron stained area. A limited amount of magnetometer work and soil sampling were also carried out at this time. In 1965, 2.2 km of I.P. and 1.9 km of magnetometer work was carried out by Huntec Ltd. From 1965 to 1969 there was little or no work done on the property, and all but 16 of the original 72 claims were allowed to lapse. A program of geologic mapping, resampling of



Texasgulf, Inc.

Fig. 1

LOCATION MAP

QUASH CREEK CLAIMS

WORK BY	DRAWN BY	DATE
G.R.P.	E. Rogan	NOVEMBER, 12, 1975

streams and 6.6 km of magnetometer survey were carried out in 1969 to outline the area of most intense mineralization and alteration, as control for a possible drilling program. The property was optioned, in 1970, to Amoco Canada Petroleum Company Ltd. who remapped the ground, and drilled in excess of 1900 m in 9 diamond drill holes. The results (see Table 1) were discouraging and Amoco dropped its option. Conwest held the ground until 1975 at which time they let the remaining claims lapse. The property was then restaked by United Mines Services Ltd. and held for one year.

In 1970-71 Silver Standard Mines Ltd. acquired several claims, the Al property, covering copper occurrences to the west of the Quash Creek property. This ground had originally been part of the 72 claim Conwest block. A location line survey by McElhanney Associates and a program of geological mapping and chip sampling by R.H. Seraphim Engineering Limited were completed. Seraphim recommended that an I.P. survey be carried out in the basin of Henry Creek. It is not known whether this work was completed, however, Silver Standard still holds a few key claims.

The QC claims were presented to Texasgulf by United Mines Services for consideration during the winter of 1975. Texasgulf personnel briefly visited to the QC and the Al properties during the latter stages of the 1976 field season and were favourably impressed by the style and intensity of the alteration and recommended the ground be acquired (Property Examination Memos are included in Appendix I). A decision was taken to wait for the ground to come open. The QC claims lapsed in November of 1976 and Texasgulf staked the property at that time.

TABLE 1: SUMMARY OF AMOCO 1970 DRILLING RESULTS

Hole	Dip	Depth (m)	Grade (% Cu)
QC-BC-70-2	-55°	0- 15	O.B.
		15- 58	0.07
		58- 64	0.22
		64- 76	0.10
		76- 86	0.21
		82-122	0.13
		122-128	0.33
		128-149	0.13
		149-162	0.25
QC-BC-70-3	-45°	0- 34	O.B.
		34-155	0.07
		155-180	0.11
QC-BC-70-4	-75°	0- 34	O.B.
		34- 85	0.17
		85-198	0.12
		198-226	0.14
		226-351	0.11
QC-BC-70-5	-60°	0- 3	O.B.
		3-113	0.09
		113-226	0.14
		226-305	0.17
QC-BC-70-6	-90°	0- 5	O.B.
		5- 18	0.13
		18-180	0.02
QC-BC-70-7	-90°	0- 6	O.B.
		6- 40	0.10
		40-183	0.04
QC-BC-70-8	-60°	0- 12	O.B.
		12-241	0.05
QC-BC-70-9	-60°	0-250	0.07
		250-305	0.11

NOTE: 1. Data for QC-BC-70-1 not available

2. Detailed drilling data on file in Vancouver Office

GEOLOGY:

Lithologies

The area, located just southwest of the so-called Quash Creek linear, is underlain by siltstones, and lavas, tuffs and volcanic breccias of units 2b and 4 respectively (Peatfield and Donnelly, 1977). These rocks have been intruded by dykes and irregular shaped bodies of porphyritic hornblende diorite or monzonite.

A generalizaed section from oldest to youngest, and from west to east, includes:

1. a sedimentary suite of black to brown siltstones, chert(?) and wacke.
2. tuffaceous siltstone, tuff, volcanic wacke, volcanic conglomerate and minor andesite,
3. grey-brown wacke, greywacke and siltstone,
4. green andesite, tuff, breccia and minor volcanic wacke, and
5. grey andesite and volcaniclastic rocks.

