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See maps M1-M7 in flat files

GEOLOGICAL REPORT
ON THE
JESSUP PROPERTY
CHURCHILL COUNTY
NEVADA
FOR
SOUTHWESTERN GOLD CORPORATION

L.D.S. Winter
December 30, 1992

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1. INTRODUCTION

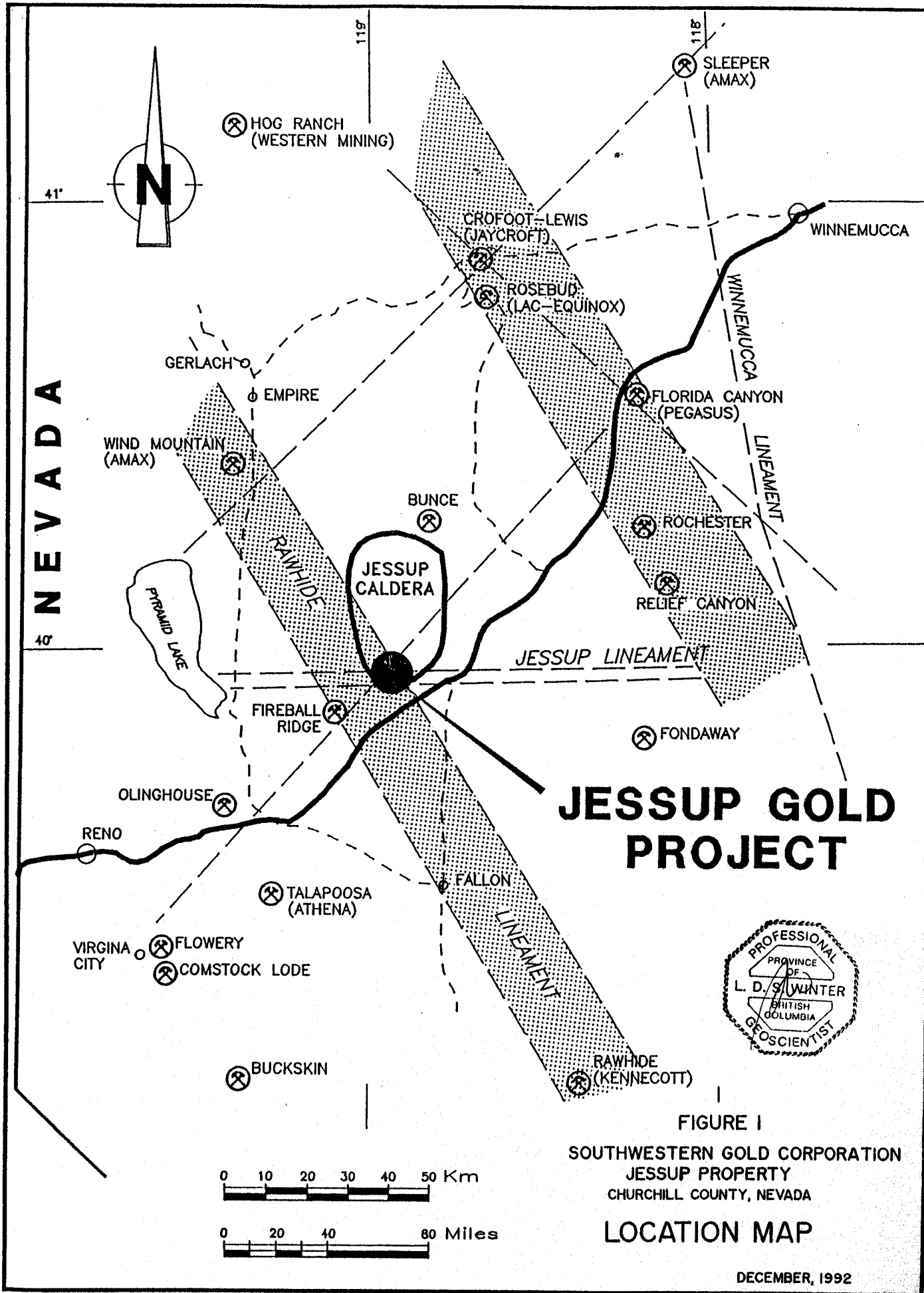
The Jessup property of Southwestern Gold Corporation is located within the Jessup Mining District in the Trinity range of north-central Churchill County, Nevada approximately 100 kilometres northeast of Reno and 40 kilometres southwest of Lovelock, Nevada at 40°N latitude, 119°W longitude (Figure 1).

