ASSESSMENT REPORT ON

DIAMOND DRILLING AND GEOLOGICAL MAPPING

on the

SILVER FOX AND MOLLY BLUE MINERAL CLAIMS

by

D.A. Bending

NTS 93M/14W

127°25'W 55°44'N

situated on Goathead Creek
in the Omineca Mining Division

owned by

TEXASGULF CANADA LTD.
(now KIDD CREEK MINES LTD)
work by

TEXASGULF INC.
&
KIDD CREEK MINES LTD.

February 1982 Vancouver, B.C.

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INTRODUCTION

Location, Access, Terrain and Climate

The Kisgegas molybdenite prospect is located in the Atna Range near the headwaters of Goathead Creek, 58 kilometres north of Hazelton, British Columbia (Figures 1 and 2).

Direct access to the property is by helicopter. Chartered helicopters are available in Smithers, 125 km to the south. Equipment and supplies can be flown from logged areas near the confluence of the Skeena and Babine Rivers, 15 km west, or from farms near Kispiox, 30 km southwest.

Regional topography is characterized by isolated peaks separated by broad wooded valleys. Peaks above 2000 metres are surrounded by snow and ice fields. Relief on the property is moderate to extreme. The showings occur in a north facing cirque between elevations of 1500 and 1600 metres. Local tree line is about 1300 metres.

The region has a cool temperate climate with moderate rainfall. Much of the property is covered by a small glacier. Snow on and peripheral to this glacier persists until late summer. Accumulation of snow does not begin until October, although sporadic snowfall can occur at higher elevations during most of the summer.

History

The history of the property has been reviewed by DeLancey (1979). The property, originally known as the Ole Group, was held by Canex from 1961 to 1963. Initial exploration was focused on low grade Mo-Cu mineralization in rusty hornfels adjacent to a granodiorite stock.

AMAX personnel observed higher grade Mo mineralization in a quartz vein stockwork in the stock and scheelite in adjacent skarns.

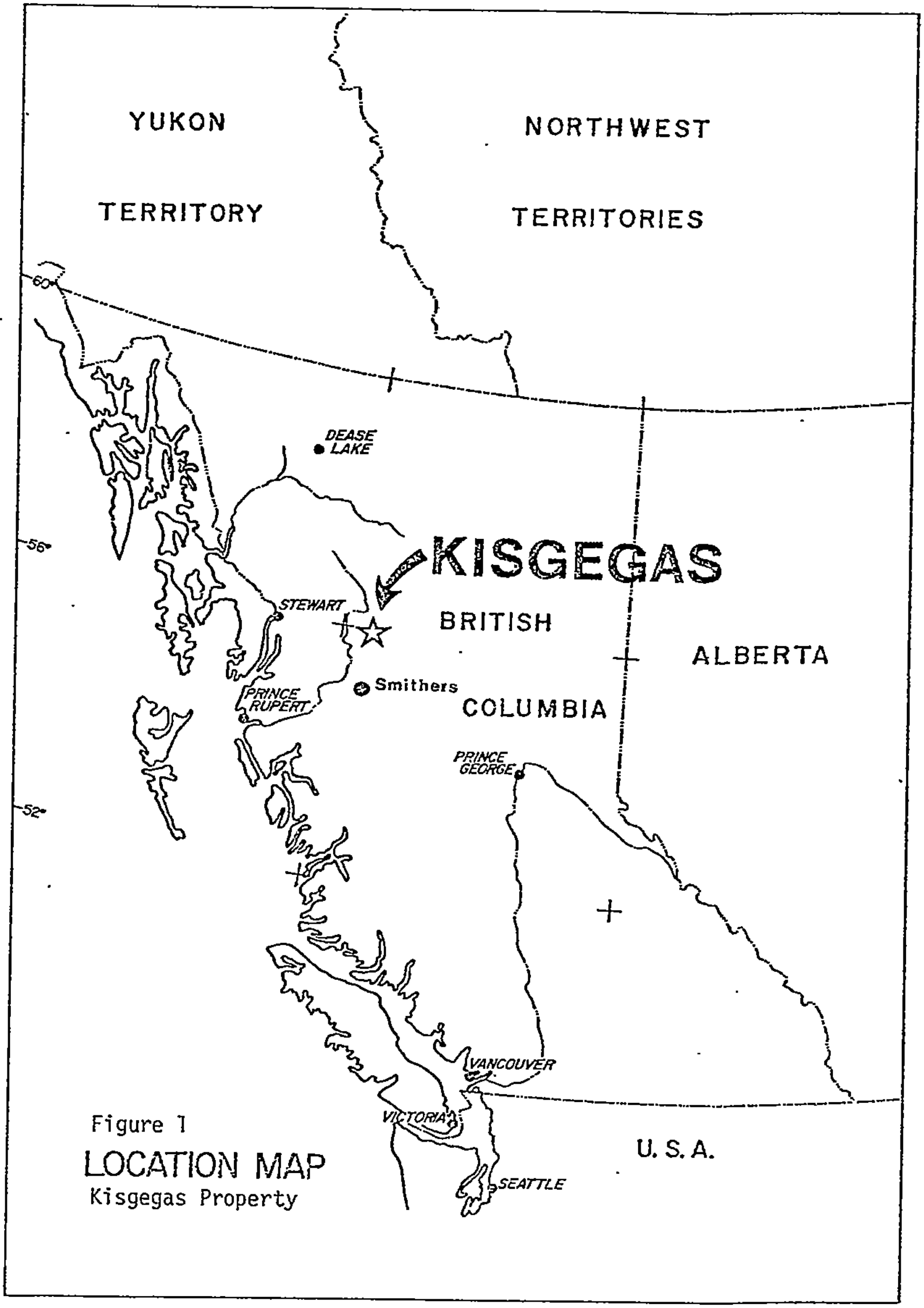


Figure 1
LOCATION MAP
Kisgegas Property

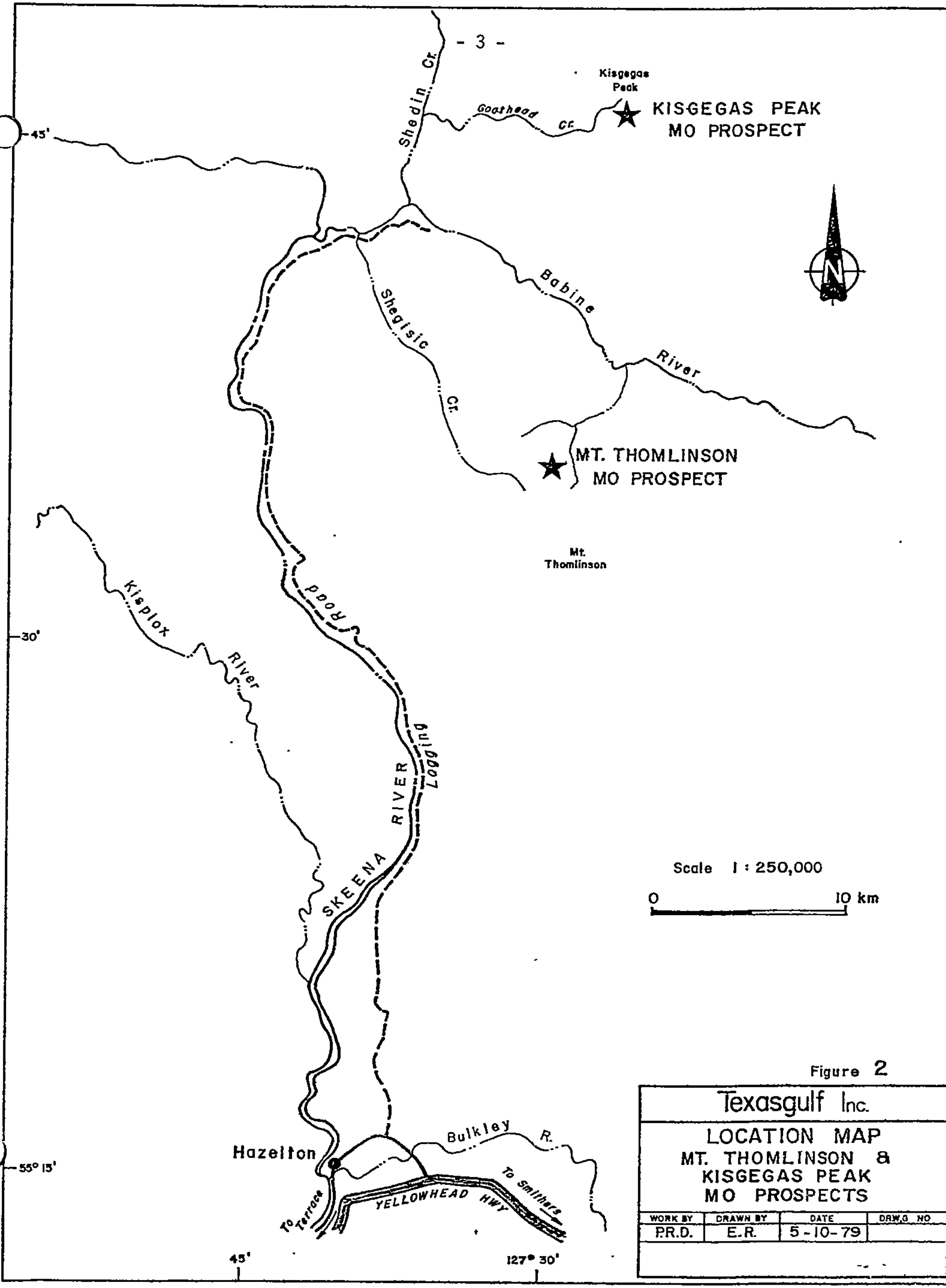


Figure 2

Texasgulf Inc.			
LOCATION MAP MT. THOMLINSON & KISGEGAS PEAK MO PROSPECTS			
WORK BY	DRAWN BY	DATE	DRW.G NO
P.R.D.	E.R.	5-10-79	

The Fog and Frost Claims were staked to cover these occurrences. During 1964, 1965 and 1966, Amax carried out programmes of geological mapping, trenching, rock chip sampling and one diamond drillhole 453 metres deep (location shown in figure 4). Although the upper part of the hole was reported to contain molybdenite, the overall results were apparently not encouraging enough to warrant further work, and the property was allowed to lapse.

In 1977 John Bot, an independent prospector from Smithers, staked the Molly Blue Claim (Figure 3). He optioned the property to Texasgulf on May 16, 1979. P.R. DeLancey (see DeLancey, 1979) spent four days on the property in August, 1979. He produced a sketch map of the geology on a scale of 1:5000, reported the style of the molybdenite and scheelite occurrences, and noted the presence of high grade MoS_2 in angular float near the edge of the glacier (location shown in Figure 4). He proposed a drill hole to test the apparent source of the mineralized float, and staked the Silver Fox Claim (4 units) to cover parts of the stockwork outside the Molly Blue Claim.

The general retreat of snow and ice between 1966 and 1979 provided better exposure than that previously available. Amax's sample location markings on rock faces three to five metres above the ice indicate a significant retreat of the glacier during these fourteen years.

On the afternoons of September 13 and 14, 1980, the author and assistant examined the showings. A summary of observations made during the brief examination was produced for assessment credit (Bending, 1981).

Property Status

The principal mineral occurrences are covered by the Molly Blue and Silver Fox claims (Figure 3). The Molly Blue Claim

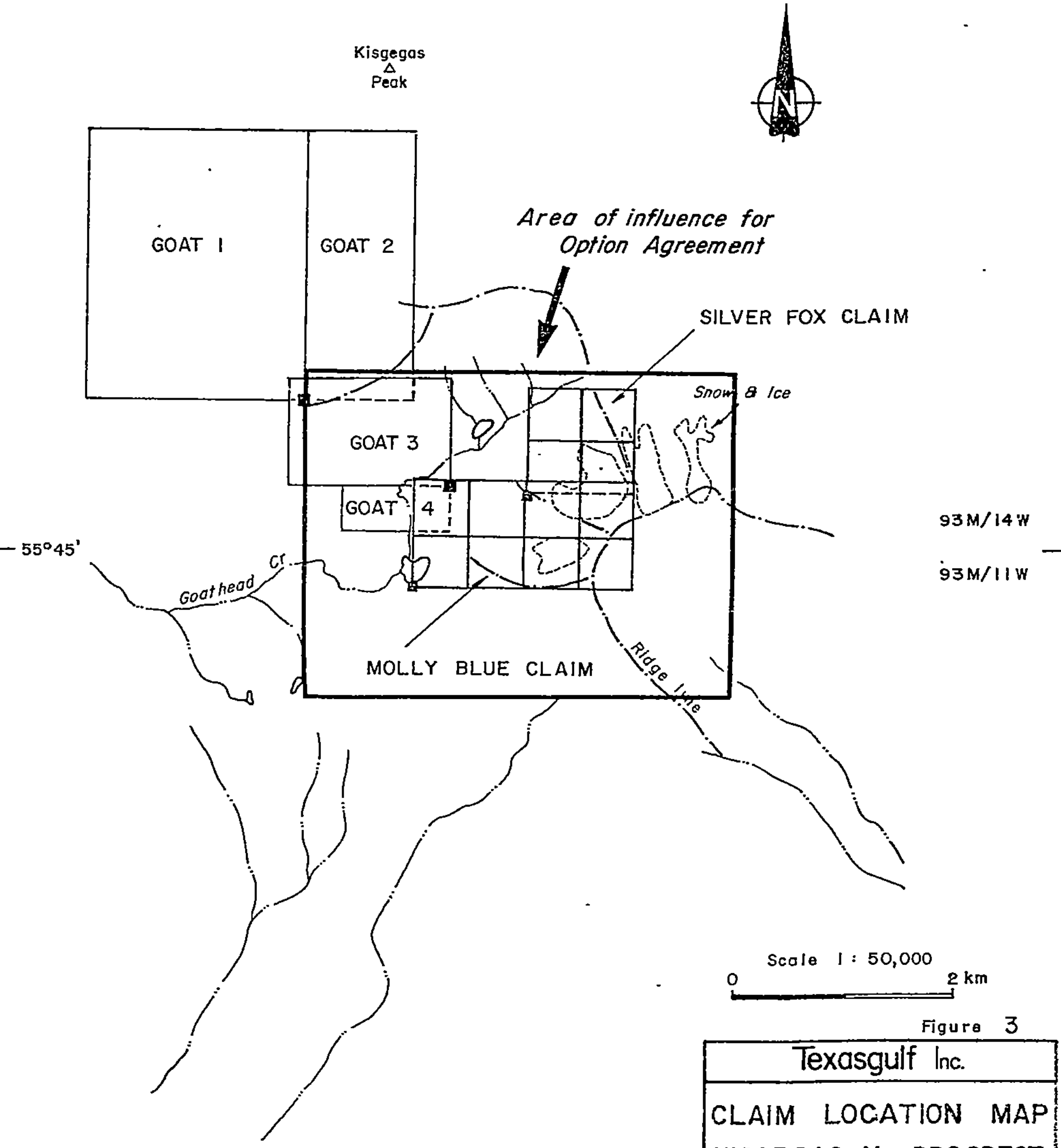


Figure 3

Texasgulf Inc.			
CLAIM LOCATION MAP			
KISGEGAS Mo PROSPECT			
WORK BY	DRAWN BY	DATE	DRW'G NO
P.R.D.	E.R.	8-10-79	

was transferred to Texasgulf Canada Ltd. according to the terms of the option agreement signed on May 16, 1979 (Bill of Sale, September 27, 1979). The Silver Fox Claim is covered by terms of the option concerning peripheral ground. The Goat 1, 2, 3 and 4 Claims were staked in September 1981 to cover scheelite occurrences north and west of the Molly Blue Claim. The Goat 4 Claim and part of the Goat 1 Claim lie within the area of influence of the option agreement for the Molly Blue Claim, as shown in Figure 3. Texasgulf Canada Ltd. changed its name to Kidd Creek Mines Ltd. effective December 30, 1981.