A total of six geologic units or distinct rock-types have been recognized in mapping (see Figure 2). These are described, in a generalized older to younger order, as follows:

Interbedded siltstone (Unit 1) - brown to black very fine-grained siltstone and grey cherty beds. These rocks are bedded on a scale of 1-2 cm to 15-20 cm and crop out on the headwall of Henry Creek cirque. Where intruded by dykes of hornblende diorite they are pyritized and somewhat hornfelsed. Weathering in these places produces a bright red gossan.

Volcanic sedimentary rocks (Unit 2) - green tuffaceous siltstone, tuff and wacke with minor amounts of volcanic conglomerate and

andesite(?). These rocks are bedded on a scale of metres and locally appear massive. They crop out on the north and east wall of Henry Creek cirque and may belong in part to unit 3 and/or 4. Weak quartz-chalcopyrite stockwork occurs near contact of hornblende diorite on the headwall of Henry Creek cirque.

Volcanic wacke (Unit 3) - grey, brown and grey-brown fine- to medium-grained wacke or greywacke with minor amounts of siltstone. These rocks crop out in the central portion of the mapped area. Where they are in close proximity to intrusive bodies they are pyritized and slightly hornfelsed. Rocks weather grey except where they are pyritized in which case they produce a prominant red gossan.

Altered volcanics (Unit 4) - green andesite, tuff, volcanic breccia and minor amounts of volcanic wacke. These rocks are moderately to strongly altered and pyritized. The alteration is pervasive chlorite-epidote-pyrite with minor trace amounts of chalco-pyrite. The rocks weather very bright red with small local areas of weak to strong malachite-azurite staining. All the above rocks are cut by dykes and irregular bodies of hornblende diorite.

Grey volcanics (Unit 5) - grey andesite (-balsalt?), volcanic conglomerate, breccia and minor amounts of maroon andesite. These rocks crop out in the east and southeast of the mapped area and are weakly altered to a chlorite-epicote-carbonate facies. No dykes of the intrusive are seen cutting these rocks and only trace amounts of pyrite were observed within this unit.

Hornblende diorite (Unit A) - porphyritic to equigranular medium-grained hornblende diorite with some phases of hornblende-biotite diorite and hornblende-feldspar diorite. The rock consists of 20-25% subhedral to euhedral 1-4 mm crystals (locally 5-10% biotite books) set in a white to pinkish white anhedral crystalline

matrix of plagioclase (70%) and potash (?) feldspar (10%).

This unit occurs as dykes and irregular shaped bodies and appears to be the immediate source of the sulphide mineralization. The rock is weakly but pervasively altered, with chlorite and pyrite after the mafics and slight sericitization of the feldspars.

Alteration and Mineralization

Alteration near the intrusive bodies is generally moderate to strong, pervasive and propylitic in character. It consists of chlorite-epidote-pyrite (-chalcopyrite) grading outwards to chlorite-carbonate-epidote. The general trend of the alteration is east-west, parallel to the trend of the intrusives. The more strongly altered and pyritized rock is well faulted and broken resulting in large areas of deeply weathered and limonitic rock. This is apparent in the large iron-stained cliffs centered on the Quash Creek Claims. Hornfels zones 1-2 m wide commonly occur around the dykes and intrusive bodies.

Within the intrusive rocks the propylitic alteration is weak but pervasive. Total sulphide content in these rocks is generally low (1-3%) and mainly pyrite. Some local weak quartz-chalcopyrite stockworks were observed, however, the bulk of the mineralization is disseminations of pyrite $\pm$ chalcopyrite. Local areas of strong malachite-azurite (?) staining are apparent and are due to the weathering of the copper sulphides. On the surface these showings are impressive. Grab sampling of some of these areas proved disappointing with results ranging from 0 to 0.19% sulphide copper.

Grading (?) outwards from the mineralized east-west trend the alteration becomes weaker and is represented by a chlorite-carbonate $\pm$ epidote mineral assemblage. The rocks all contain pervasive chlorite and are veined by carbonate and epidote. Pyrite occurs only in trace amounts.

GEOCHEMISTRY:

Geochemical sampling in the area was limited and confined mainly to the Quash Creek Claims. A total of 10 talus fines and 5 rock ship samples were taken and analyzed for copper, molybdenum and zinc with results given in parts per million total metal. Twenty-three grab samples from various locations were also taken and these were assayed for total and non-sulphide copper. The location and results for all sampling is shown on the geological map (Figure 2) and the data are recorded in Appendix II.