During 1908 and 1909, the Jessup mining camp was active with production from the Gold King claims amounting to about 1,000 ounces of gold. During a regional reconnaissance programme between November, 1990 and May, 1991, Southwestern Gold Corporation was attracted to the area due to the earlier production, the interpreted presence of a volcanic caldera and the presence of argillic alteration within the volcanics. The presence of anomalous amounts of mercury, antimony and arsenic and generally low base metal levels also were indicative of the presence of an epithermal gold system.

The writer was requested by the company to visit the property and to evaluate its economic potential. The property was visited on October 29, 1992 and the following report presents a summary of the geological data on the property and presents a proposed programme to further evaluate the potential of the claim group.

2. SUMMARY AND RECOMMENDATIONS

The Jessup property area has been evaluated by various groups and organizations over the last 30 years for epithermal gold mineralization of economic significance. This work has illustrated that the property hosts a Tertiary volcanic caldera complex with associated epithermal gold mineralization controlled by faulting along the caldera margin. There is widespread argillic and limonitic alteration with associated silicification



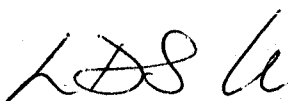

and mineralization. The altered volcanics show the characteristic lithogeochemical signature of anomalous values in mercury, arsenic and antimony.

Six areas of mineralization have been identified by the on-going work and drilling has identified gold mineralization of economic significance in three areas; the San Jacinto Mine, the San Jacinto South and the Central Jessup area.

A mineral inventory for the San Jacinto Mine, San Jacinto South and Central Jessup has been calculated totalling 1,492,000 tons at an average grade of 0.035 ounces/ton gold and 0.37 ounces/ton silver to a maximum depth of 250 feet (76 metres). It is considered that this material could be exploited by open pit mining methods.

Due to the positive results obtained to date and the additional potential of the property, both with regard to the San Jacinto Mine, the San Jacinto South and the Central Jessup areas as well as the three additional zones, a two phase program of on-going exploration is recommended with a total proposed expenditure of \$326,600 (US dollars).

Respectfully submitted,

L.D.S. Winter

B.A.Sc., M.Sc., P.Geo. (B.C.)

December 30, 1992

3. PROPERTY

3.1 PROPERTY DESCRIPTION

Southwestern Gold Corporation has signed a ten-year lease/option agreement covering 91 claims (1,820 acres; 728 hectares) with Mr. A. Von Hafften, San Francisco, California. An additional 36 claims (720 acres; 288 hectares) were staked by the company. A list of the claims is presented in Table 1 and their location is shown in Figure 2. As indicated in Figure 2, alternate sections are held by the Santa Fe Corporation from original railroad land grants.

Table 1
Claim Description
Jessup Property, Churchill County, Nevada

<u>Claim Name</u>	<u>Township</u>	<u>Range</u>	<u>Section</u>	<u>Claim Total</u>	<u>NMC Nos.</u>
Princeton 1-4	24N	28E	18	4	108184-187
San Jacinto #1	24N	28E	20	1	108188
AB-1 - 4	24N	28E	20	4	16476-16479
BO-1 - 8	24N	28E	18	8	16480-16487
Jess-1 - 21	24N	28E	18	21	151860-880
A-3, 4	24N	28E	20	2	151838-839
A-7 - 12	24N	28E	20	6	151840-845
UP-1 - 12	24N	28E	16	12	262380-391
UP-13 - 21	24N	28E	20	9	262392-400
UP-22 - 26	24N	27E	24	5	262401-405
BO-9	24N	28E	18	1	334052
COB-1 - 18	24N	28E	8	18	262659-676
GP-2	24N	27E	14	1	639662
GP-4	24N	27E	14	1	639663
GP-6	24N	27E	14	1	639664
GP-8	24N	27E	14	1	639665