TABLE 1

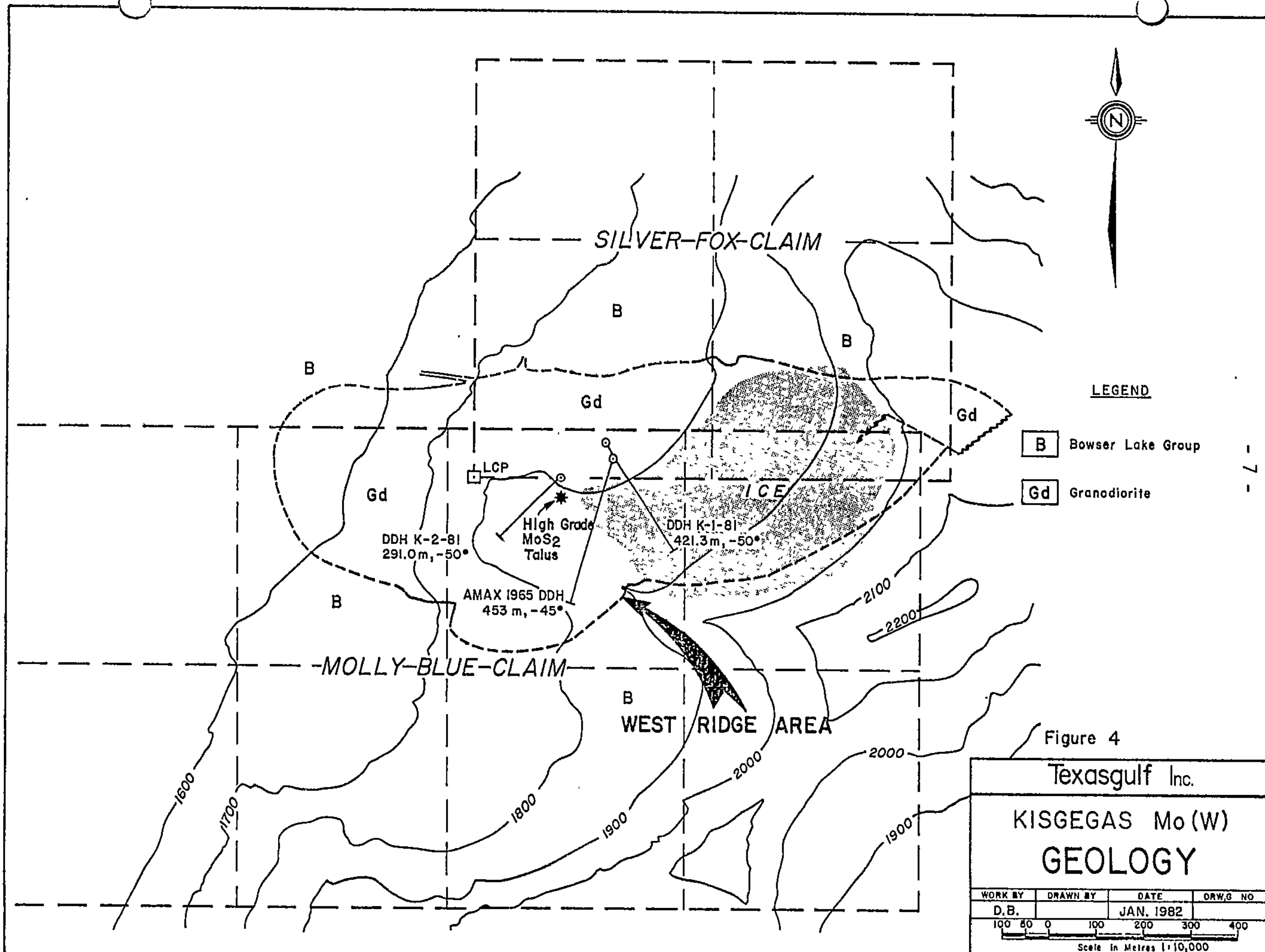
Claim Administration Data - Kisgegas Property

Claim	Units	Date Staked	Record Number
Molly Blue	8	June 16, 1977	624
Silver Fox	4	August 20, 1977	2118
Goat 1	20	September 4, 1981	4308
Goat 2	10	September 4, 1981	4309
Goat 3	6	September 4, 1981	4310
Goat 4	4	September 20, 1981	4311

Summary of Work Completed, 1981

The work done in 1981 consisted of construction of a base camp and drillsites, prospecting, geologic mapping on a scale of 1:2500 and 719.3 metres of BQ diamond drilling in two holes.

The camp was prepared in July by a crew contracted from BEMA Industries. Texasgulf personnel began geological work and drillsite preparation August 22. Longyear personnel were on the property August 29, and drilling commenced August 31. Drilling progressed steadily, without significant delays, and continued until September 22. The drill was dismantled and demobilized September 23. The camp was winterized and all Texasgulf personnel demobilized on September 25.


SILVER-FOX-CLAIM
MOLLY-BLUE-CLAIM
WEST RIDGE AREA
ICE
B
Gd
LCP
High Grade MoS2 Talus
DDH K-2-81 291.0m, -50°
DDH K-1-81 421.3m, -50°
AMAX 1965 DDH 453 m, -45°
1600
1700
1800
1900
2000
2100
2200
N
LEGEND
B Bowser Lake Group
Gd Granodiorite
Figure 4
Texasgulf Inc.
KISGEGAS Mo (W)
GEOLOGY
WORK BY D.B.
DRAWN BY
DATE JAN. 1982
DRW'G NO
100 50 0 100 200 300 400
Scale in Metres 1:10,000

Mineralized core was split, and all of the core was logged and photographed. Three metre sample intervals were assayed for MoS_2. The samples were grouped into fifteen metre composites and analysed for Cu, F, and Mn. The core is stored in camp.

Work Distribution

Most work was carried out on the Molly Blue and Silver Fox Claims. Two days of reconnaissance prospecting were done on the Goat Claims.

DRILLING

The purpose of the 1981 drilling programme was to test, at depth, the extension of the exposed mineralization and alteration. Two BQ diamond drill holes, totalling 712.3 metres, were completed. The locations of these holes are shown in Figure 4, assays and analyses are listed in Appendix 1, summary geological logs are given in Appendix 2, and all 3 metre intervals with assays greater than 0.1% MoS_2 are listed in Table 2.

TABLE 2

Assay Intervals with Greater than 0.1% MoS_2

Hole	Interval	Length(m)	%MoS_2
K-1-81	51.0- 54.0	3.0	0.143
K-1-81	267.0-270.0	3.0	0.125
K-1-81	342.0-373.0	33.0	0.193
including	342.0-345.0	3.0	0.152
	345.0-348.0	3.0	0.400
	351.0-354.0	3.0	0.179
	354.0-357.0	3.0	0.295
	357.0-360.0	3.0	0.145
	360.0-363.0	3.0	0.285
	369.0-372.0	3.0	0.409
K-2-81	108.0-111.0	3.0	0.107

K-1-81

DDH K-1-81 was drilled to test the mineralized stockwork, beneath the glacier, for a possible source of the angular high grade molybdenite bearing float found near the west edge of the ice. Figure 4 shows the location of the holes and the float occurrences, and Figure 6 shows the rock types, veining,and alteration encountered. Hole K-1-81 was drilled at Az. 156°/-50°, to a depth of 421.3 metres. It penetrated variably altered and mineralized granodiorite, and was stopped in fresh granodiorite with sparse quartz veins. Most of the hole contained scattered molybdenite along quartz veins, and as fine disseminations in narrow zones of potassic alteration. The best intersection averaged 0.193% MoS_2 across 33 metres at a depth of 342 to 375 metres. Within this intersection was a three metre section which assayed 0.409% MoS_2.

K-2-81

DDH K-2-81 (291.0 metres Az.225°/-51°) was drilled (a) to test the interpretation that the angular high grade float was locally derived talus and not transported by the glacier; and (b) to test the stockwork exposed along the West Ridge. The hole cut granodiorite, with local compositional variations from quartz monzonite to quartz diorite, and locally abundant felsic dykes. Figure 7 is a geological section showing the veining,alteration, and rock types encountered. The first 160 metres intersected a well developed quartz vein stockwork, with moderate to intense potassic alteration and widespread traces of MoS_2. The best assay interval was 108.0 - 111.0 metres, with 0.107% MoS_2 across three metres. The quartz veining and alteration became progressively less abundant below 200 metres, and the hole was stopped in fresh, unmineralized granodiorite at 291.0 metres.

GEOLOGY

Regional Setting

The Kisgegas property lies within the intermontane structural belt, in the southeast corner of the Bowser Basin. Most of the region is underlain by argillites, siltstones and minor carbonates of the Jurassic to Cretaceous Bowser Lake Group. These are intruded by a northwest trending group of roughly contemporaneous granodiorite and quartz monzonite stocks called the Bulkley Intrusions. The Bulkley intrusions have radiometric apparent ages of 70 to 84 Ma. (Carter, 1976). The Kisgegas molybdenite and scheelite occurrences are related to one such Late Cretaceous granodiorite stock.

Property Geology

The geology of the property has been discussed by DeLancey (1979) and briefly by Bending (1981). The known mineralization is within and peripheral to an elongate east - west trending stock 1500 metres long and 600 metres wide. Molybdenite, chalcopyrite, and pyrite occur in a weakly developed quartz vein stockwork and disseminated in altered areas within the granodiorite. Pyrite, pyrrhotite, and lesser ammounts of scheelite, chalcopyrite and molybdenite, occur in hornfels near the eastern contact. Scheelite occurs in sparse veins and along fractures in fresh argillite, and in garnet - epidote skarn developed in calcareous beds near the granodiorite contacts.

Sedimentary Rocks

Although the Bowser Lake Group sedimentary rocks exposed in the area have not been mapped in detail, four distinct assemblages were recognized during the 1981 programme. An unknown thickness of argillite and siltstone is overlain by a fifty metre thick section of interbedded argillites and greywackes. This is overlain by an interval characterized by locally calcareous argillites interbedded with one to two metre thick limestone subunits. The highest peaks are capped by massive chert pebble conglomerates. The only fossils found were pelecypod fragments in the limestones.

Igneous Rocks

Granodiorite porphyry

The dominant igneous rock underlying the property is granodiorite, with local compositional variations that range from quartz diorite to quartz monzonite. The rock is generally medium grained, with 2 to 3 cm. zoned phenocrysts of pink potash feldspar, and 3-5 mm quartz subhedra ('quartz-eyes') in a groundmass of plagioclase, minor orthoclase and biotite; some hornblende may also be present.

Where fresh, this rock is weakly magnetic. Hornfelsed argillite inclusions occur along intrusive contact zones and are particularly abundant near the west end of the stock. Pyritic, biotite rich schlieren that probably represent assimilated argillite inclusions occur near intrusive contacts and occasionally in the central portion of the stock.

The chronology of the igneous rocks, veins and alteration is summarized in Table 3. The following discussions classify each type of dyke by composition, texture and position in this chronology, from oldest to youngest.

Granodiorite dykes

Some granodiorite dykes intruding argillite near the north contact are clearly contemporaneous with the stock itself, but others crosscut the granodiorite, and are slightly later. These dykes are similar in composition to the granodiorite but are finer grained, with textures varying from a medium grained groundmass with 2-3 cm. k-feldspar phenocrysts, to a very fine grained groundmass with phenocrysts smaller than 1 cm.

TABLE 3

GENERAL PARAGENESIS - KISGEGAS PROPERTY

Intrusive Rocks	Veins	Alteration
(Oldest)		
Granodiorite Porphyry		
Granodiorite Dykes		
		Pervasive, light green alteration
Brown-Pink Aplite Dykes I		
Pale Grey Aplite Dykes		
	Pink Pegmatitic Veins(rare)	Pink K-feldspathization
	Early Potassic Veins(MoS_2)	Pink K-feldspathization along selvages 1-2cm thick
Brown-Pink Aplite Dykes II		
Pink and Buff Felsic Dykes		
	Grey Quartz (MoS_2, $CuFeS_2$) veins	Thin pale green selvages
	West Ridge Veining and Alteration	Silicification, potassic alteration
	Deep Pink Potassic Veins (rare)	Dark pink K-feldspathization
	Sheeted Veins	Weak pink K-feldspathization
	Vuggy Quartz, K-Feldspar, Pyrite Veins	Weak pink K-feldspathization
	Large Vuggy Quartz Veins	None
Irregular mafic intrusives with abundant inclusions		
Intermediate and Mafic Dykes		
		Argillic and late green alteration
(Youngest)		

Brown-Pink aplites I and II

Many brown-pink finely crystalline dykes 0.3 to 20 cm. wide (generally 0.5 to 2 cm.) outcrop along the ridge west of the glacier, throughout hole K-2-81, and near the bottom of hole K-1-81. Occasionally these dykes contain 1-3 mm 'quartz-eyes'. These dykes are cut by the early potassic veins. A second generation of brown-pink aplite dykes (II) cut the early potassic veins.

Pale grey aplites

Pale grey aplite dykes up to one metre thick are exposed along the West Ridge and in hole K-2-81. They vary in texture from finely crystalline to porphyritic, and contain distinct'quartz-eyes' up to 5 mm in diameter.

Pink and buff felsic dykes

Pink (occasionally pale buff) aphanitic to medium grained felsic dykes cut the early potassic veins. These dykes vary from less than 2 cm. wide to irregular masses greater than five meters in width. The larger dykes are medium grained, with 3-4 mm. 'quartz-eyes' in an equigranular groundmass of quartz and feldspar (dominantly potash feldspar).

As outlined in Table 3, several generations of veins separate the previously described intrusive events from later intermediate and mafic intrusives.

Irregular mafic intrusives with abundant inclusions

Several small exposures of mafic, fine grained intrusive rock with inclusions of fresh and altered granodiorite and felsite occur within the granodiorite stock. The bodies themselves are irregular in shape. They crosscut the common vein types. The exposures are adjacent to the 1965 Amax drillsite and adjacent to the west edge of the glacier along the West Ridge.

Intermediate and mafic dykes

One porphyritic dyke of intermediate composition is exposed along the West Ridge. This dyke cuts all veins and alteration, and is itself unaltered and weakly magnetic. One mafic porphyritic dyke is exposed along the West Ridge. It cuts all veins and alteration, contains finely disseminated pyrite, and is moderately magnetic.

Contact Effects

The contact zone adjacent to the granodiorite generally lacks extensive metamorphism or intense deformation. Contact effects, where present, include drag folds, contact metamorphism, felsite dykes and pods, and small lenses of intense silicification. Contaminated border zones are locally present in the granodiorite.

The bedding of the sedimentary country rocks is generally subhorizontal and not affected by the stock, but along the north contact the bedding of the argillite has been locally deformed in response to the intrusion.

The argillites alter along intrusive contacts to form a hornfels zone that varies in thickness from less than 1 metre to several tens of metres. The hornfels contains disseminations, fracture fillings, and local irregular concentrations of pyrite, pyrrhotite and, in some cases,chalcopyrite, molybdenite, and scheelite. Limestone beds adjacent to intrusive contacts are altered to skarn with garnets, epidote, diopside, pyrite, calcite, and scheelite. No systematic sampling has been performed, but some float found in the cirque has been visually estimated to contain up to 2% scheelite. The extent of the skarn zones has not been determined. In most cases these contacts are not readily accessible due to extreme topography. Numerous one metre thick skarn beds are exposed in the headwall above the glacier; this is apparently the source of much of the mineralized skarn and hornfels float.