The observed copper mineralization in the altered volcanic and intrusive rocks probably accounts for the high values in the talus fines. This conclusion is substantiated by the geochemical values for the rock chips and the assay results for the grab samples, which give copper values of 530 to 2200 ppm and 0 to 0.19% sulphide copper respectively.

The relatively high moldybdenum values, 22 to 130 ppm, in the talus fines are broadly similar to values obtained in similar work on other properties in this region, on which little or no molybdenite has been found. Possible explanations for this apparent concentration include adsortpion of molybdenum on hydrous ferric oxide or, less likely, precipitation as ferrimolybdite.

D.A. Donnelly

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APPENDIX I

1976 PROPERTY EXAMINATION MEMOS

Texasgulf memo

Date February 24, 1977.

To G.R. Peatfield Location
C.H.B. Leitch

From T.M. Elliott Location

Subject PROPERTY EXAMINATION - AL GROUP

SUMMARY:

Sub-economic copper mineralization appears to be confined to an east-west trending quartz vein stockwork zone dipping steeply north. This mineralized zone (200-300 feet wide, 0.1-0.2% Cu) is centered on and contained within an east-west trending set of hornblende diorite dykes cutting slightly hornfelsed siltstones trending east south-east. Alteration in the intrusives is weak in character (propylitic), but thorough and pervasive. The system is low-total sulfide (1-2%) and significant leaching and enrichment are absent. The quartz veining appears to improve towards the centre and downwards in the system. No surface orebody can be envisaged, but there is a possibility of ore-grade mineralization at depth below the propylitic mineralization observed.

RECOMMENDATIONS:

If the property becomes open, it should be staked. The possibility of a favourable option deal with Silver Standard should be considered. If land tenure is obtained, the central showings should be re-mapped carefully, in detail, to determine the attitude of the intrusive bodies and the stockworking zone. Overburden sampling of the flat area between Henry and Potter cirques, should be carried out, and two short "packsack drill" holes should be drilled, one at the top of the mineralized zone, and one at the bottom of the cliff. This drilling would (a) establish the grade of mineralization in fresh rock and, (b) determine if vertical zoning of grade existed. Encouragement in all of these phases would require the testing of ore-grade mineralization at depth by at least one or possibly two long BQ holes (1000-1500') drilled preferably from the Potter Creek cirque floor at -45°.

DURATION:

Three days by two geologists examining outcrops (T. Elliott & C. Leitch).

LOCATION:

The property lies on the divide between the headwaters of Henry Creek and Potter Creek, west of Quash Creek and 4 miles east north-east of Nuttlude Lake (see Souther's "Telegraph Creek" map-sheet, 104G). The co-ordinates are 57°45'N, 130°21'W.

ACCESS:

The property is reached by helicopter from Eddontenajon, 15 miles to the east north-east. Telegraph Creek lies 32 miles to the west north-west. The all-weather Stewart-Cassiar highway passes within 12 miles of the prospect. Elevation on the property ranges from 5300' to 6200'. Locally, cliffs and glaciers make access difficult.

ADJACENT PROPERTIES:

Another porphyry copper prospect, the Q.C. (for Quash Creek) lies 2 miles east of the Al Claims. It was trenched and drilled by Conwest and Amoco, and is presently held by Messrs. Dickenson and McLaren. A silver prospect (tetrahedrite in viens), S.F. Group, lies 1.5 miles due south, and is held by Dickenson and McLaren.

CLAIM STATUS:

Silver Standard Ltd. holds three claims (Al 3, 4 and 5 and a fraction) in good standing which cover the exposed copper mineralization. These were staked by A.R.C. Potter in 1970.

PREVIOUS WORK:

Reconnaissance geology of the bulk of the Al group at 1"=750' and detailed geology of the central copper mineralization were mapped in 1971 by R. Buchanan of Silver Standard. About a hundred chip samples, from 5-10 feet long, were taken on the copper mineralization, assaying about 0.15% Cu. A report written by R.H. Seraphim (Sept. 14, 1971, Dept. of Mines & Petroleum Resources Assessment Report #3239), describes the geology and mineralization of the area.