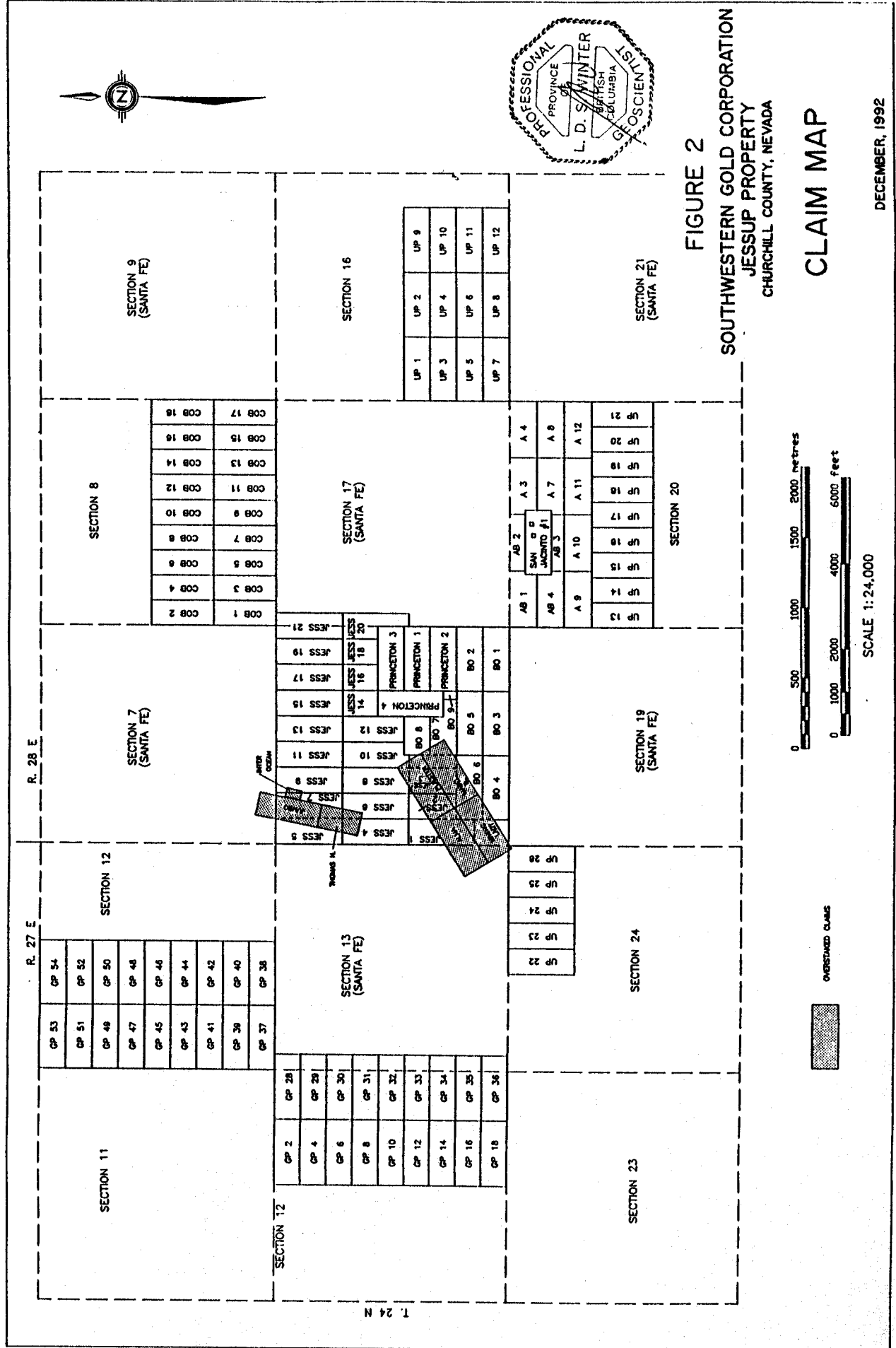
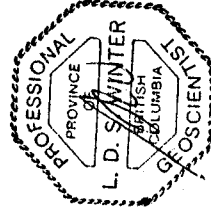