The north contact zone is locally characterized by the presence of numerous angular inclusions of argillite and granodiorite in tan felsite. This zone, which is 2-3 metres thick, has the superficial appearance of a breccia. The felsite crosscuts both argillite and granodiorite, with sharp contacts and narrow but distinct chilled margins.

The 'North Boundary Felsite' consists of a pale tan, sugary textured siliceous rock with diffuse feldspar relics and occasional traces of pyrite and molybdenite. The superficial appearance of this rock is of a felsic intrusive, but it is probably an alteration zone in the granodiorite. Gradational contacts separating fresh granodiorite porphyry from 'felsite' can occur within a single outcrop.

Veins, Alteration and Mineralization

Molybdenite and lesser scheelite mineralization occur in quartz veins cutting the granodiorite pyritic hornfels peripheral to the stock, and in garnet pyroxene skarn within calcareous beds adjacent to the intrusive contact. The principal focus of the 1981 programme was the quartz vein stockwork within the granodiorite.

The mineralogy and chronology of the veins and alteration types are summarized in Table 3. Eight types of veins, each categorized on the basis of structure, mineralogy, alteration, texture and paragenetic position, occur in the stock. Some of these vein types have uncertain temporal relationships. Several types of veins that show intense pink potassic alteration may be contemporaneous or otherwise closely related, but are herein separated for discussion. Pre-intrusive white quartz veins, present in the argillite country rocks, are not included in Table 3. Significant amounts of molybdenite occur in veins of two ages: the early potassic veins and grey quartz veins. These veins are separated in time by the brown-pink aplite and pale grey felsite dykes. Traces of molybdenite occur in two younger vein types in some localities. These are called 'deep pink potassic veins' and the 'West Ridge veining and alteration'. Some vuggy quartz veins with K-feldspar contain minor pyrite.

Pervasive, light green alteration

Much of the granodiorite has undergone weak, pervasive alteration which produces a diffuse green colour. The green (sericitic?) alteration is the first hydrothermal event; it is crosscut by all veins and felsic dykes. This alteration destroys the weak magnetism present in the granodiorite. Traces of pyrite in biotite flakes, and finely disseminated chalcopyrite, are present where this green alteration is strongest. The north, west, and east fringes of the stock are less altered than the central area.

Pink pegmatitic veins

Two pink pegmatitic veins are exposed in the cirque near the north contact. These 2-3 thick veins are composed of pink potash feldspar, minor quartz, traces of biotite and rare molybdenite. The margins of these veins display 1-2 cm selvages of pink potassic alteration.

Early potassic veins

The early potassic veins generally contain quartz, pyrite, K-feldspar, and minor molybdenite. They are characterized by pale pink 0.5-1 cm thick selvages of potash feldspathization, frequently accompanied by finely disseminated molybdenite and pyrite. The veins vary in thickness from less than one millimetre to a maximum of 3 centimetres. Fluorite, gypsum, stibnite and sphalerite are present in some early potassic veins in hole K-1-81.

In some short intervals of drill holes K-1-81 and K-2-81 the veins are so closely spaced that the potassic alteration appears pervasive. More commonly, the potassic selvages are separated by fresh granodiorite, and the intensely altered bands represent only five to ten percent of the rock.

In DDH K-2-81, the alteration mineralogy of the early potassic veins varies with depth. Near the collar the selvages are the characteristic pale pink K-feldspar zones. At a depth of about 100 metres the outer margins of the selvages are lined with 2-3 mm bands of pale green sericitic alteration. The relative proportions of these two types of alteration vary with depth so that at 250 metres the sericitic alteration is predominant.

The mineralogy of the potassic selvages varies with host lithology. This is best demonstrated by following an individual vein through different rock types. Most granodiorite alters to form pale pink selvages, while the more mafic intrusive phases alter to a green colour. The argillite country rocks alter to form prominent pale grey-green sericitic selvages 1-2 cm thick.

Near the toe of the glacier, 300 metres northeast of drillsite K-1-81, are large angular blocks of granodiorite float cut by potassic veins bearing scheelite and powellite. No scheelite was observed in the core, and tungsten analyses of the core were uniformly low (2 to 3 ppm). This float may be evidence that a tungsten zone exists in peripheral parts of the early potassic vein system.

Grey quartz (MoS_2, $CuFeS_2$) veins

The most prominent concentrations of molybdenite, chalcopyrite and pyrite, occur in grey quartz veins. These veins vary from 2 mm to 25 cm in width but are generally less than 3 cm wide. Molybdenite occurs as smears along the vein margins and between thin quartz bands within some larger veins. The margins of these veins are characterized by narrow 2-5 mm selvages of silicification and weak green alteration. The relative lack of alteration adjacent to the veins contrasts with the early potassic veins. The grey quartz veins are most abundant in the outcrops in the vicinity of drill site K-1-81.

West Ridge veining and alteration

Figure 4 shows a cluster of felsic dykes in an area of intensive quartz veining, and silicic and potassic alteration cropping out along West Ridge. The silicic and potassic alteration is associated with traces of molybdenite and chalcopyrite. In some exposures silicification and potash feldspathization are so intense that very little remains of the primary igneous fabric of the granodiorite. This alteration probably postdates the early potassic veins, but because the grey quartz (MoS_2) veins have not been observed in this area the paragenesis is not established.

Deep pink potassic veins

Holes K-1-81 and K-2-81 intersected some quartz-k-feldspar veins, characterized by k-feldspar,with a deep brown-pink colour and 1-2 cm wide potassic selvages; these veins postdate the grey molybdenite bearing veins. Some of these deep pink potassic veins contain traces of molybdenite. Although the relative chronology of the West Ridge veining and alteration is not well established, textural and mineralogical similarity suggests that it is related to these deep pink potassic veins.

Sheeted veins

Much of the west end of the stock is penetrated by a swarm of quartz veins (and subordinate K-feldspar) with weak potassic selvages and traces of pyrite. These veins are 0.5 to 2.0 cm thick, 10-20 cm apart, and occur uniformly spaced across exposures more than fifty metres wide. They postdate the early potassic veins.

The sheeted veins exposed in the West Ridge do not contain molybdenite. Some large angular blocks of talus that are possibly derived from the north flank of the zone, about 100 metres below the outcrops examined, contain smears of molybdenite along veins that are similar in habit to the sheeted vein system.

Vuggy quartz, K-feldspar, pyrite veins

Veins containing vuggy quartz, K-feldspar and pyrite are scattered throughout the granodiorite and the hornfels. They vary from 1 cm. to 10 cm. wide but are generally less than 5 cm. Many show weak pink potassic alteration.

Large vuggy quartz veins

Vuggy white quartz veins 10 cm. to 50 cm. wide occur in the granodiorite and in the hornfelsed argillite. These veins have no distinct alteration. They are notably continuous; an individual vein near the west contact can be traced for more than 200 metres. All of these vuggy quartz veins strike about 045° and dip 60°-85° northwest.

Argillic alteration

Shear zones show intense argillic alteration of feldspars, producing a soft, friable light grey or pale grey-green aggregate. These intensely argillized shears are bounded by 2 - 3 metre wide zones of very intense deep green alteration characterized by destruction of biotite, removal of quartz, conversion of plagioclase to a green intergrowth of clay and epidote (or chlorite?) and incipient argillization of K-feldspar megacrysts.

This type of altered granodiorite weathers easily and is not generally observed in outcrop. Some is exposed along the West Ridge above drill site K-2-81, and in the fault zone in the cliffs east of the glacier. Short intervals of sheared and argillized rocks were intersected by holes K-1-81 and K-2-81.

Structure

The structural geology of the Kisgegas property can be considered in terms of the geometry of the various igneous phases and the orientations of the veins, fractures and faults.

Intrusive rocks

The granodiorite stock is elongate along an east-west axis. Several dykes of granodiorite that are contemporaneous with the stock dip steeply to the north and strike between 090° and 095°.

Figure 3-1 is a stereographic plot of the poles to all felsic dyke orientations measured. It shows a random orientation for the felsic dykes throughout the property, except for the West Ridge, where the dykes show a northeast preferred trend (see the geological map, Figure 4).

Early potassic veins

Figure 3-2 is a stereographic plot of poles to orientations of the early potassic veins. It shows that they have a generally random orientation. In the central part of the stock, near drill-site K-1-81, these veins have a very strong preferred orientation; they strike northeast and dip 55° - 75° northwest. The angles of intersection between the potassic veins and the core axis in DDH K-1-81 show a gradual decrease from 85° near the collar to 35° at depth. The orientations of the potassic veins in hole K-2-81 are less systematic; they form a stockwork of veins that intersect the core axis at 20° - 80°.

Grey quartz (MoS_2, $CuFeS_2$) veins

The grey quartz (MoS_2, $CuFeS_2$) veins display a strong NE-SW trend (Figure 3-3). The dips of these veins vary from steeply southeast to steeply northwest, including some that are subhorizontal or have shallow northwesterly dips. The shallow dips are localized in the central part of the intrusive, near drillsite K-1-81. Figure 5 shows the orientation of the grey veins in this hole. In the top 100 metres, most of the veins dip about 30° to the NW and intersect the core axis at about 80°. They are oblique to the most prominent set of potassic veins. The dip of the grey veins becomes progressively steeper with depth, until at 350 metres they intersect the core axis at about 40°. The grey quartz (MoS_2) veins intersected by DDH K-2-81 are subparallel to the core axis. The apparent general pattern of the grey veins across this mineralized, central part of the stock, is nearly horizontal over the axis of the zone (in the central part of the stock) and steeply dipping along the fringes.

Other veins

The poles to measured orientations of the sheeted vein system exposed in the West Ridge are plotted in Figure 3-4. The poles are tightly grouped and show a very strong preferred orientation, trending east-northeast and dipping 70° - 80° northwesterly. This is a much stronger grouping than that in any previous vein set.

Figure 3-5 is a composite plot of poles to orientations of late stage vein types. The large vuggy quartz veins show a strong preferred orientation parallel to the sheeted vein system. The other vein types have a random orientation.

Faults

The stock is cut by numerous local faults. The only significant fault apparent in outcrop is exposed near the east end of the property. This is a reverse fault, oriented 052°/40°NW, with at least 100 metres of vertical displacement. The trace of this fault is marked by a slickensided zone with 20-30 cm of rusty clay-rich gouge. This fault displaces and postdates all the types of veins exposed at the east end of the cirque.

K-1-81 intersected numerous shear zones showing argillic alteration. These zones intersect the core axis at about 30° and appear to be parallel to each other. Comparison of shear and vein orientations in core to adjacent outcrops indicates that these shears probably trend northeast and dip about 80° northwest. DDH K-2-81 has a higher proportion of altered shear zones than K-1-81. Most of the shears in K-2-81 intersect the core axis at about 15°, but some are up to 45° to the core axis.

GEOCHEMISTRY

Fifteen metre composite samples from the drill holes were analysed by geochemical methods for Sn, W, F, Mn and Cu. These elements were selected in an attempt to identify primary dispersion patterns related to the molybdenite mineralization. Sn and W analyses were discontinued when the first shipment of samples contained no detectable tin and a uniformly low (2-3ppm) tungsten content.

The Cu, Mn, and F values are plotted along with corresponding MoS_2 assays in Figures 7 and 8. The data show no obvious pattern, but in the context of the geology of the holes some conclusions are possible. Each vein and alteration type has a distinct geochemical signature, and rigorous examination of primary dispersion patterns would require sampling of individual vein and alteration systems. Hole K-1-81 has generally lower Cu values than Hole K-2-81, and a much higher Mo/Cu ratio. Cu values in hole K-1-81 vary from 670 ppm to 188 ppm, with a mean Cu value of 350.8 ppm and a mean MoS_2/Cu ratio of 1.27. Cu values in hole K-2-81 range from a maximum of 850 ppm, near the collar, to 80 ppm at the bottom, with a mean of 373.6 ppm and a mean MoS_2/Cu ratio of 0.67. Hole K-2-81 penetrated the south margin of the stockwork, whereas DDH K-1-81 was closer to the centre of the system. The difference between these holes may indicate the presence of a Cu halo peripheral to the mineralized zone.

DISCUSSION

The Kisgegas Mo(W) property has extensive, locally intense potassic alteration, widespread quartz veining, and locally attractive grades of molybdenite mineralization in vein systems of two distinct ages. However, most of the quartz veins do not contain molybdenite and the most attractive mineralization is not related to the prominent potassic alteration.

The early potassic vein and alteration system contains molybdenite in veins and as disseminations in thin selvages. Because these veins are generally widely spaced, they make a minor contribution to the overall molybdenite grades, but intervals in which they are well developed and closely spaced (so about 50% of the interval has been subjected to potassic alteration) grade up to 0.15% MoS_2. The molybdenite content, the width of the selvages, and the width of these veins appear to be greatest in the central part of the stock, in the area of drill site K-1-81.

The grey quartz-MoS_2 veins contain the richest molybdenite concentrations in the property. The best mineralization (0.2 to 0.407% MoS_2 across 3 metre intervals) intersected by hole K-1-81 occurs in grey veins, with a small proportion in early potassic veins. The grey vein system is exposed from the West Ridge to the east side of the glacier, but in most exposures these veins are very narrow and widely scattered. The best exposures of this vein system are in the vicinity of K-1-81, where the veins are more abundant and contain proportionately more molybdenite than elsewhere in the property. The fact that the best thirty metres in hole K-1-81 was richer and more continuous than any exposed mineralization serves to focus attention on the potential of this system at depth and beneath the glacier.

The area of intense veining and quartz-k-spar alteration exposed along the West Ridge contains only traces of molybdenite. The intensity of the alteration and the presence of traces of molybdenite suggest a possible relationship to more attractive mineralization. The 1965 AMAX drill hole was apparently planned to test this system; it was directed below the centre of the area of intense veining and alteration. The upper part was reported to contain very low grade mineralization similar to that in the upper parts of K-1-81. The lower part, which penetrated the rock below the exposed quartz-K-spar alteration, contained only traces of molybdenum.

The outcrops of the sheeted vein system do not contain molybdenite. It is possible that this well developed vein system is the apical expression of a mineralized zone at depth, however, the available evidence in support of this idea is not strong enough to warrant drilling at this time.

The next steps in evaluating the property should be further drilling to test the mineralized zone intersected in hole K-1-81 at greater depth, and along strike to the east. Proposed hole K-3-81 is an attempt to penetrate the K-1-81 mineralization at a greater depth to further evaluate the grade and geometry of the system. Proposed hole K-4-82 is situated to test the eastern strike extension of the same stockwork.

The tungsten potential of the skarn and hornfels was not evaluated in 1981. Poor weather and limited manpower prevented systematic mapping and sampling of the cliffs where the skarns are exposed. As noted by DeLancey (1980), some float in the cirque contains attractive quantities of scheelite. The beds that are the most probable sources of this mineralization are exposed along the cliffs east of the glacier and in the headwall of the cirque. They are generally less than one metre thick and not uniformly mineralized. More work will be necessary to evaluate the tungsten potential of this contact zone.