GEOLOGY:

The regional geology and the geology of the claim group is adequately described in Seraphim's report of September, 1971. The present examination confirms that several large (50-300') dykes of hornblende diorite trend easterly through the property, cutting sediments and some volcanics of the Triassic Takla group which trend about 110° and dip steeply northwards (approx. 60°).

The dykes, where exposed on cliff faces at the head of the cirque on Potter Creek, may also dip north at about 50°-80°. Significant mineralization is essentially confined to a zone of quartz stockworking trending about 100°-110°. Identical intrusive rocks to both north and south are pyritic only and almost devoid of quartz veins; further north on the old "Neet" group claims, a hornblende diorite is relatively unfractured and lacks even pyrite.

The intruded rocks are mainly banded, somewhat siliceous siltstones, strongly hornfelsed near the intrusives. There also appears to be some pre-hornblende diorite intrusive in the form of a fine-grained hornblende plagioclase monzonite porphyry which has an aphanitic pink groundmass.

Copper mineralization within the siltstones is restricted to scattered fissures, a few feet across and spaced tens of feet apart, with chalcopyrite on fractures and rare quartz-pyrite-chalcopyrite veins. The sediments do not appear to be favourable hosts for the mineralization.

Quartz veining seems to be distinctly related to the central dykes of hornblende diorite. In one place, a large vein was seen running up the contact of a dyke with sediments, and the veining died out dramatically in the sediments compared to the dyke. Sections of 50' of weak quartz stockwork (2 veins per foot) were observed, with local moderate quartz stockwork (4 veins per foot). The quartz veining appears to be oriented mainly east-west, dipping steeply north.

Chalcopyrite also occurs in fractures crosscutting the quartz veins (again, the fractures are mainly vertical) and as minor disseminations. Rare molybdenite was observed in the veins; one "ribbon" vein of quartz-molybdenite-chalcopyrite was also seen. The rock chip samples taken by Silver Standard were assayed only for copper and silver, not for gold or molybdenum.

The sulfides are largely oxidized at surface and along fractures leaving limonite (mainly goethite), malachite, and neotocite (an amorphous black collection of iron, manganese, and copper oxides). Leaching is expected to be minor in this low total sulfide, malachite-neotocite environment and as Seraphim notes, substantial upgrading is not to be expected in fresh rock. However, it should be pointed out that although fresh sulfides may be found in veins a few cm. into the rock, many of the chip samples observed did not penetrate the 1 cm. leached "skin" of the rock. Some samples that ran 0.2% Cu might have run 0.3% Cu a few cm. into the rock.

The sulphide content of the system (sediments & intrusives) is weak overall, in the 1-2% range, with locally 5% sulfide. The pyrite:

chalcopyrite ratio is generally high, but decreases from about 15:1 at the edges of the system to perhaps 5:1 in the centre. Quartz veining seems to be better developed in the lower, more central exposures of the hornblende diorite (i.e., at the base of the cliff on the Potter Creek cirque or on the top of the ridge).

The alteration of the intrusive rocks is low-grade in character, mainly propylitic (chlorite after mafics, minor disseminated sulfide, light sericitization of plagioclase). However, the alteration is thorough and pervasive. On the western cliff face (Potter Creek cirque) and at the base of this cliff, local zones of quartz-sericite alteration occur, and this strengthens the view that the observed exposures may be of the propylitic halo of a quartz stock-work orebody at depth.

The possibility of finding more mineralization beneath the floor of Henry Cirque by I.P. is regarded as weak. This would be a low priority target.

C.H.B. Leitch

T.M. Elliott

Texasgulf memo

Date September 27, 1976.

To G.R. Peatfield Location

From C.H.B. Leitch Location
T.M. Elliott

Subject QC PROSPECT DRILL CORE EXAMINATION

DURATION:

Both of the writers spent one day, (Sept. 5th) quickly scanning core (holes 2-5) drilled by Amoco in 1970 and T.M. Elliott spent an additional part of a day (Sept 15th) examining core from holes 7-9.