FIGURE 2

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

CLAIM MAP

DECEMBER, 1992



SCALE 1:24,000

OVERSTAKEN CLAIMS



GP-10	24N	27E	14	1	639666
GP-12	24N	27E	14	1	639667
GP-14	24N	27E	14	1	639668
GP-16	24N	27E	14	1	639669
GP-18	24N	27E	14	1	639670
GP-18 - 36	24N	27E	14	9	639671-79
GP-37 - 54	24N	27E	12	<u>18</u>	639680-97

TOTAL 127

3.2 LOCATION AND ACCESS

The Jessup property is located in the Trinity range of north-central Churchill County, Township 24N, Ranges 27E and 28E, Nevada approximately 100 kilometres northeast of Reno and 40 kilometres southwest of Lovelock at 40°N latitude, 119°W longitude. The property is accessible by Interstate 80 to the Jessup interchange and then by a dirt road along the Jessup Wash to the property.

3.3 TOPOGRAPHY AND VEGETATION

The Jessup property is located within the rounded hills of the Trinity range which show a relief in the order of 200 feet (60 metres). The vegetation is typical of the northern Nevada desert and consists mainly of sage brush.

4. PREVIOUS WORK IN THE AREA

In 1908, Frank Jessup and L.H. Murray discovered gold in what came to be called the Jessup Mining District. During that year, several car loads of ore averaging 5 ounces/t were shipped. Mining continued until 1940 on a sporadic basis with overall production being a few thousand ounces.

Throughout the Jessup area (Figure 3), there are numerous shafts and pits however, there are no significant workings. The most extensive underground workings were developed at the San Jacinto Mine where the shaft extends to 200 feet (61 metres) with two (2) levels and four (4) sub-levels developed to access high grade pockets of ore.

During the 1960's and 1970's, Great Basin Exploration carried out work in the area with one shallow rotary drill hole (VDH-1) being drilled in the Central Jessup claims. Also during this time, Simplot Industries of Boise, Idaho excavated a number of trenches on the property.

During 1982, Occidental Petroleum conducted surface sampling and a large scale geological mapping programme which resulted in the drilling of 13 rotary drill holes (J-series) with a cumulative footage of 4,165 feet (1,269.8 metres) in the San Jacinto and Central Jessup areas.

The Cordex Syndicate carried out geological mapping and sampling of the entire district during 1982. Results of this work were encouraging enough to warrant a drilling programme in which 42 vertical and angle holes were drilled (JE-series) for a total footage of 15,655 feet (4,772.9 metres) in the San Jacinto West, San Jacinto, San Jacinto South, Central Jessup, North Jessup, Mining Lady and Tosh Hill areas. Cordex dropped the property in late 1983 following this work.

Santa Fe Pacific Minerals was active in the district during the spring of 1985 at which time they re-mapped the area at a scale of 1 inch to 500 feet and conducted a limited sampling programme. Twenty-three (23) rotary holes were drilled (JSF-series) for a cumulative footage of 8,700 feet (2,652.4 metres). This drilling defined a reported geological resource of 1,000,000