David A Bending

D.A. Bending

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APPENDIX 1

SUMMARY OF ASSAYS AND ANALYSES

PROPERTY: Kisgegas HOLE No.: K-1-81 PAGE 1 of 5

LATITUDE: 6,179,830N* AZIMUTH: 156° INCLINATION: 156° / -53 at 213.4

LONGITUDE: 598,830E* DIP: -53 INCLINATION: 156° / -55 at 415.1

ELEVATION: 1764* *not surveyed-approximate INCLINATION: ____ / ____ at ____

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18226	1.2	3.0	0.020							
18227	3.0	6.0	0.017							
18228	6.0	9.0	0.030		ND	500			210	268
18229	9.0	12.0	0.028							
18230	12.0	12.0	0.019							
18076	15.0	18.0	0.043							
18077	18.0	21.0	0.035							
18078	21.0	24.0	0.055		ND	470		2	240	220
18079	24.0	27.0	0.027							
18080	27.0	30.0	0.030							
18081	30.0	33.0	0.020							
18082	33.0	36.0	0.042							
18083	36.0	39.0	0.033		ND	410		2	190	280
18084	39.0	42.0	0.057							
18085	42.0	45.0	0.062							
18086	45.0	48.0	0.030							
18087	48.0	51.0	0.025							
18088	51.0	54.0	0.143		ND	550		3	210	405
18089	54.0	57.0	0.040							
18090	57.0	60.0	0.063							
18091	60.0	63.0	0.050							
18092	63.0	66.0	0.065							
18093	66.0	69.0	0.032		ND	520		3	255	360
18094	69.0	72.0	0.063							
18095	72.0	75.0	0.050							
18096	75.0	78.0	0.037							
18097	78.0	81.0	0.047							
18098	81.0	84.0	0.068		ND	550		2	220	358
18099	84.0	87.0	0.037							
18100	87.0	90.0	0.067							
18101	90.0	93.0	0.022							
18102	93.0	96.0	0.014							
18103	96.0	99.0	0.017		ND	550		3	235	298
18104	99.0	102.0	0.013							
18105	102.0	105.0	0.013							

PROPERTY: Kisgegas HOLE No.: K-1-81

LATITUDE: ____ AZIMUTH: ____ INCLINATION: ____ / ____ at ____

LONGITUDE: ____ DIP: ____ INCLINATION: ____ / ____ at ____

ELEVATION: ____ INCLINATION: ____ / ____ at ____

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18106	105.0	108.0	0.013							
18107	108.0	111.0	0.012							
18108	111.0	114.0	0.033		ND	500		3	220	670
18109	114.0	117.0	0.020							
18110	117.0	120.0	0.017							
18111	120.0	123.0	0.023							
18112	123.0	126.0	0.024							
18113	126.0	129.0	0.022		ND	550		3	220	515
18114	129.0	132.0	0.080							
18115	132.0	135.0	0.033							
18116	135.0	138.0	0.043							
18117	138.0	141.0	0.050							
18118	141.0	144.0	0.025		ND	550		3	225	515
18119	144.0	147.0	0.045							
18120	147.0	150.0	0.058							
18121	150.0	153.0	0.090							
18122	153.0	156.0	0.044							
18123	156.0	159.0	0.025		ND	500		3	300	341
18124	159.0	162.0	0.018							
18125	162.0	165.0	0.003							
18126	165.0	168.0	0.040							
18127	168.0	171.0	0.043							
18128	171.0	174.0	0.042		ND	710		2	290	302
18129	174.0	177.0	0.015							
18130	177.0	180.0	0.027							
18131	180.0	183.0	0.027							
18132	183.0	186.0	0.007							
18133	186.0	189.0	0.013		ND	580		2	275	238
18134	189.0	192.0	0.018							
18135	192.0	195.0	0.013							
18136	195.0	198.0	0.023							
18137	198.0	201.0	0.027							
18138	201.0	204.0	0.017		ND	710		2	270	235
18139	204.0	207.0	0.018							
18140	207.0	210.0	0.017							

PROPERTY: Kisgegas HOLE No.: K-1-81

LATITUDE: ______ AZIMUTH: ______ INCLINATION: ___ / ___ at ___

LONGITUDE: ______ DIP: ______ INCLINATION: ___ / ___ at ___

ELEVATION: ______ INCLINATION: ___ / ___ at ___

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18141	210.0	213.0	0.023							
18142	213.0	216.0	0.002							
18143	216.0	219.0	0.002		ND	710		2	295	194
18144	219.0	222.0	0.012							
18145	222.0	225.0	0.017							
18146	225.0	228.0	0.022							
18147	228.0	231.0	0.013							
18148	231.0	234.0	0.007		ND	800		2	330	205
18149	234.0	237.0	0.017							
18150	237.0	240.0	0.017							
18151	240.9	243.0	0.013							
18152	243.0	246.0	0.017							
18153	246.0	249.0	0.030		ND	680		2	325	176
18154	249.0	252.0	0.013							
18155	252.0	255.0	0.023							
18156	255.0	258.0	0.017							
18157	258.0	261.0	0.014							
18158	261.0	264.0	0.062		ND	710		3	280	296
18159	264.0	267.0	0.043							
18160	267.0	270.0	0.125							
18161	270.0	273.0	0.067							
18162	273.0	276.0	0.060							
18163	276.0	279.0	0.037		ND	530		3	220	251
18164	279.0	282.0	0.010							
18165	282.0	285.0	0.012							
18166	285.0	288.0	0.010							
18167	288.0	291.0	0.009							
18168	291.0	294.0	0.023		ND	980		3	190	299
18169	294.0	297.0	0.018							
18170	297.0	300.0	0.057							
18171	300.0	303.0	0.043							
18172	303.0	306.0	0.009							
18173	306.0	309.0	0.042		ND	530		2	195	335
18174	309.0	312.0	0.065							
18175	312.0	315.0	0.020							

PROPERTY: Kisgegas HOLE No.: K-1-81

LATITUDE: ____ AZIMUTH: ____ INCLINATION: ___ / ___ at ___

LONGITUDE: ____ DIP: ____ INCLINATION: ___ / ___ at ___

ELEVATION: ____ INCLINATION: ___ / ___ at ___

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18176	315	318	0.025							
18177	318	321	0.060							
18178	321	324	0.058		ND	450			160	328
18179	324	327	0.047							
18180	327	330	0.038							
18181	330	333	0.047							
18182	333	336	0.038							
18183	336	339	0.028		ND	550			170	505
18184	339	342	0.062							
18185	342	345	0.152							
18186	345	348	0.400							
18187	348	351	0.045							
18188	351	354	0.179		ND	500			180	550
18189	354	357	0.295							
18190	357	360	0.145							
18191	360	363	0.285							
18192	363	366	0.062							
18193	366	369	0.053		ND	450			200	605
18194	369	372	0.409							
18195	372	375	0.098							
18196	375	378	0.042							
18197	378	381	0.040							
18198	381	384	0.037		ND	410			160	450
18199	384	387	0.032							
18200	387	390	0.040							
18201	390	393	0.010							
18202	393	396	0.008							
18203	396	399	0.028		ND	480			220	410
18204	399	402	0.017							
18205	402.0	405.0	0.021							
18206	405.0	408.0	0.033		ND	390			170	377
18207	408.0	411.0	0.008							
18208	411.0	414.0	0.033							
18209	414.0	417.0	0.010							
18210	417.0	420.0	0.007							

PROPERTY: Kisgegas HOLE No.: K-1-81 PAGE 5 of 5

LATITUDE: ______ AZIMUTH: ______ INCLINATION: ____ / ____ at ____

LONGITUDE: ______ DIP: ______ INCLINATION: ____ / ____ at ____

ELEVATION: ______ INCLINATION: ____ / ____ at ____

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18211	420.0	421.2	0.007		ND	410			160	188

PROPERTY: Kisgegas HOLE No.: K-2-81 PAGE 1 of 3

LATITUDE: 6,179,750N* AZIMUTH: 226° INCLINATION: 224 / -51 at 137.2 m

LONGITUDE: 598,735 E* DIP: -51° INCLINATION: 229 / 51° at 288.1 m

ELEVATION: 1797 m * *not surveyed-approximate INCLINATION: / at

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
18212	0.0	3.0	0.047							
18213	3.0	6.0	0.045							
18214	6.0	9.0	0.048		ND	480			170	770
18215	9.0	12.0	0.091							
18216	12.0	15.0	0.037							
18217	15.0	18.0	0.030							
18218	18.0	21.0	0.052							
18219	21.0	24.0	0.032		ND	430			170	770
18220	24.0	27.0	0.067							
18221	27.0	30.0	0.028							
18222	30.0	33.0	0.018							
18223	33.0	36.0	0.042							
18224	36.0	39.0	0.018		ND	410			180	850
18225	39.0	42.0	0.020							
18231	42.0	45.0	0.027							
18232	45.0	48.0	0.042							
18233	48.0	51.0	0.067							
18234	51.0	54.0	0.033		ND	410			180	770
18235	54.0	57.0	0.025							
18236	57.0	60.0	0.018							
18237	60.0	63.0	0.020							
18236	63.0	66.0	0.020							
18239	66.0	69.0	0.020		ND	290			180	535
18240	69.0	72.0	0.017							
18241	72.0	75.0	0.018							
18242	75.0	78.0	0.008							
18243	78.0	81.0	0.022							
18244	81.0	84.0	0.047		ND	370			200	440
18245	84.0	87.0	0.007							
18246	87.0	90.0	0.005							
18247	90.0	93.0	0.098							
18248	93.0	96.0	0.070							
18249	96.0	99.0	0.045		ND	350			190	535
18250	99.0	102.0	0.013							
1901	102.0	105.0	0.050							

PROPERTY: Kisgegas HOLE No.: K-2-81 PAGE 2 of 3

LATITUDE: ______ AZIMUTH: ______ INCLINATION: ____ / ____ at ____

LONGITUDE: ______ DIP: ______ INCLINATION: ____ / ____ at ____

ELEVATION: ______ INCLINATION: ____ / ____ at ____

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
1902	105.0	108.0	0.022							
1903	108.0	111.0	0.107		ND	260			180	327
1904	111.0	114.0	0.033							
1905	114.0	117.0	0.012							
1906	117.0	120.0	0.030							
1907	120.0	123.0	0.020		ND	270			210	234
1908	123.0	126.0	0.007							
1909	126.0	129.0	0.003							
1910	129.0	132.0	0.005							
1911	132.0	135.0	0.022							
1912	135.0	138.0	0.023							
1913	138.0	141.0	0.010		ND	320			230	205
1914	141.0	144.0	0.007							
1915	144.0	147.0	0.022							
1916	147.0	150.0	0.022							
1917	150.0	153.0	0.010							
1918	153.0	156.0	0.008		ND	430			290	231
1919	156.0	159.0	0.005							
1920	159.0	162.0	0.047							
1921	162.0	165.0	0.043							
1922	165.0	168.0	0.037							
1923	168.0	171.0	0.008		ND	330			240	126
1924	171.0	174.0	0.013							
1925	174.0	177.0	0.004							
1926	177.0	180.0	0.012							
1927	180.0	183.0	0.012							
1928	183.0	186.0	0.012		ND	270			230	122
1929	186.0	189.0	0.007							
1930	189.0	192.0	0.003							
1931	192.0	195.0	0.002							
1932	195.0	198.0	0.003							
1933	198.0	201.0	0.003		ND	260			200	94
1934	201.0	204.0	0.002							
1935	204.0	207.0	0.003							
1936	207.0	210.0	0.007							

PROPERTY: Kisgegas HOLE No.: K-2-81 PAGE 3 of 3

LATITUDE: ______ AZIMUTH: ______ INCLINATION: ___ / ___ at ___

LONGITUDE: ______ DIP: ______ INCLINATION: ___ / ___ at ___

ELEVATION: ______ INCLINATION: ___ / ___ at ___

SAMPLE No.	METRES FROM	METRES TO	MoS_2 ASSAYS		Sn ppm	F ppm		W ppm	Mn ppm	Cu ppm
1937	210.0	213.0	0.002							
1938	213.0	216.0	0.002		ND	320			230	114
1939	216.0	219.0	0.002							
1940	219.0	222.0	0.003							
1941	222.0	225.0	0.003							
1942	225.0	228.0	0.007							
1943	228.0	231.0	0.003		ND	300			200	149
1944	231.0	234.0	0.007							
1945	234.0	237.0	0.012							
1946	240.0	243.0	0.003							
1947	240.0	243.0	0.003							
1948	243.0	246.0	0.003		ND	290			270	80
1949	246.0	249.0	0.008							

APPENDIX 2

SUMMARY GEOLOGICAL LOGS

DDH K-1-81

DDH K-2-81

PROPERTY: Kisgegas	**TEXASGULF INC.**	HOLE NO. K-1-81
LOCATION (grid) NTS 93M/14W	**DRILL HOLE LOG**	
LOCATION (survey) *not surveyed		CLAIM: Molly Blue
AZIM: 156° ELEV: 1764* DIP: -50°		SECTION:
DEPTH: 421.2 m CORE SIZE: BQ		LOGGED BY: D. Bending
STARTED: September 1, 1981		DATE LOGGED: September 1981
COMPLETED: September 10, 1981		DRILLING CO.: Longyear
CORE RECOVERY: Very High - nearly 100%		

DIP TEST

DEPTH	AZIM	DIP
213.4	156°	-53°
425.1	156°	-55°

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
0	1.2		Overburden
1.2	46.5	100%	Granodiorite porphyry: 2 -3 cm. K-feldspar megacrysts and 3 - 4 mm. quartz - eyes in a medium grained gound mass of plagioclase, biotite, and K-feldspar. This is weakly altered to a diffuse green colour, with traces of finely disseminated pyrite in biotite. Two types of dykes (pale, pink aplite, 1 - 3 cm. wide, 30° - 40° to the core axis; tan - pink aplite, 0.5 - 3.0 cm. wide, 80° to the core axis) are sparsely distributed throughout the interval. Three subparallel sets of veins cut the core ar 70° to 85°. Each type of vein has a distinct mineralogy and paragenetic setting.
			(1) Quartz, K-feldspar, pyrite veins 0.5 - 3.0 cm. thick with traces of MoS_2 accompanied by 1 cm. thick selvages of intense pale pink potassic alteration with finely disseminated MoS_2. This pink potassic alteration accounts for about 10% of this interval. These veins are scattered throughout the interval with an abundance of two to four per metre. Stibnite and sphalerite occur in one such vein at 31.3 metres.
			(2) Grey quartz veins with MoS_2, FeS_2, and FeS_2, 0.2 to 2.0 cm. thick, with very weak pale green selvages 0.1 to 0.3 cm. thick. MoS_2 occurs finely disseminated in the grey quartz and as smears along the grain margins. These veins are widely scattered, about two per metre.
			(3) Vuggy white quartz veins 10 to 20 cm. thick, cutting the core axis at 70°.

TEXASGULF INC.			DRILL HOLE LOG	HOLE NO. K-1-81	PAGE NO. 2

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
			All of these vein types are locally cut by narrow shear zones accompanied by intense argillic alteration.
46.5	47.5	95%	Sheared, argillized granodiorite with sheared remnants of grey quartz, MoS_2, $CuFeS_2$, FeS_2 veins.
47.5	195.0	99%	Variably altered grandiorite porphyry as previously described. Some 0.5 - 1.5 metre intervals contain closely spaced early potassic veins and pervasive potassic alteration with finely disseminated molybdenite. The molybdenite bearing grey quartz veins are generally spaced about 3 per metre but some intervals have higher abundance (80-85 metres, about 6 per metre; 116-121, 5 per metre). Vein orientations are less consistent than in the interval above 46.5 metres. The early potassic veins cut the core axis at 50°-80°. Felsic dykes occur as described elsewhere but are rare.
195.0	198.0	99%	Granodiorite porphyry with intense prevasive pale pink potassic alteration and finely disseminated molybdenite, along closely spaced early potassic veins. This is cut by 1-5 mm thick grey quartz, MoS_2 veins at 75°-80° to the core axis. The interval is cut by several small slickensided shears at 28° to 40° to the core axis.