RECOMMENDATIONS:

All of the rock drilled was low grade (up to an estimated 0.4% Cu but mainly 0.1-0.2% Cu in better mineralized zones) chalcopyrite mineralization in an extensive gossan of propylitized rock. Since the mineralized system is large the prospect offers the attractive possibility that a large underground deposit could underlie the propylitic capping. Such a discovery would entail some long hole drilling in the area adjacent to holes 70-4 and 70-5. In the latter hole higher grade (estimated 0.4% Cu) mineralization associated with phyllic alteration is found cutting the lower grade mineralization and alteration deep in the hole, and in the former hole an estimated 0.3%? Cu is found from 800-900'. A further possibility is that if holes 70-4 and 5 are on the fringe of the area drilled that a target may be indicated for shallow or deep drilling adjacent to these holes. In any case, all holes logged should be located with respect to any geology reported.

This prospect has the same sort of potential as the Al Group deposit held by Silver Standard Mines Ltd. to the west, but is more attractive than the latter because of the size of the mineralized system. If possible both properties should be acquired and examined concurrently as they may both be part of one large mineralized system.

SUMMARY:

The QC prospect consists of a large system of mineralized diorite porphyry and aphanitic acid volcanics. The writers have not mapped the property but it is readily apparent from a quick drill

Cont'd...

core examination that small bodies of diorite porphyry (possibly dykes or sills, or both) are found mixed with aphanitic volcanics. Both major rock types are well mineralized and low grade mineralization can be extensive.

Alteration and sulphide mineralization consists of chlorite-epidote-carbonate-pyrite and chalcopyrite. Locally quartz veining with associated chalcopyrite is important, but most of the chalcopyrite is found with pyrite on fractures. In hole 5, the best mineralization is an assemblage of quartz-sericite-carbonate-pyrite-hematite-chalcopyrite. Sparse MoS_2 is found in drill holes 5 and 9.

ROUGH DRILL LOGS:

DDH 70-2 (535')

Start to 235' = f. gr. (1 1/2 m.m.) hbde-plag. diorite porphyry cut by pyritic fract. and epid. fract.; rare gypsum fract. Mineralized weakly from 200'. 5% dissem. pyrite. Alteration varies from propylitic to phyllic.
235-265' = xeno. of aphanitic volcs. or f. gr. seds (gray)
265-468' = m. gr. hbde-plag. diorite porphyry; mineralized with qtz. and carb. veins. Locally heavy sulphides incl. cpy. Propylitic to phyllic altn. - the latter expressed as bleaching where mafics are destroyed.
468-535' - seds. or aph. volcs; no mineralization.

DDH 70-3 (595')

102-320' = f. gr. prop-phyll. altd. hbde-plag. diorite
Some qtz. veining. Local very weak stockwork (Qtz)
Pyrite = 2-3% dissem. and fract filling. Epid. on fract.
320-340' = aph. volcs. or silic. seds.
340-354' = diorite porphyry as before.
354-385'= light gray and dark gray volcs. 2-3% dissem. py. Local 3-4 cm. long epid. clots.
385-approx. 450'? = altered f. gr. diorite porphyry
ca. 450±595' = altered volcs. Abund. py on fractr. but no copper.

DDH 70-4 (1143')

106 - ca. 200' = unmineralized seds and volcs.
ca. 200-1143' = mineralized (est. 0.1-0.2%? Cu) seds., volcs. and minor diorite porphyry dykes. Mineralization includes disseminations, fracture-controlled py-cpy and cpy in veins. A common mineral assemblage in this hole is epidote-pyrite-orange feldspar-quartz-chalcopyrite. Probably propylitic zone altn. or propylitic-phyllic boundary. From 800-900' mineralization is the strongest. Possibly 0.3%? Cu characterized by a quartz-carbonate-pyrite-hematite-chalcopyrite assemblage. From 900-1000' mineralization is weaker,

but the above assemblage is still present. By the end of the hole there is still dissem. and fract. py and some fract. cpy. Still some qtz. and carb. veins.

DDH 70-5 (1000')

12-58' = mixed hornfels and diorite prophyry. Minor cpy
58-133'= highly fract. mixed rocks. ?fault? No cpy
133-200'=very low grade mixed rocks (est. < 0.1% ?Cu)
200-400'= mixed rocks including abundant diorite porphyry with weak cpy. Est. 0.1-0.2%? Cu.
400-500'= weaker mineralization
500-650'= strong chlorite alteration. Chlorite has been evident since 200'.
650-725'= good cpy as dissem. fract-fillings, and in qtz. veins (est. 0.4%?Cu). Alteration is qtz-sericite-pyrite. Local MoS_2 in qtz. veins with py-cpy. Appears as if phyllic zone is "poking through" strong propylitic zone.
725-1000'=strong chloritic alteration with an estimated 0.2-0.3%? Cu on fract. and in veins. This hole contains more intrusive (diorite porphyry) than last hole. Could possibly be closer to a stronger mineralized system.