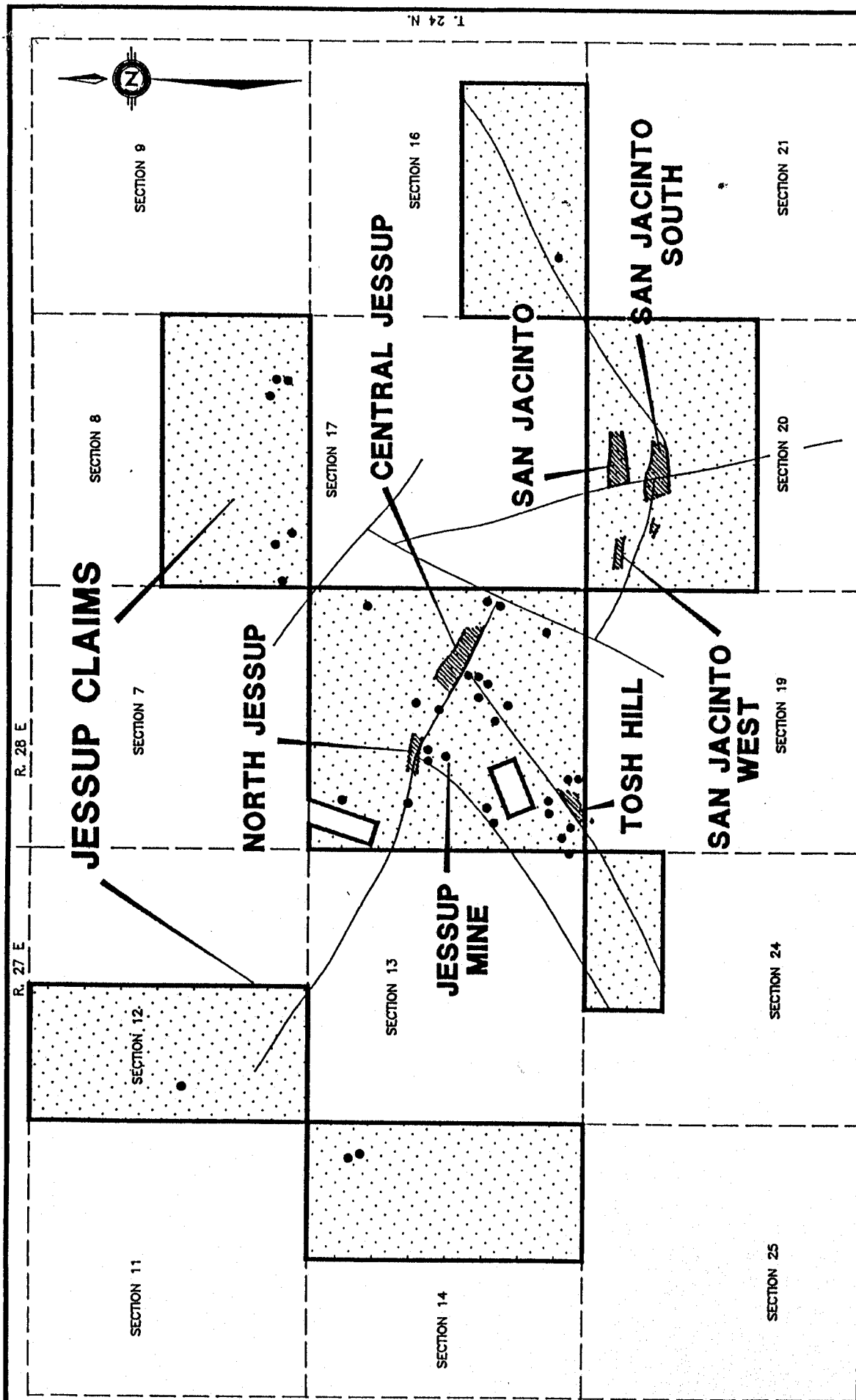


FIGURE 3

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

AREA OF GOLD MINERALIZATION AND WORK

DECEMBER, 1992

LEGEND:

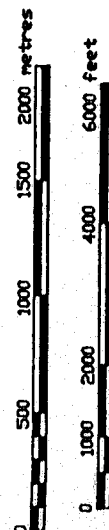
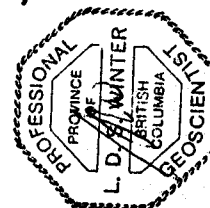


GOLD MINERALIZED ZONE



GOLD SHOWING

MAJOR STRUCTURE



SCALE

tonnes grading 0.31 ounces/t gold with the zone being open in both directions. This is the San Jacinto South Zone of Southwestern Gold Corporation.