TEXASGULF INC.

DRILL HOLE LOG

HOLE NO. K-1-81 | PAGE NO. 3

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
198.0	213.2	98-100%	Variably altered granodiorite porphyry with locally pervasive pink potassic alteration along early potassic veins 65° to 80° to the core axis and sparse grey quartz, MoS_2 veins 70° to 80° to core axis.
213.2	220.1	100%	Granodiorite dyke; similar in texture to the granodiorite but darker in colour (with more abundant biotite). Chilled margins 0.8 metre thick are dark grey, unaltered, and weakly magnetic. The inner phase of the dyke is weakly propyllitized and not magnetic. Note that the early potassic veins cut the dyke but seem to be less abundant than in the enclosing granodiorite.
220.1	227.3	99%	Variably altered granodiorite with pink felsite and grey-green intermediate dykes. The granodiorite is characterized by weak to moderate pervasive propyllitic alteration, MoS_2 bearing early potassic veins, occasioned MoS_2-bearing grey quartz veinlets, later 1 to 3 cm. thick quartz k-feldspar pyrite veins, and vuggy white quartz veins. The pink dykes cut the early potassic veins but show no distinct crosscutting relationships to the late vuggy quartz veins.
227.3	224.0		Variably altered granodiorite porphyry; pink potassic veins and alteration are abundant and represent about 30% of the rock. These early potassic veins cut the core axis at angles of 35° to 80° in a stockwork. Later MoS_2 bearing grey quartz veins cut the core at about 70°. These later veins are sparse, with an average of two per metre.

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
244.0	249.7	90%	Intensely altered, sheared granodiorite porphyry. 15 to 20% of the interval has been subjected to intense potassic alteration along early potassic veins as described above. Some grey quartz (MoS_2 etc.) veins occur, cutting the early potassic veins. The entire interval has been sheared and subjected to deep green argillic and propyllitic alteration.
249.7	276.0	100%	Moderately to intensely altered granodiorite, with early potassic veins accompanied by locally rich MoS_2 concentrations. This potassic alteration represents about 20% of the interval. This is cut by some 1 to 3 cm. thick brown-pink dykes and sparse but locally rich grey quartz-MoS_2 veins. Short intervals have been sheared and subjected to intense grey-green argillic and chloritic alteration.
276.0	297.5	100%	Variably altered granodiorite with two 1 - 3 cm. thick buff felsite dykes, and numerous 10 - 50 cm. thick brownish pink dykes cutting the core at 25° to 45°. Early potassic veins account for about 12% of the interval. Grey quartz-MoS_2 veins occur about 2 per metre. Traces of stibnite occur in an early potassic vein at 283.8 metres.
			The granodiorite in this interval shows several textural variations; some are more biotite-rich and finely crystalline. The biotite here as elsewhere contains finely disseminated pyrite.
297.5	341.0	100%	Variably altered granodiorite porphyry cut by veins and dykes in the paragenesis described above. Some of the early potassic veins contain gypsum, calcite, and fluorite along with some of the richest molybdenite observed in this

TEXASGULF INC. — DRILL HOLE LOG — HOLE NO. K-1-81 — PAGE NO. 5

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
			type of vein. (e.g. 308-310). These early potassic veins cut the core axis at 40° - 55°. The grey quartz (MoS_2) veins cut the core axis at progressively higher angles; here they occur at 40° to 50°. An early potassic vein with gypsum occurs at 323.5 m.
341.0	359.4	100%	Variably altered granodiorite porphyry, with sparse (some are complex, with gypsum and fluorite) early potassic veins 75° - 30° to the core axis, grey quartz veins 1 cm. to 5 cm. thick with locally rich MoS_2 (about 40° to the core axis), and occasional late stage, deep pink potassic veins. Some short intervals (341 to 343, 345 to 346 metres) are pervasively k-altered and contain finely disseminated molybdenite. A brown-pink felsic dyke at 353-354 contains finely disseminated MoS_2.
359.4	361.4	90%	Intensely altered granodiorite. A shear zone 25° to the core, 10 cm. wide, at 360.4 is filled with dark green clays and rock flour. One metre on each side has been intensely altered to white clays and a waxy deep green aggregate. Very little of the primary fabric of the rock remains.
361.4	389.5		Moderately propyllitized granodiorite (pervasive green alteration is less intense below 385.8 m) with: (a) sparse early potassic veins 15° - 65° to the core axis (average 40°)
			(b) numerous 2 cm. wide flesh coloured dykes 65° - 70° to the core;
			(c) grey quartz-MoS_2 veins 40° to the core axis;
			(d) deep pink potassic veins, 25° to 60° to the core axis, dipping opposite the early potassic veins. Note: some intense green alteration along a grey quartz vein.

TEXASGULF INC. — DRILL HOLE LOG — HOLE NO. K-1-81 — PAGE NO. 6

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
389.5	394.9	100%	Intermediate dyke; finely crystalline, variably altered, with 2-3 cm. zoned phenocrysts of plagioclase and 3-4 mm quartz eyes in a groundmass of plagioclase, biotite (5%) and pale green alteration products. This dyke has fresh, magnetic chilled margins and a non-magnetic, weakly altered 'core'. The quartz eyes are more apparent in the 'core'. This dyke cuts the core axis at 80°. It is cut by the early potassic veins.
394.9	402.5	100%	Variably altered granodiorite porphyry. A 10 cm. quartz (MoS_2, $CuFeS_2$, FeS_2) vein cuts the core at 15°, at 399.15. 0.65 metres on each side of this vein the granodiorite has been altered to a soft, green, clay-rich rock with traces of MoS_2. The rest of the interval is cut at 20 to 30° by typical early potassic veinlets with traces of molybdenite. Note that a 5 mm thick tan coloured dyke at 394.9 cuts some of the pale potassic alteration and is cut by other similar alteration.
402.5	421.5		Generally fresh granodiorite porphyry with 1-3 cm.. thick zones of pink potassic alteration, 1-2 cm. thick pink aplitic dykes, and some 1-2 cm. thick grey quartz veins with traces of MoS_2 and $CuFeS_2$. The granodiorite in this interval is exceptionally fresh and weakly magnetic; only about 30% has been weakly propyllitized. Note numerous 2 to 8 mm thick brown-pink dykes that cut the light pink alteration.
			421.5 - End of Hole.

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TEXASGULF INC. | DRILL HOLE LOG | HOLE NO. K-2-81 | PAGE NO. 2

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
50.0	84.9	99%	Weakly to intensely altered granodiorite porphyry with the same sequence of veins and alteration as described above, but the veins are less abundant and show a more uniform orientation (instead of the stockwork described above). The early potassic veins occur 20° to subparallel to the core axis. One 2.5 cm. thick early potassic vein present at 53.4 m. contains sphalerite in addition to the typical assemblage of quartz, K-feldspar, pyrite and molybdenite. The grey quartz veins subparallel to the core axis contain minor MoS_2. Numerous 0.5 - 3.0 cm. tan - pink dykes that predate the early potassic veins cut the core axis at 20°. Note at 53.0 -53.2, three diffuse patches rich in finely divided biotite, chlorite, and pyrite that may be relics of assimilated inclusions.
84.9	93.8	95%	Intensely altered granodiorite porphyry. Deep flesh - pink potassic alteration associated with quartz, pyrite veins and disseminated MoS_2 has been overprinted by numerous slickensided shears 10°- 15° to the core axis, and later intense argillic and green 'propyllitic' alteration. The pale argillic alteration is localized along the shears, and the deep green 'propyllitic' alteration is more pervasive but is gradational with the argillic alteration.
93.8	100.0	99%	Moderately to intensely altered granodiorite porphyry. About 65% of this interval has been subjected to moderate but pervasive green alteration and contains disseminated FeS_2 and $CuFeS_2$. This is cut by a well developed stockwork of early potassic veins. Most of these veins cut the core axis at 10°- 25°. An altered and veined pale pink quartz - eye felsite dyke cuts the core at 15° in the interval 96.5 - 96.8m.
100.0	133.5	99%	Moderately to intensely altered granodiorite porphyry with a locally well developed quartz vein stockwork. Most of the interval has been subjected to weak green alteration, with associated finely disseminated pyrite and chlcopyrite. The mineralogy and chronol-ogy of the veins present is generally similar to that described above. The early

TEXASGULF INC.
DRILL HOLE LOG

HOLE NO. K-2-81

PROPERTY: Kisgegas
LOCATION (grid) NTS 93M/14W
LOCATION (survey) *not surveyed
AZIM: 226° ELEV: 1797° DIP: -50°
DEPTH: 291 m CORE SIZE: BQ
STARTED: September 15, 1981
COMPLETED: September 23, 1981
CORE RECOVERY: 99%

CLAIM: Molly Blue
SECTION:
LOGGED BY: D. Bending
DATE LOGGED: September 1981
DRILLING CO.: Longyear

DIP TEST

DEPTH	AZIM	DIP
137.2m	224°	-51°
288.1m	229°	-50°

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
0	2.0		Overburden - talus
2.0	50.0	99%	Granodiorite porphyry with occasional felsic dykes; pervasively but weakly altered to a pale green colour. Four types of veins occur as follows: (1) Quartz, K-feldspar, pyrite, MoS_2 veins with 1 -2 cm. wide selvages of pale pink K-feldspathization, cut the core axis at 20° - 40°. These 0.5 - 1.5 cm. thick veins, henceforth called 'early potassic veins', occur 3 - 6 per metre. Where they are closely spaced the selvages coallesce to form pervasive potassic alteration; (2) Grey quartz, FeS_2, $CuFeS_2$, MoS_2 veins and veinlets 0.1 - 1.5 cm. thick, subparallel to the core axis, are widely spaced but are present throughout most of the interval; (3) Occasional quartz, K-feldspar, pyrite veins with with weak potassic selvages, cutting the core at 20°- 30°, and crosscut vein types (1) and (2); (4) Vuggy white quartz veins, 2 - 25 cm. thick, cutting the core at 45°, with weak pink potassic selvages (or in some cases, no alteration). The overall effect of the superimposed vein systems is of a well developed stockwork. Some short intervals are sheared, argillized, and weakly stained with limonite. Two tan-pink felsite dykes in the interval 17.0 - 19.8, intersecting the core at 20° - 25° are cut by the early potassic veins and contain finely disseminated MoS_2.

TEXASGULF INC. — DRILL HOLE LOG — HOLE NO. K-2-81 — PAGE NO. 3

DEPTH (m) FROM	TO	REC'Y	DESCRIPTION
			potassic veins show zoned selvages, with 0.5 cm. green sericitic rims outside the more typical pale pink selvages. These early potassic veins occur 30° to subparallel to the core axis. A dark grey, biotite - rich, partly assimilated inclusion occurs at 116.4 m.. The interval 125 - 128 contains numerous 1 cm. thick brown - pink dykes subparallel to the core axis, that predate the early potassic veins. A 25 cm. thick flesh brown quartz - eye felsite dyke at 128.3, cuts the core axis at 50°. This dyke cuts the early potassic veins.
133.5	142.5	100%	Weakly to intensely altered granodiorite as above. Some later, deep pink potassic alteration occurs along quartz, K-feldspar, pyrite veins that cut the early potassic veins. The interval 134.8 to 135.5 is characterized by shearing and intense argillic alteration that postdates the veins.
142.5	157.5	97%	Sheared, intensely argillized and propyllitized granodiorite with relics of early potassic veins and white quartz veinlets. The interval 145.7 - 148.1 contains numerous white quartz veins and deep brown - pink potassic alteration, overprinted by shearing and green clay - rich alteration. The slickensided shears cut the core at 15° - 30°.
157.5	161.0	100%	Weakly to intensely altered granodiorite porphyry with some 1 - 2 cm. pale tan - buff felsite dykes 20° to subparallel to the core axis, and some short dark biotite - rich intervals that may represent assimilated country rocks. The interval is nearly fresh, with a very weak green colour, and is cut by a sparse stockwork of early potassic veins (most cut the core at 20°-30°) and two vuggy white quartz veins.
161.0	163.5	100%	Pale tan aplite dyke with pinheads of MoS_2 and FeS_2. Locally altered (argillic, green) shears.
163.5	177.0	100%	Variably altered granodiorite porphyry. Most is very weakly altered to a diffuse green colour with traces of FeS_2 and $CuFeS_2$ in corroded biotite flakes. A sparse set of early potassic veins with traces of MoS_2.

TEXASGULF INC. — DRILL HOLE LOG — HOLE NO. K-2-81 — PAGE NO. 4

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
			cuts the core at about 35°. Note 2 1cm. wide grey quartz, MoS_2 veins, cutting the core at 15°, in the interval 172.0 - 173.0. These are accompanied by 1 cm. thick green selvages.
177.0	216.0	100%	Weakly to moderately altered granodiorite to quartz monzonite porphyry with pervasive, very weak green alteration, abundant tan - pink aplite dykes and a weak stockwork of early potassic veins with traces of MoS_2. The selvages of the early potassic veins in and below this interval are generally pink along the veins and grade into greenish sericitic alteration, 0.5 cm. wide, away from the veins. Less than 5% of the interval has been subjected to intense alteration. Note some quartz, pyrite, K-feldspar and quartz, sphalerite, pyrite, K-feldspar veinlets, cutting the core at 20° - 80°, with green - pink potassic selvages, in the interval 197.0 - 198.0. The dykes that characterize much of the interval are 0.5 to 15 cm. thick, with textures that vary from sucrosic to medium grained with quartz eyes. These dykes predate the veins.
216.0	220.0	100%	Variably altered granodiorite porphyry as above, without dykes. This interval is characterized by 0.2 - 0.3 metre sections with diffuse concentrations of biotite in the granodiorite.
220.0	235.3	100%	Variably altered granodiorite porphyry; generally very weakly altered, with a faint green tint and traces of pyrite. Sparse early potassic veins that cut the core at 35° - 40° contain traces of MoS_2. Several 1 - 2 cm. thick quartz, pyrite veins with weak potassic selvages cut the core at 40°. The interval 225.- 227 is characterized by pervasive weak green sericitic alteration. The interval 234 - 235 shows locally intense, orange - pink potassic alteration that postdates the other vein types.
235.3	236.7	99%	Intensely altered granodiorite. Pervasive light pink potassic alteration along closely spaced early potassic veins 15° - 35° to the core axis, with finely disseminated MoS_2.

TEXASGULF INC. — DRILL HOLE LOG — HOLE NO. K-2-81 — PAGE NO. 5

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
236.7	250.2	100%	Fresh (weakly magnetic), locally intensely altered granodiorite with local compositional variations to quartz diorite. This is cut by numerous 1 - 30 cm. thick aplitic to medium grained dykes at 20° to 30° to the core axis, sparse early potassic veins at 30° to 40°, and later quartz, K-feldspar, pyrite veins at 70° to 75°. The interval 245.3 - 246.5 shows very intense, pervasive potassic alteration along 0.5 -1.0 cm. thick pyrite - quartz veins with disseminated pyrite and traces of MoS_2. Within this intensely altered interval some plagioclase relics are composed largely of clays but most of the rock is pink K-feldspar.
250.2	254.2	97%	Sheared granodiorite and felsite with locally intense, generally moderate to strong pervasive green clay - rich alteration. This alteration is superimposed on a previously developed locally intense deep brown - pink potassic alteration and short intervals of felsite.
254.2	268.0	99%	Granodiorite and quartz monzonite porphyry; locally intensely altered and cut by many 1 - 3 cm. thick brown dykes 45° to subparallel to the core axis. The core is cut by other types of veins and alteration as follows:
			(1) Intense brown - pink, locally pervasive potassic alteration.
			(2) Quartz - K-feldspar veins with pale green sericitic selvages up to 2 cm. thick.
			(3) 0.5 - 1.5 cm. quartz - pyrite - carbonate veins at 45° that cut the dykes.
			(4) A sheared interval 260.4 - 260.8 (sheared slickensides about 45° to the core axis) characterized by very intense pale green alteration imposed on locally well developed quartz veining and potassic feldspathization.
			The interval 261.0 to 264.0 shows a complex, well developed stockwork.
268.0	277.7	100%	Granodiorite porphyry; fresh, weakly magnetic, locally intensely altered (altered intervals constitute less than 5%). This is cut by brown - pink dykes 2 - 10 cm. thick. Contains white quartz veins, locally intense pink potassic alteration and locally intense

TEXASGULF INC.