DDH 70-7 (600')

22-75'= aphanitic green volcs. cut by fract. bearing pyrite and cpy (max. est. 0.1%? Cu)
75-85'?= dyke of f. gr. diorite porphyry containing 5% dissem. py.
85-245'=green aph. volcs. Occasional fract. with py-cpy. Some qtz. and carb. veins (very weak stwk.) Some f. gr. diorite porphyry dykes.
245-397'=f. gr. diorite porphyry containing 1-2% dissem. py. Occasional qtz., carb. and py veins.
397-600'=gray and green volcs. cut by dykes of f. gr. diorite porphyry. Copper as cpy only very weak along occasional fract. Not a good hole mineralization or alteration wise. Pyrite content of hole only 1-2%.

DDH 70-8 (788')

Start-196'=weakly altered (propylitic) and very weakly mineralized m. gr. biotite-hbde diorite porphyry containing minor dissem. pyrite. Occasional fract. - controlled and dissem. cpy. Biotie approx 2%, hbde=10%.

196-225'=gray and greenish gray aph. volcs. (acid to intermediate in composition). Local fract. containing weak py-cpy.
225-346'=f.gr. diorite containing 2% dissem. py. Fract.-controlled py and cpy (which is locally "splashy")begins at 300'. Occasional qtz. veins bear cpy.
346-575'=mixed gray to greenish gray volcs. and f. gr. diorite containing 1-2% dissem. py. Some py. on fract. Occas. cpy. Vein of py-sphalerite at 513'.
575-778'=f. gr. diorite porphyry containing 1% dissem. py. Some py. on fract. Occas. qtz-veins. Only minor cpy. Not an impressive hole for alteration and mineralization.

DDH 70-9 (1001')
9-95'=propylitically altd. m. gr.hbde diorite porphyry-no biotite. Rock contains 3% dissem py. Minor cpy. Epid. on occas. fract.
95-105'=contact zone of mixed intr. and volcs.
105-177'= f. gr. diorite cut by abund. pyritic fract.
177-194'=gray to greenish gray volcs.
194-322'= f. gr. diorite cut by abund. (mod. py. stwk) fractures. Epidote also commonly associated with py. fract. Only very weak fract.-controlled and dissem. cpy (est. $<0.1\%$?Cu). MoS_2 on a fract. at 270'
322-361'=aph. gray to greenish-gray volcs. Py-epid. on fract.
361-465'= f. gr. diorite. Abundant py. on fract. Py as dissem= 3%. Occasional epid. fract. to 390', then abund. epid.-py on fract.
465-516'=greenish gray aph. volcs. Abund. py on fract.
516-1001'=60-70% of rock is propylitically alt'd f. gr. diorite with py. on fract. Rock contains only 1% dissem. py. The other 30-40% of the rock is aph. greenish gray volcs. having abund. py and epid. and lesser amounts of carb. on fract. From 940' to the end of the hole cpy increases on fract. and as local dissem. to a possible grade of 0.1-0.2% Cu.

C.H.B. Leitch

T.M. Elliott

APPENDIX II

GEOCHEMICAL AND ASSAY DATA

TEXAS GULF SULPHUR COMPANY — EXPLORATION DIVISION

GEOCHEMICAL DATA SHEET — ROCK CHIP SAMPLING

SAMPLER DONNELLY/DIX

DATE July 9, 1977

PROJECT QUASH CREEK (Project 19)

NTS _____

LINE _____

AIR PHOTO No. _____

SAMPLE No.	ROCK TYPE	LOCATION	DESCRIPTION				ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS							
			AGE	ALTERATION	FRESHNESS	VEINING MET. MIN.		Cu	Mo	Zn	Pb				
K8127	Hb-Bi Diok			Qz-Py-Cpy	FRESH	Py Cpy Qz	sample taken over 15 m	2200	8	60					
August 6, 1977															
K8263	Andesite			Prop (?)		Py Calc ep		530	13	168					
K8264	Andesite			Prop			disseminated py - limonite stain	680	8	48					
K8265	Hb Diorite			Prop			disseminated py	1080	6	58					
K8266	tuffac-seds			Prop		cb	—"—	2200	7	40					