During 1988 and 1989, Draco Gold Mines of Tucson, Arizona held a lease on the property however, little work was done. Through a take-over of Draco Mines, Amax Exploration became involved in the property in the spring of 1989 at which time Amax excavated a series of trenches in the San Jacinto and Central Jessup areas and drilled ten (10) reverse circulation angle holes (JS-series) for a cumulative footage of 3,440 feet (1,048.8 metres) in the San Jacinto West and Central Jessup areas. Amax relinquished the property in 1990.

During August, September and November, 1991, a programme of detailed mapping, trenching, rock chip sampling and geophysical surveying was performed on the Jessup property by Southwestern Gold Corporation.

Mapping and trenching outlined five (5) targets within the area;

- the San Jacinto Mine
- San Jacinto West
- San Jacinto South
- the Central Jessup
- the North Jessup

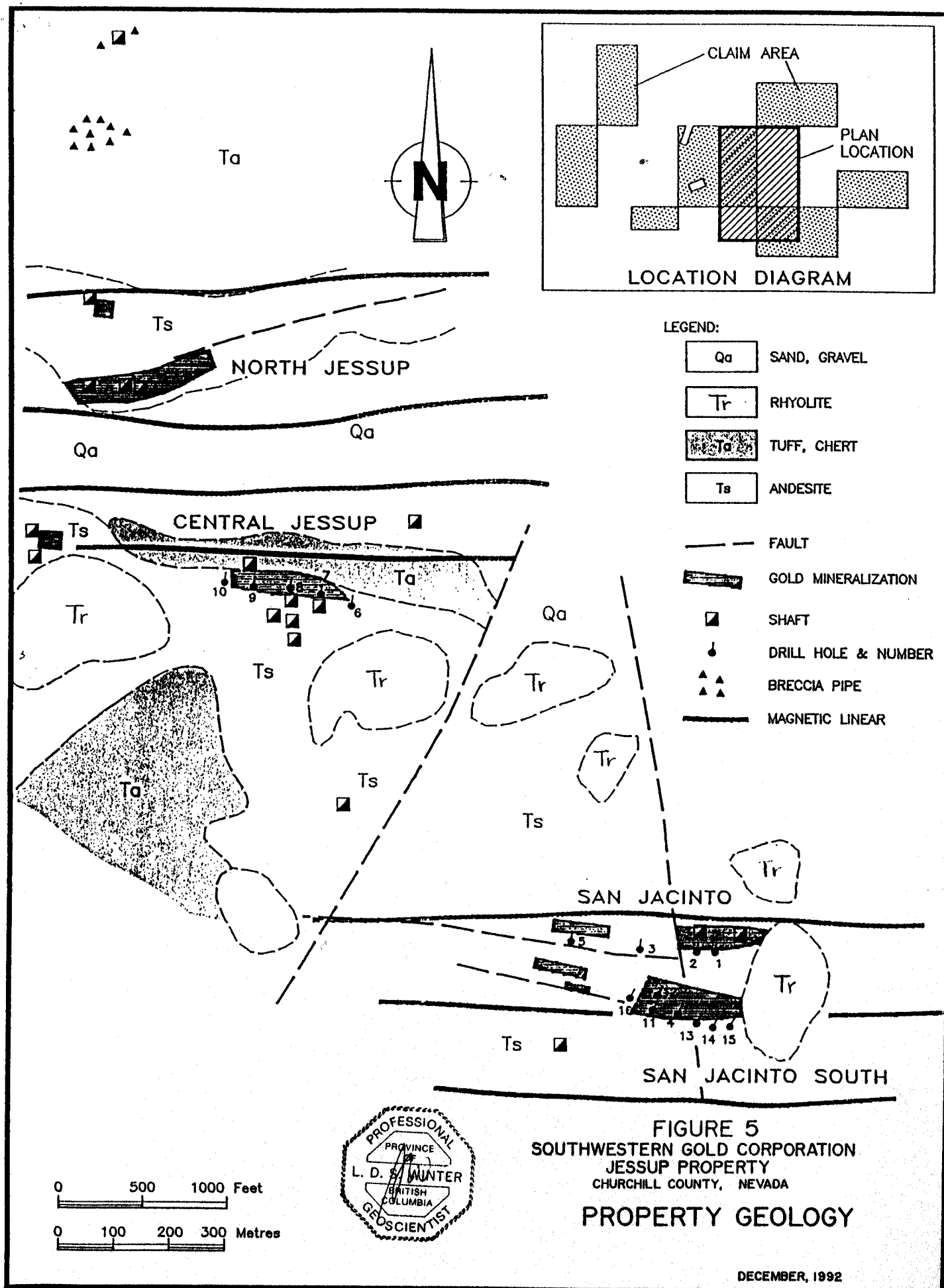
Induced polarization surveys delineated a broad arc-shaped zone of argillic / limonitic alteration within the area.