DRILL HOLE LOG

HOLE NO. K-1-81

DEPTH FROM	DEPTH TO	REC'Y	DESCRIPTION
			propyllitic alteration. The dykes predate all veins and alteration.
277.7	285.1	100%	Quartz diorite with gradational contacts with the granodiorite. Generally fresh and moderately magnetic, richer in biotite than the granodiorite and lacking k-feldspar phenocrysts. This is cut by a tan - pink aplite dyke in the interval 279.1 - 280.0, and numerous 1 - 2 cm. brown - pink dykes, at 30° - 40° to the core axis. This interval is cut by many 0.5 - 1 cm. quartz, carbonate, pyrite veins, 45° to 65° to the core axis, with prominent green sericitic selvages. Individual veins of this type, where traced into the felsic dykes, change markedly in mineralogy: in the felsite they are quartz, k-feldspar veins with pink feldspathic selvages.
285.1	291.0	100%	Granodiorite to quartz monzonite; generally fresh, weakly magnetic. Cut by medium to fine grained brown - pink felsic dykes at 50° to the core axis, and quartz, k-feldspar veins with deep pink potassic selvages.
			291.0 metres: End of Hole

PROFESSIONAL ENGINEER, PROVINCE OF BRITISH COLUMBIA, R. R. PURDIE

APPENDIX 3

Stereographic Plots of Structural Data

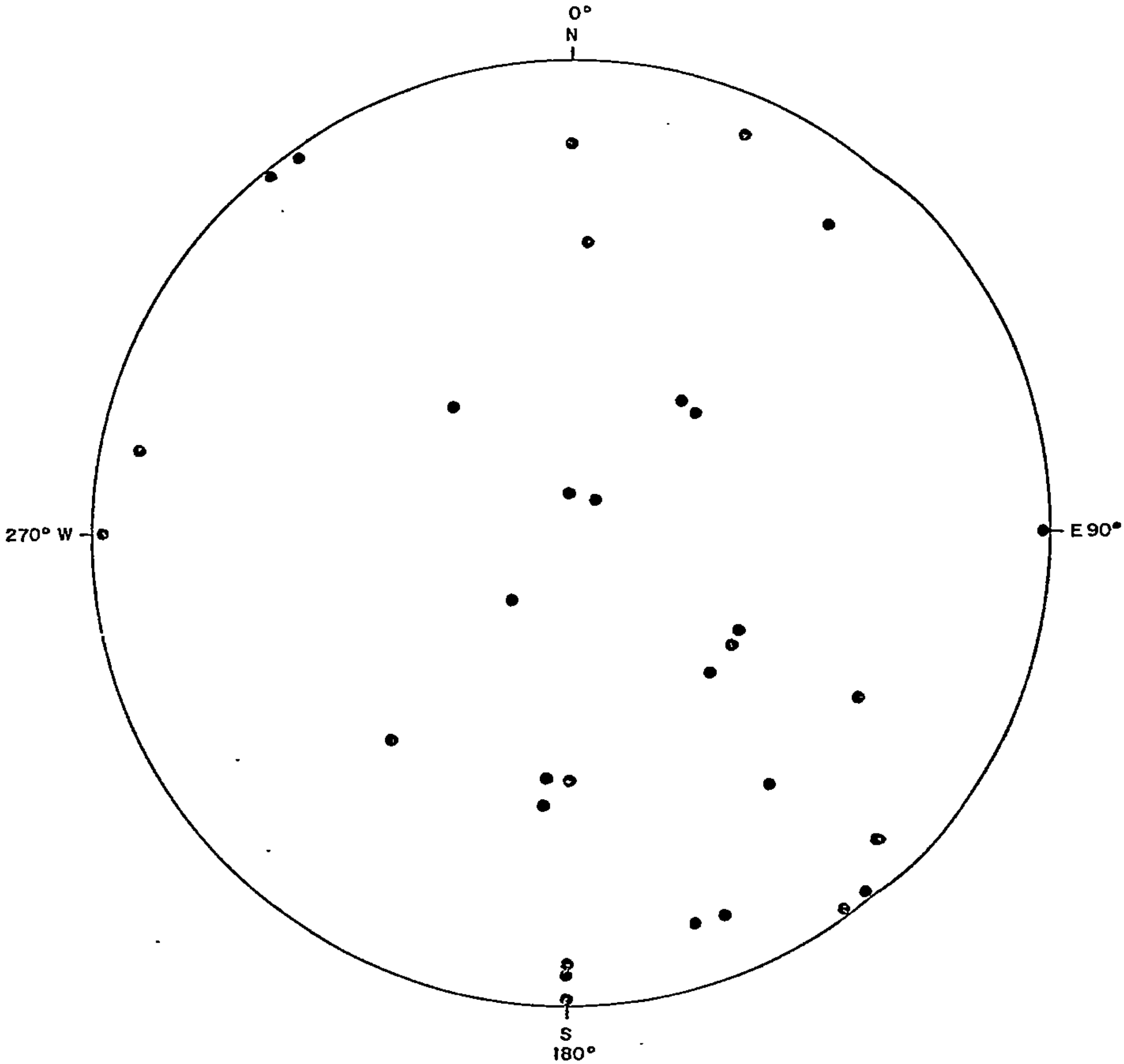


Fig. 3-1 Kisgegas property: stereographic plot of poles to felsic dyke orientations. 32 measurements.

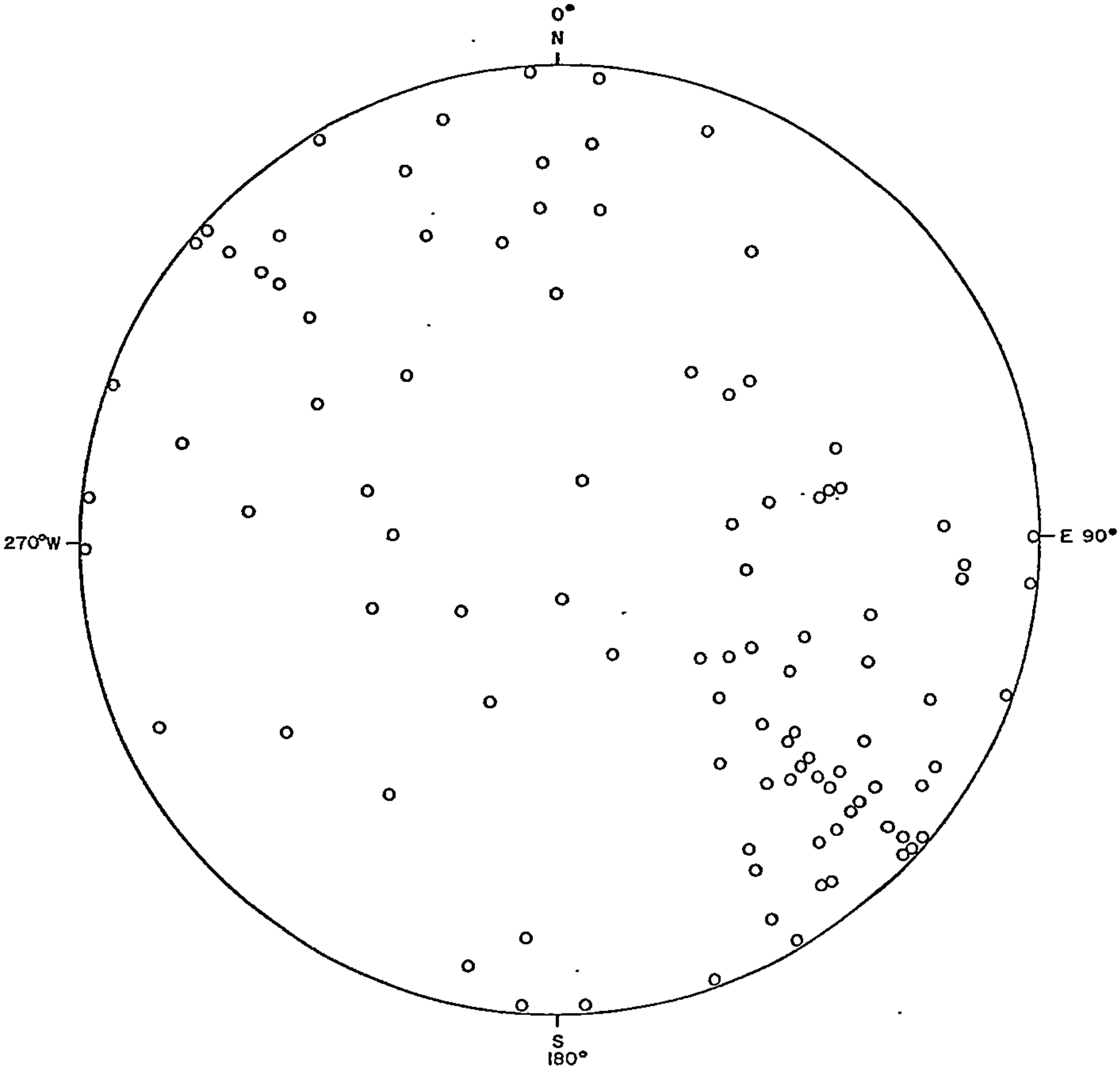


Fig. 3-2 Kisgegas property: stereographic plot of poles to measured early potassic vein orientations. 111 measurements.

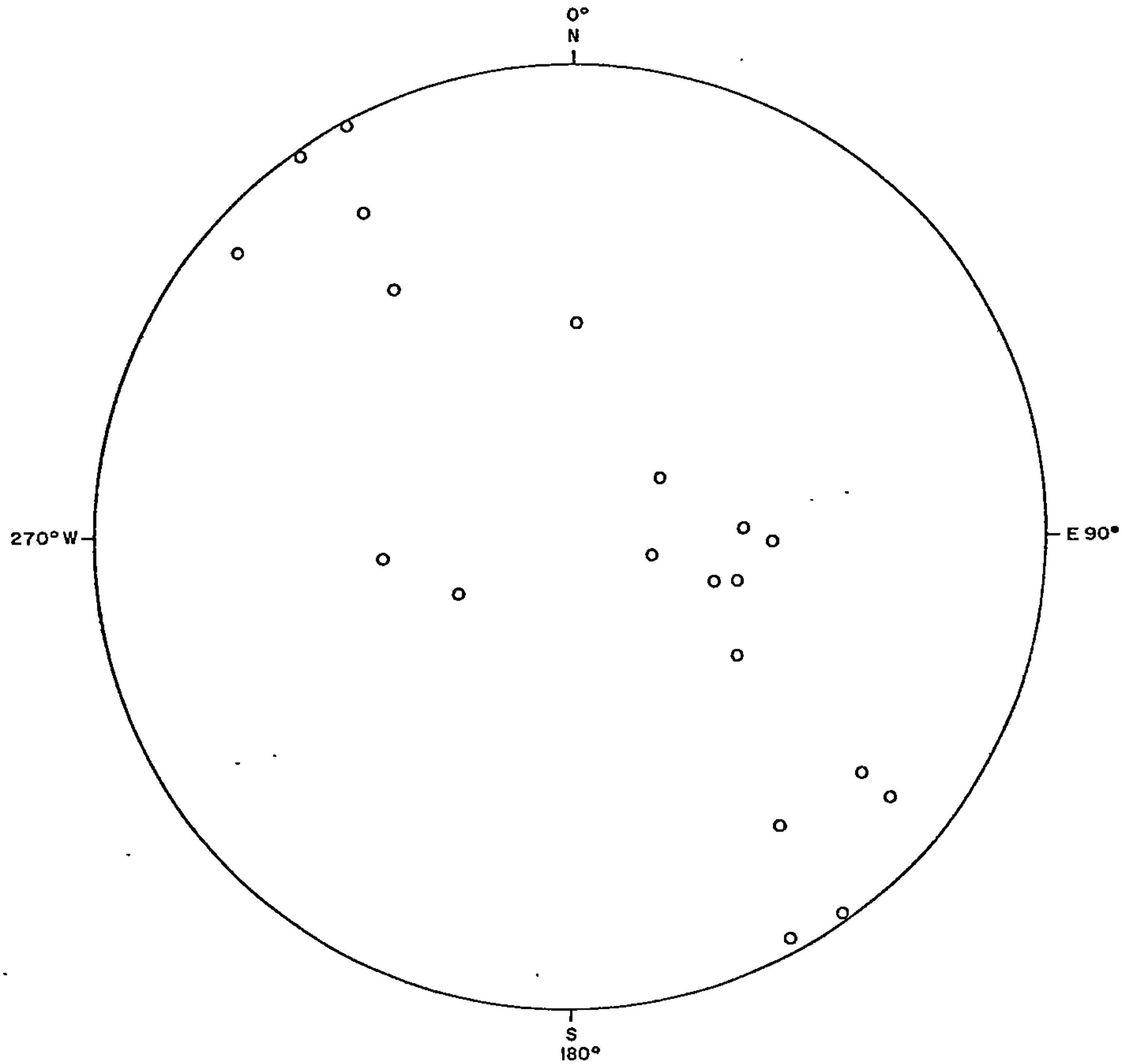


Fig. 3-3 Kisgegas property: stereographic plot of poles to measured grey quartz (MoS_2, $CuFeS_2$, FeS_2) vein orientations. 20 measurements.