TEXAS GULF SULPHUR COMPANY — EXPLORATION DIVISION

GEOCHEMICAL DATA SHEET — SOIL SAMPLING

SAMPLER Donnelly / Dix

DATE August 5, 1977

PROJECT Quash Creek (Project 19)

NTS

LINE

AIR PHOTO No.

SAMPLE No.	LOCATION elev. m	DEPTH	HORIZ.	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS					
				COLOUR	PART. SIZE	% ORG.	Ph				Cu	Mo	Zn	Pb		
KB253	1475	sfc.	C	Brown	fine-cse	—		steep	—	Talus fines	180	50	360			
	1450	"	C	"	"	—		"	—	— " —	4000	100	280			
	1425	"	C	"	"	—		"	—	— " —	940	30	200			
	1400	"	C	"	"	—		"	—	— " —	1140	55	380			
	1375	"	C	"	fine-med	—		"	—	— " —	1280	57	100			
	1350	"	C	"	"	—		"	—	Probable till contamination	660	22	128			
	1325	"	C	"	fine-cse	—		"	—	Talus fines	1420	56	120			
	1300	"	C	"	"	—		"	—	— " —	1670	130	240			
	1275	"	C	"	"	—		"	—	— " —	1640	58	152			
	1260	"	C	"	"	—		"	—	— " —	1760	37	310			

ASSAYS OF GRAB SAMPLES

SAMPLE NO.	TOTAL CU	NON-SULPHIDE CU	SULPHIDE CU	DESCRIPTION
10651	0.64	0.56	0.08	Cu stained intrusive
10652	0.46	0.27	0.19	Cu stained tuffaceous sedimentary rocks
10653	0.21	0.08	0.13	Weak Cu stain tuffaceous sedimentary rocks
10654	0.08	-.07	0.01	Weakly limonitic, weakly altered Hb-diorite
10655	0.33	0.33	0.00	Cu Stained Hb-diorite
10656	0.04	0.02	0.02	Limonitic altered tuffaceous sedimentary rocks
10657	0.01	0.01	0.00	Weak limonite stained Hb-diorite
10658	0.14	0.10	0.04	Limonite stained sedimentary rocks
10659	0.22	0.14	0.08	Weakly altered Hb-Fp diorite
10660	0.36	0.17	0.19	Weakly altered Hb-Bi diorite, rare qtz veins
10661	0.04	0.02	0.02	Weakly altered Hb-Bi diorite
10662	0.03	0.02	0.01	Weakly altered Hb-Fp diorite
10663	0.17	0.02	0.10	Siliceous altered Hb diorite
10664	0.03	0.02	0.01	Limonitic stained Hb porphyry
10665	0.11	0.07	0.04	Green fine-grained siliceous sediments
10666	0.09	0.05	0.04	Green fine-grained siliceous volcaniclastic
10667	0.06	0.02	0.04	Green fine-grained pyritic tuff(?)
10668	0.04	0.01	0.03	Limonitic fine-grained siliceous tuff
10669	0.03	0.01	0.02	Limonitic fine-grained siliceous tuff
10670	0.09	0.02	0.07	Limonitic Hb-Fp diorite
10671	0.09	0.02	0.07	Limonitic Hb-Fp diorite
10672	0.02	0.01	0.01	Fine-grained Hb-Fp porphyry
10673	0.03	0.01	0.02	Fine-grained siliceous andesite(?)

NOTE: Sulphide Cu = Total Cu - Non-sulphide Cu

APPENDIX III

TENURE

TENURE

The Quash Creek claims consist of two contiguous claims aggregating 20 units. The claims wholly owned by Texasgulf Canada Ltd., were located between November 5 to 7, 1976. Details are given below.

Claim Name	Record No.	Units	Work Expiry
King Henry II	250	12	November 30, 1977
Eleanor of Aquitaine	251	8	November 30, 1977