Although the gold prospects occur within this regional alteration halo, they were not defined at the detail scale by these surveys. A total field magnetic survey in the North Jessup area shows a series of east trending linears which are considered to represent structural / alteration zones (Figure 5).

Trenching by Southwestern Gold Corporation of the Central Jessup mineralized zone indicated an east-west trending zone of mineralization with a minimum width of 100 feet (30.5 metres) and a minimum strike length of approximately 700 feet (213.4 metres). The results of the trenches were;

- 100 feet (30.5 metres) at 0.044 ounces/t gold (perpendicular to strike)
- 120 feet (36.6 metres) at 0.068 ounces/t gold (perpendicular to strike)
- 160 feet (48.8 metres) at 0.17 ounces/t gold (perpendicular to strike)
- 340 feet (103.6 metres) at 0.067 ounces/t gold (parallel to the strike)

In the North Jessup area, surface work identified a quartz-stockwork area approximately 25 feet (7.6 metres) square with assay results of up to 5,399 ppb gold. Within a 15 foot (4.6 metres) intersection in one (1) drill hole, assays of 3,900 ppb gold are reported. Surface mapping in this area, in association with the drilling data, suggests the central portion of the North Jessup area consists of down-dropped blocks of strongly altered sediment and ignimbrite with both low grade blanket-type and higher grade feeder-type mineralization being present.



A preliminary drilling programme was carried out on the Jessup property during the latter part of March, 1992 by Southwestern Gold Corporation to test near surface gold mineralization indicated by trenching. The programme consisted of sixteen (16) reverse circulation percussion holes totalling 3,720 feet (1,134.1 metres). Four (4) separate areas were tested including Central Jessup, San Jacinto West, San Jacinto South and the San Jacinto Mine. The results of this work are presented in section 7.0 Economic Potential.

Preliminary metallurgical test work (bottle roll) on two (2) 110 pound (50 kg) samples indicate that the Jessup mineralization is very amenable to heap-leach extraction of gold (Sorce, 1992).

5. REGIONAL GEOLOGY

The Jessup property is located within the Basin and Range province of the western United States which has undergone a complex geological history culminating in widespread Tertiary magmatic/tectonic activity with associated epithermal gold deposits. These events which are summarized below have resulted in the current geological situation which is shown in Figure 4-Regional Geology.

During the Paleozoic, there was a stable continental shelf which ran northeasterly across what is today the Nevada-Utah border. From east to west along the continental margin platform, transitional and deep-water sediments were deposited. Subsequently, west to east thrusting of the deep-water sediments took place over the shallow water facies during the late Devonian to early Mississippian Antlerian orogeny which led to crustal thickening along the Roberts thrust.

LEGEND (FIGURE 4)

Quaternary 6.0 - 0. m.y.

Qa	Alluvial deposits
Qp	Playa, marsh and alluvial-- flat deposits
Qls	Landslide deposits
QTa	Andesite flows and breccias
QTb	Basalt flows
QToa	Older alluvial deposits

Tertiary 43.0 - 6.0 m.y.