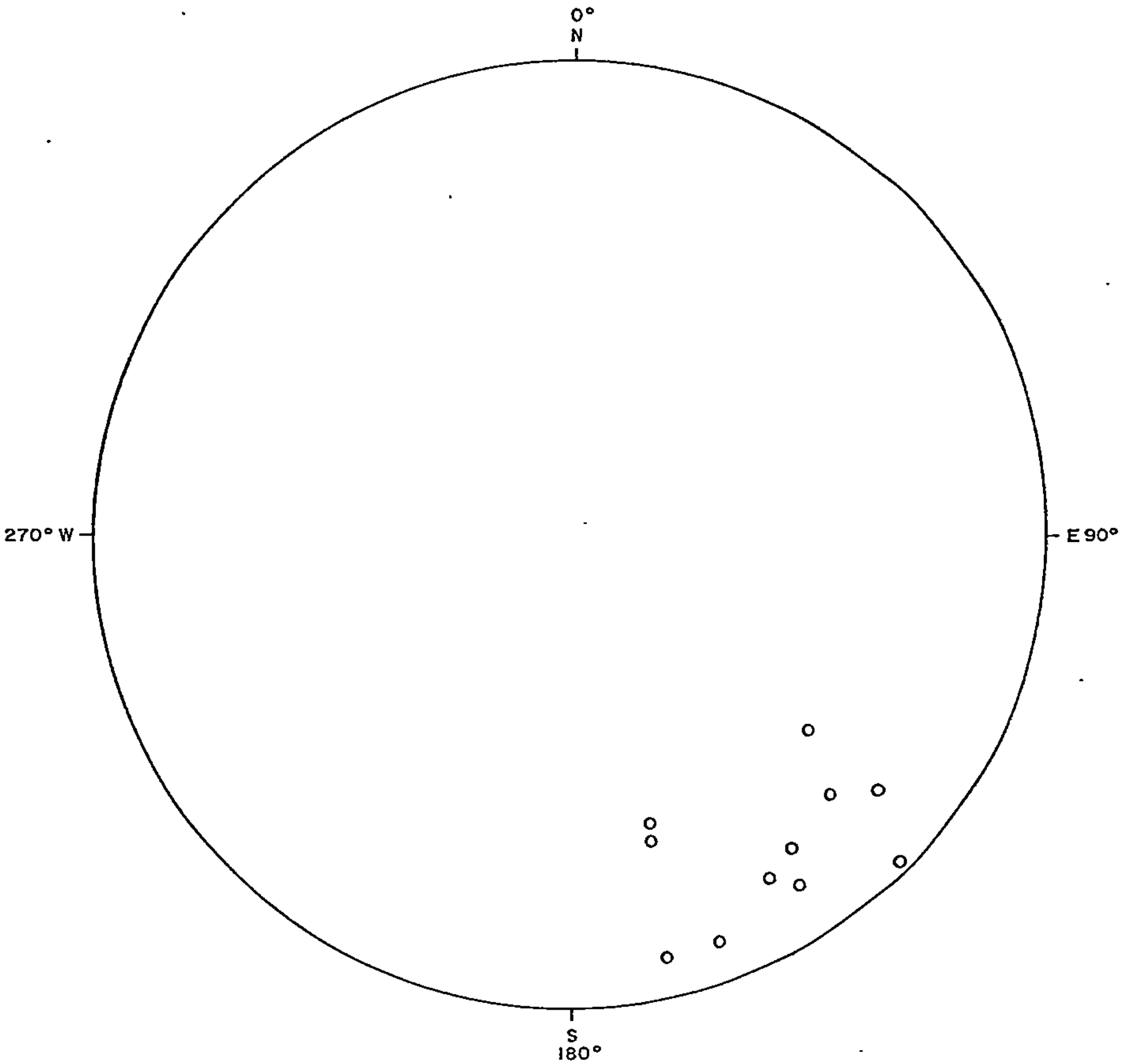


Fig. 3-4 Kisgegas property: stereographic plot of poles to local composites of measurements of sheeted quartz veins. Each point is based on five to ten measurements in a small area. Total 72 measurements.

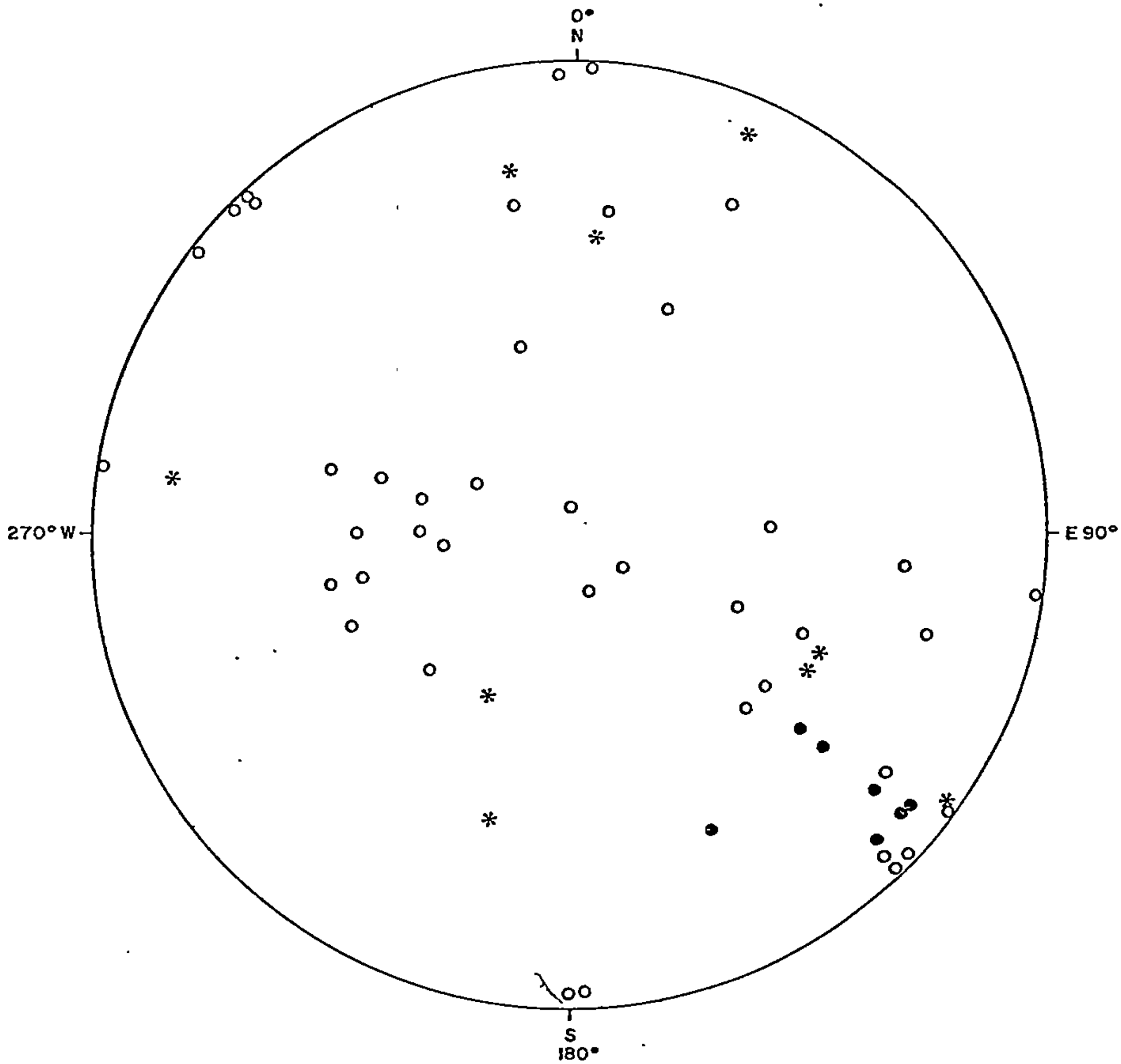


Fig. 3-5 Kisgegas property: sterographic plot of poles to measured orientations of late stage veins.

LEGEND

Quartz, K-feldspar, pyrite veins	o	39 measurements
Large vuggy quartz veins	●	6 measurements
Other late veins	*	10 measurements

APPENDIX 4

Statement of Expenditures

STATEMENT OF EXPENDITURES

KISGEGAS-82 GROUP

SALARIES AND FRINGE BENEFITS - TEXASGULF INC.

G.R. Peatfield - P.Eng. Sept. 10, 11; 2 days @ $220.	$ 440.00	
P.R. DeLancey - P.Eng. Sept. 10, 11; 2 days @ $200.	400.00	
D.A. Bending - Geologist Period Aug.21 - Sept.23; 32 days @ $140.	4,480.00	
E. Potsepp - Cook Period Sept. 19-25; 6 days @ $105.	630.00	
J. Etzkorn - Cook Period Aug.22-Sept.21; 29 days @ $80.	2,320.00	
G. Cooper - Geologist Period Sept.15-25; 9 days @ $95.	855.00	
D. Piroshco - Geologist Period Sept.19-25; 5 days @ $75.	375.00	
P. Mouldey - Assistant Period Aug.21-29; 8 days @ $60.	480.00	
M. Stanley - Assistant Period Aug.21-25; 4 days @ $55.	220.00	
R. Larsen - Assistant Period Sept.13-25; 12 days @ $55.	660.00	
J. Leigh - Assistant Period Sept.11-25; 14 days @ $45.	630.00	
	$11,490.00	$11,490.00

ROOM AND BOARD

Tg Personnel - 123 days @ $90.	$11,070.00	
Longyear personnel - 108 days @ $90.	9,720.00	
	$20,790.00	20,790.00
		$32,280.00

.../2

$32,280.00 (con't)

HELICOPTER SUPPORT

Invoice totals Highland 206 B	$ 7,130.00	
Invoice totals Okanagan 206 B	12,758.61	
206 L-1	13,377.40	
Texasgulf leased A-Star 75 hours @ $550.	41,250.00	
	$74,516.01	$74,516.01

DIAMOND DRILLING

Longyear Canada invoices for drilling, survey, core boxes, supplies and equipment, moving, mob. and demob.	55,623.26	
Rental of Sperry-Sun survey instrument	1,480.50	
	$57,103.76	57,103.76

ANALYTICAL COSTS

224 MoS_2 assays @ $8.00	1,792.00	
224 sample preparation (composite) @ $0.75	168.00	
20 W analyses @ $3.75	75.00	
46 Sn, F, Cu, Mn analyses @ $10.00	460.00	
	$2,495.00	2,495.00

REPORT PREPARATION

G.R. Peatfield, P.Eng. 1/2 day @ $220.	110.00	
D.A. Bending 5 days @ $140.	700.00	
Contract drafting	1,344.82	
Inhouse drafting	300.00	
Secretarial	250.00	
Reproduction, etc.	150.00	
	$2,854.82	2,854.82

MISCELLANEOUS

Office and technical supplies	100.00	
Pro-rated share of travel	640.00	
Shipping and storage	800.00	
Communications (radio, etc.)	1,000.00	
	$2,540.00	2,540.00
		$171,789.59

APPENDIX 5

Statement of Qualifications

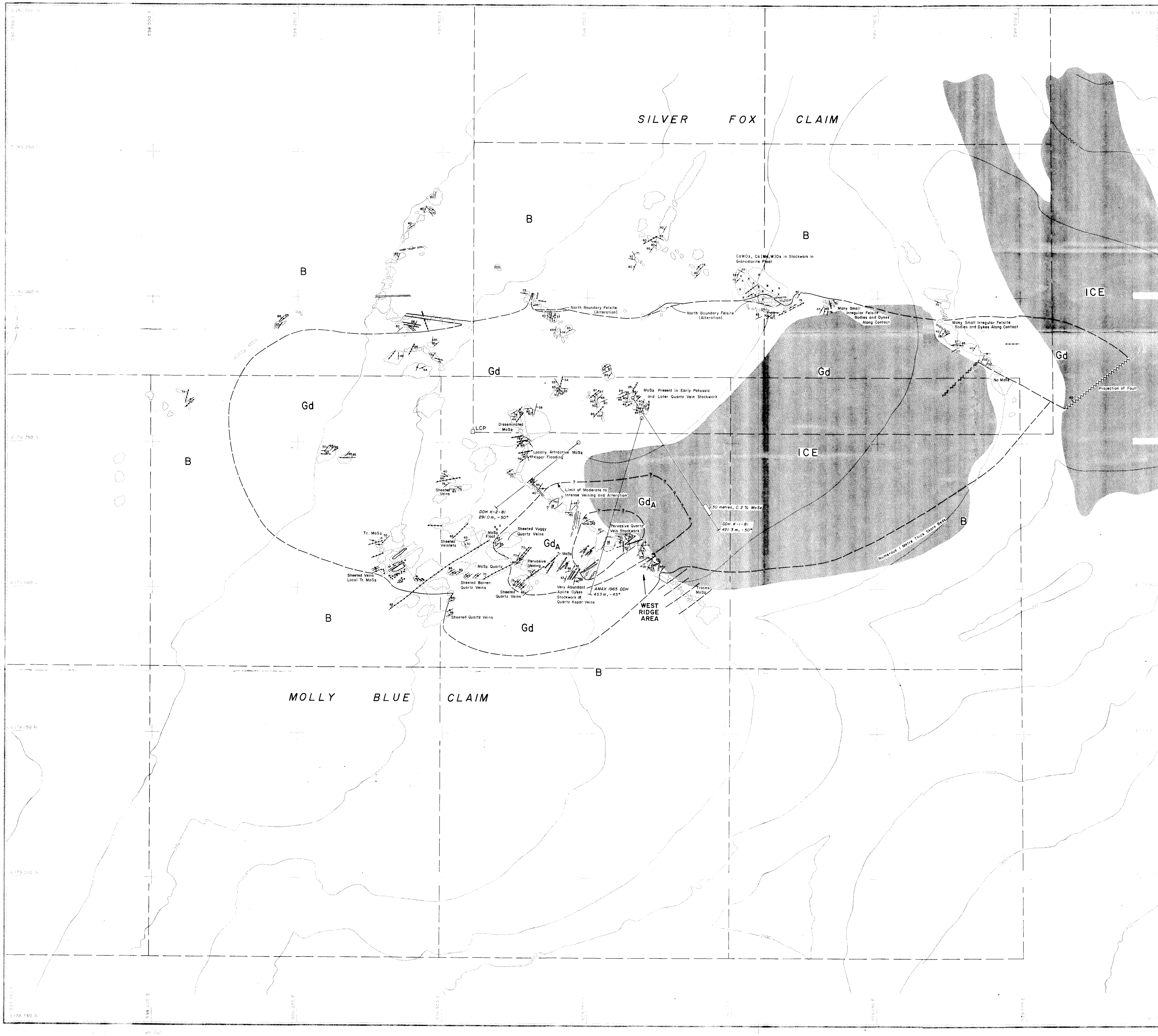
STATEMENT OF QUALIFICATION

D.A. Bending - Geologist

D.A. Bending holds a B.Sc. degree in Geology from the University of Oregon (1976), and is presently completing an M.Sc. degree at the University of Toronto. He was employed by Texasgulf from May 1, 1980 to February 1982, when he returned to the University of Toronto.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
G. R. PEATFIELD

15/04/82



LEGEND

INTRUSIVE ROCKS

CRETACEOUS

BULKELY INTRUSIONS

Im	Intermediate and Mafic Dykes
If	Felsic Dykes
Gd	Granodiorite Porphyry
Gd_A	Granodiorite Porphyry with Moderate to Intense Locally Pervasive Veining and Potassic Alteration

SEDIMENTARY ROCKS (Including Contact Metamorphic Equivalents)

JURA - CRETACEOUS

B	Bowser Lake Group - argillite, greywacke, some limestone

SYMBOLS

- Geological Contact - observed, inferred
- Fault - observed, inferred
- Outcrop
- x Float
- Bedding
- 80 Quartz - Pyrite - Orthoclase (MoS_2) Veins and Fractures with Potassic Selvages
- 80 Grey Quartz - MoS_2 (Pyrite - Chalcopyrite) Veins
- 80 Barren Quartz and Pyrite - Quartz - K-Feldspar Veins
- 80 Large Vuggy Quartz Veins
- 80 Dykes - observed, inferred

Figure 5

Texasgulf Inc.

KISGEGAS

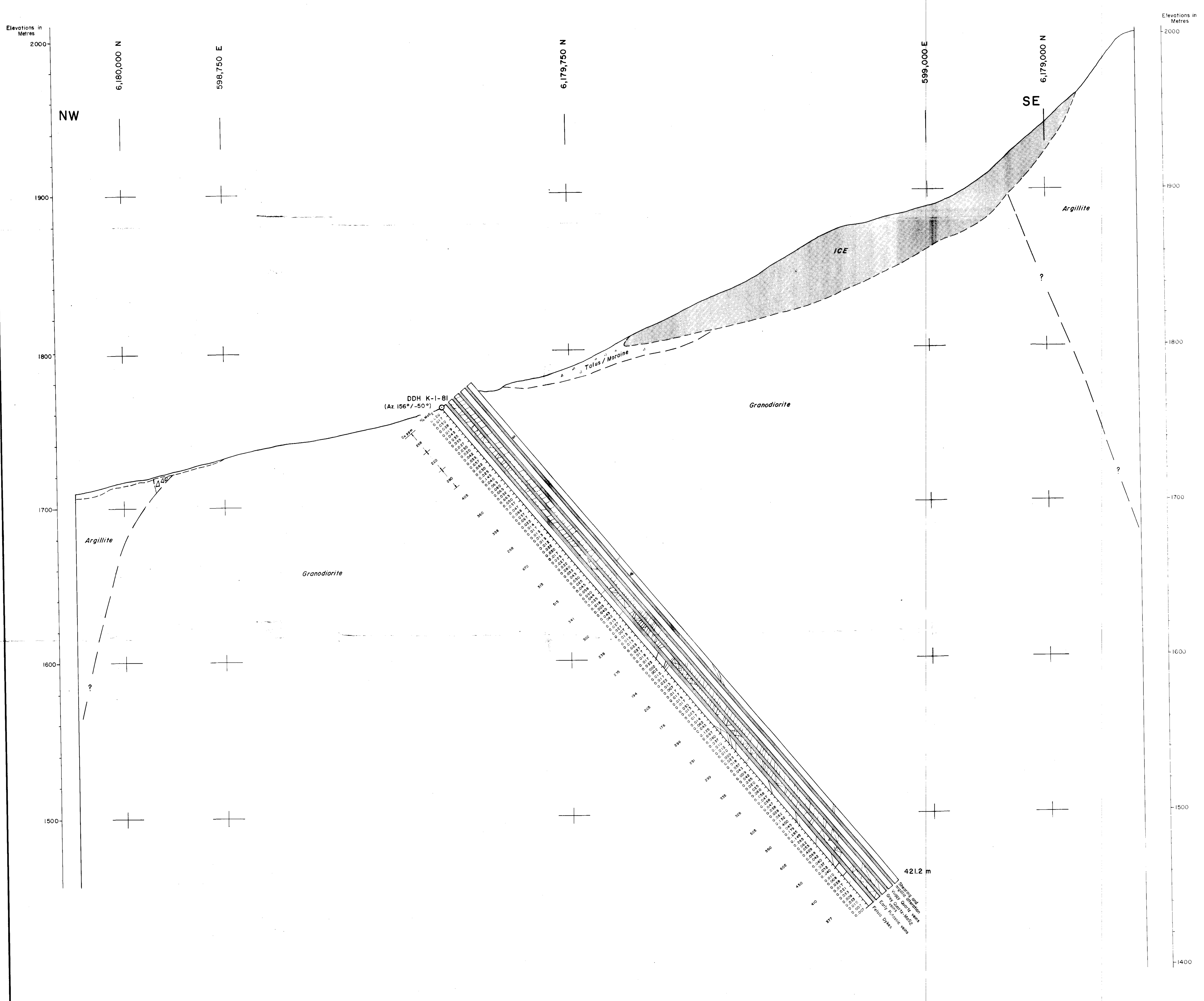
GEOLOGY

WORK BY	DRAWN BY	DATE	DRW,G NO.
D.A.B.		DEC. 1981	

100 50 0 50 100 150

Scale in Metres 1:2500

EXCLUSIVE DRAFTING SERVICES LTD.



10290

Figure 6

Texasgulf Inc.

KISGEGAS Mo(W) PROPERTY

GEOLOGICAL SECTION SHOWING DDH K-1-81

WORK BY	DRAWN	DATE	DWG. NO.
D.A.B.	E.R.	FEBRUARY 3, 1982	

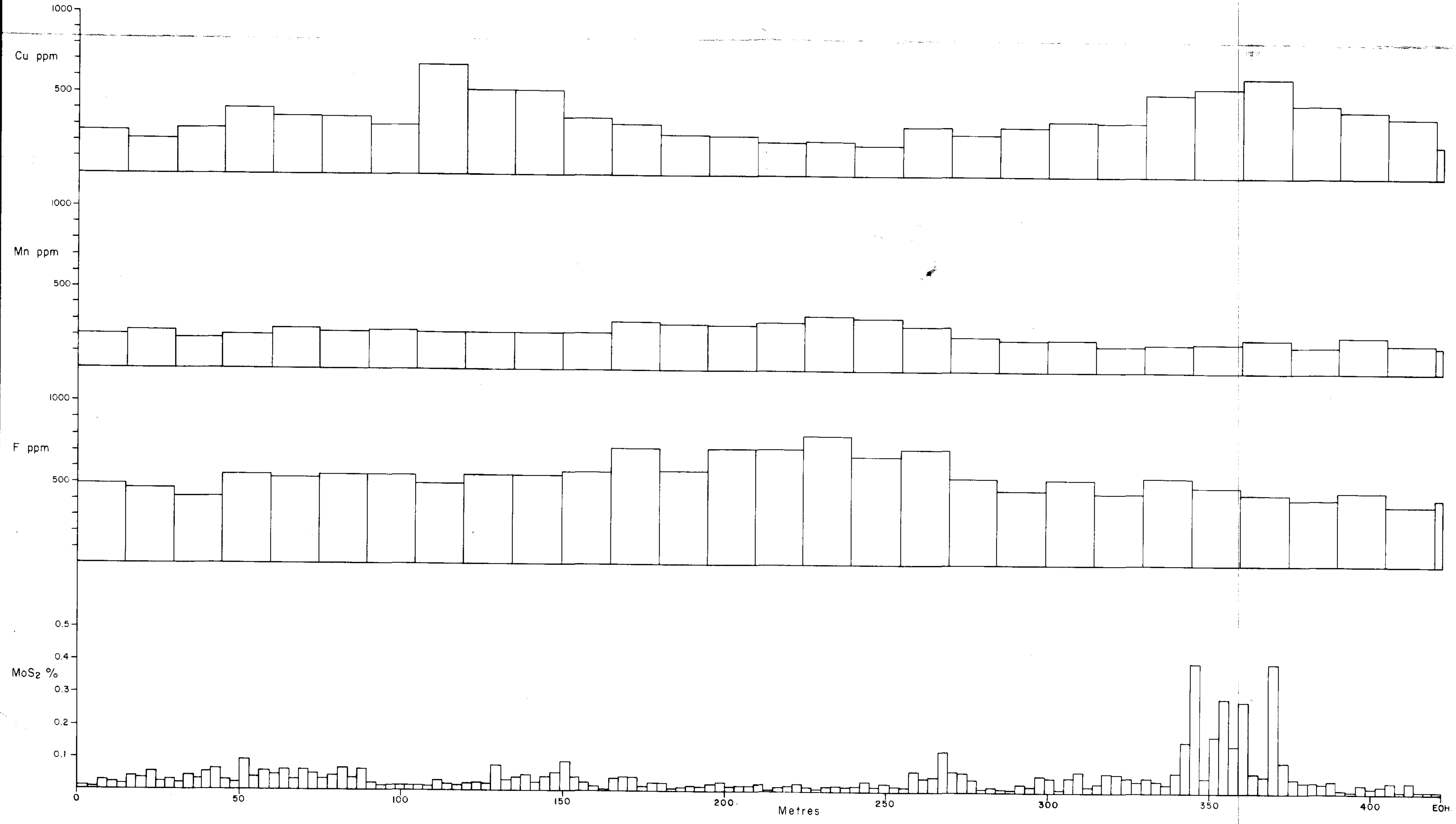


Figure 8

Texasgulf Inc.

KISGEGAS Mo (W) PROSPECT
DDH K-1-81
ASSAYS AND GEOCHEMISTRY

WORK BY	DRAWN BY	DATE	DRW,G NO.
		DEC. 1981	

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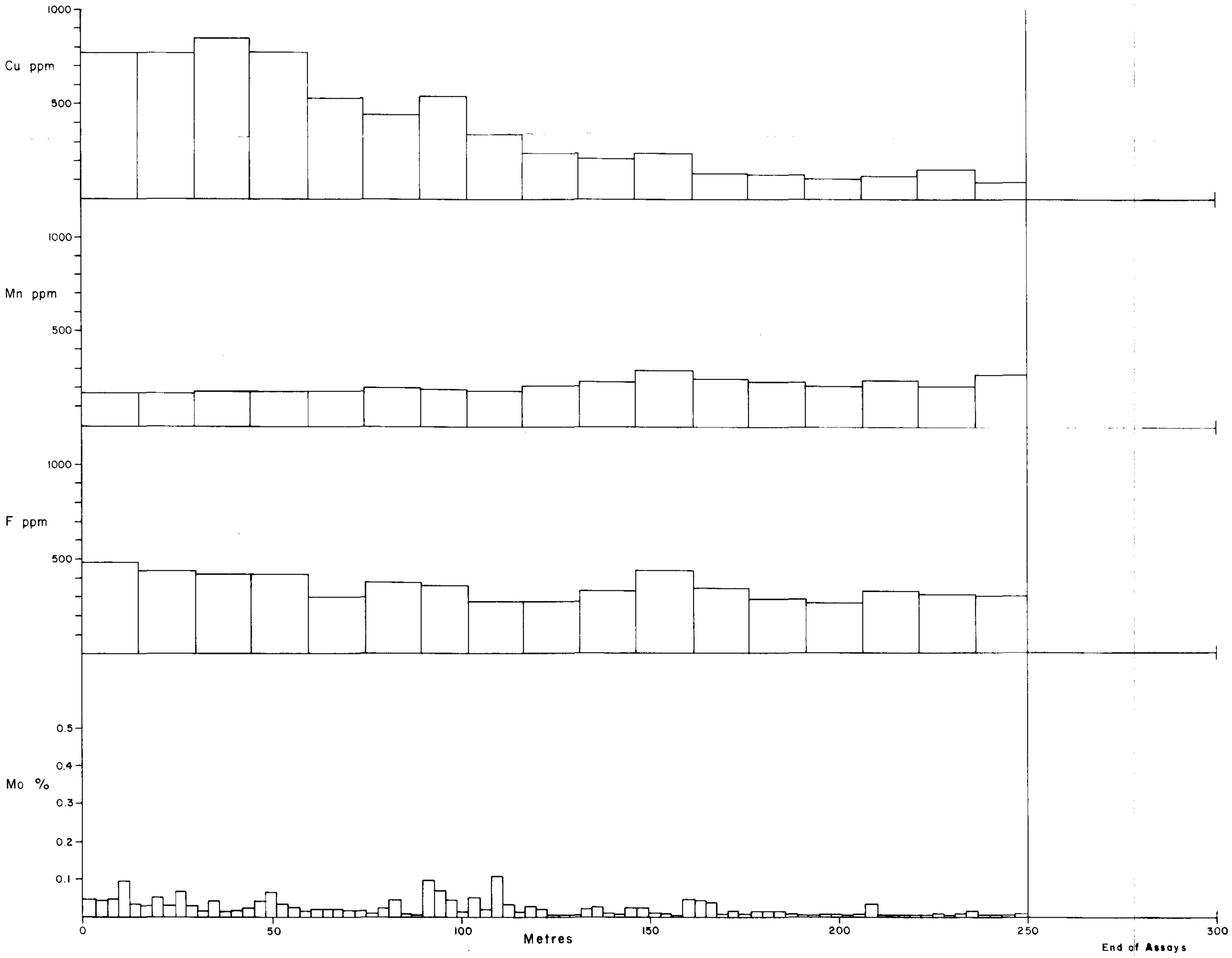
Scale in Metres



10,290

Figure 9

Texasgulf Inc.			
KISGEGAS Mo (W) PROSPECT DDH K-2-81 ASSAYS AND GEOCHEMISTRY			
WORK BY	DRAWN BY	DATE	DRW,G NO.
		DEC 1981	

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Scale in Metres

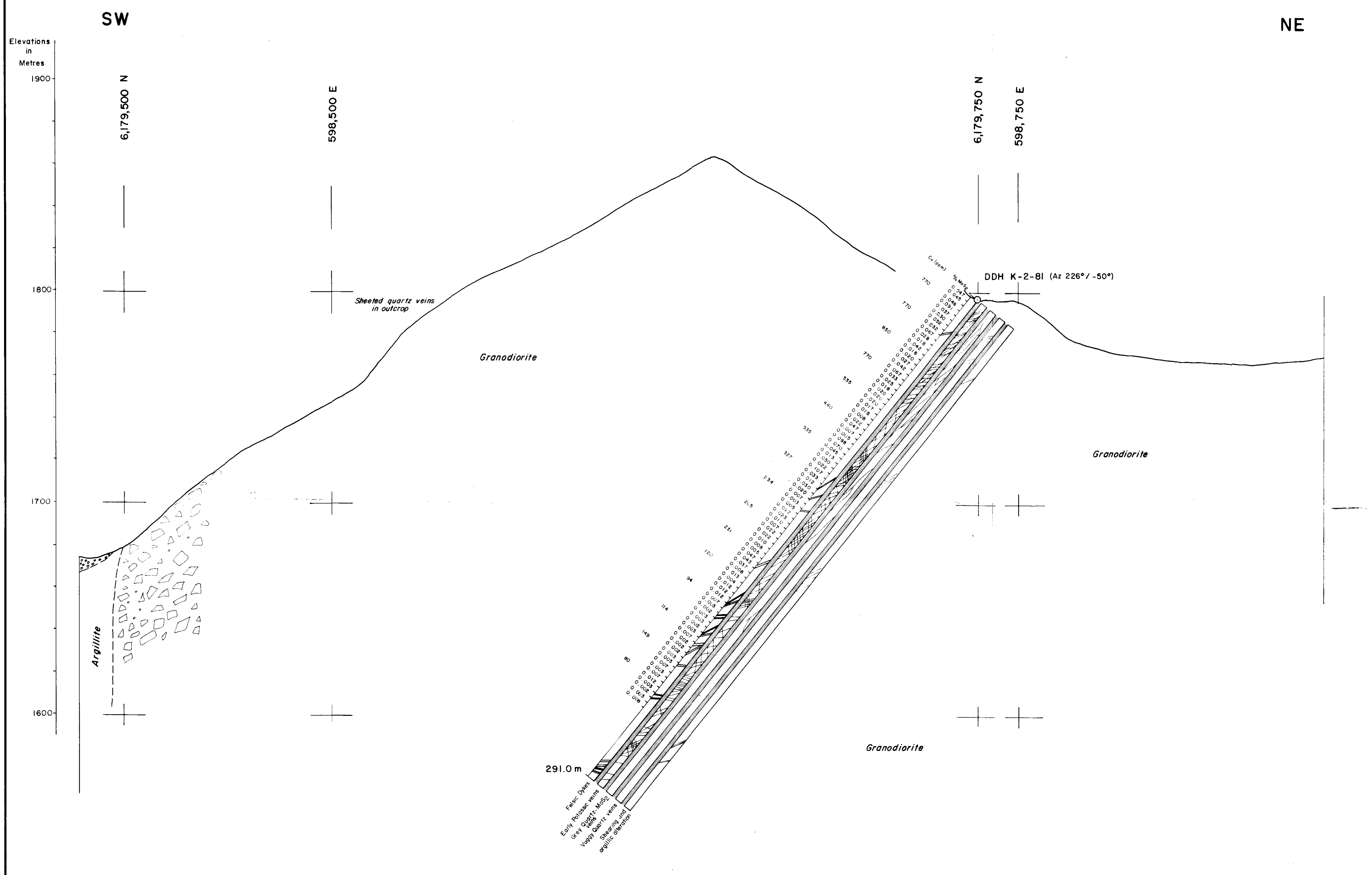

Figure 7

Texasgulf Inc.			
KISGEGAS Mo(W) PROPERTY			
GEOLOGICAL SECTION SHOWING DDH K-2-81			
WORK BY	DRAWN BY	DATE	DRW.G NO.
D.A.B	E.R	FEBRUARY 1, 1982	

20 0 20 40 60 80
SCALE IN METRES 1:1,000