Tri	Rhyolitic intrusive rocks
Tmi	Intrusive rocks of mafic and intermediate composition
Tt3	Welded and non-welded silicic ash-flow tuffs
Trt	Ash-flow tuffs, rhyolitic flows and shallow intrusives
Tr3	Rhyolite flows and shallow intrusive rocks
Ta3	Andesite and related flows and breccias
Tba	Andesite and basalt flows
Tts	Ash-flow tuffs and tuffaceous sediments
Tt2	Welded and non-welded silicic ash-flow tuffs
Ta1	Andesite and related flows and breccias

Cretaceous

Kgr	Granitic rocks; quartz monzonite and granodiorite
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Jurassic and Triassic

Jgb	Gabbroic complex
JR s	Shale, mudstone, siltstone, sandstone and carbonate rocks
JR sv	Shale, sandstone, volcanogenic clastic rocks, andesite rhyolite and carbonate units
R c	Limestone, minor dolomite, shale, sandstone and conglomerates

Mesozoic Granitic Rocks

Mzgr	Granitic rocks; quartz monzonite and granodiorite
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As a result of the Antlerian orogeny the depositional patterns in the area were changed with a broad highland being created along the approximate position of the Roberts thrust. Clastic sediments were developed to the east which in turn were fringed by carbonates still further east. On the western side of the highland, siliceous sediments (chert) and volcanic rocks were deposited. This pattern continued through Mississippian-Pennsylvanian and Permian times.

Through Permian and Triassic times, a major orogeny, the Sonoma, consisting of east-directed folding and thrusting resulted in the placement of the Golcoanda - allochthon onto the more easterly units. Continued uplift in the vicinity of the Antlerian highland led to the deposition of shallow water clastics and carbonates east and west of the highland and volcanogenic sediments on the western side. In the Sierra Nevada, plutonic rocks were emplaced near the California and Nevada border and along the Walker Lake belt during the Triassic and Jurassic periods.

During the Jurassic, a series of complex post-Sonoma folds and thrusts were developed in two (2) north trending belts. The Walker Lake belt, a zone of northwest trending strike-slip faulting and folding, was also active at this time.

During the Cretaceous, large scale magmatism initiated during the Triassic reached a peak with the emplacement of the Sierra Nevada batholith and a series of plutonic rocks throughout Nevada. The porphyry-copper, gold skarn and base metal skarn deposits of the Ely District were formed at this time. Some continental clastic sediments were deposited in the vicinity of the central highland during the Cretaceous however, the sedimentary rock record for this period is very minimal.

During the Tertiary there was a fundamental change in the geological history of the Basin and Range province. Since that time, the area has been the site of crustal extension with associated volcanism and the intrusion of small to medium sized stocks. The Basin and Range Tertiary volcanism has occurred during four (4) main intervals.

- 43 to 34 million years; andesitic and rhyolitic lavas
- 34 to 17 million years; large volumes of silicic ash flow tuffs with small volumes of felsic to intermediate lava
- 17 to 6 million years; characterized by mafic to felsic ash flow tuffs and medium to small stocks of various compositions
- 6 million years ago to the present; waning volcanic activity predominantly of basaltic composition. At the present time, there are a number of geothermal areas within the state.

6. PROPERTY GEOLOGY

The oldest recognized rocks within the region are Triassic/Jurassic basalts which have been metamorphosed to upper greenschist/lower amphibolite facies. Unconformably overlying the basement rocks are a series of Tertiary volcanic and sedimentary rocks which appear to be caldera related. The volcanic members of this package range in composition between andesite and rhyolite (Cannuli & Paterson, 1992; Figures 5 and 6).

Tertiary magmatism was initiated by the outpouring of

sub-aerial andesites characterized by fine-grained to porphyritic flows occasionally with pillows and flow-top breccias. This unit is estimated to be in the order of a few hundred metres thick. Andesitic volcanism terminated with the collapse of the central portions of the area and the formation of a large caldera. The caldera collapse was controlled by a series of ring fractures which appear to give the present shape of the feature. Erosion of the andesites in the northern part of the caldera produced thin layers of andesitic sands and conglomerates which are preserved in isolated areas throughout the area. As subsidence continued in the central portions of the caldera, fine-grained clastics and pyritiferous cherts were deposited in lakes. These quiet conditions were periodically punctuated by the deposition of thin ignimbritic beds, consisting of rhyolitic lapilli tuff.

Rhyolitic ignimbritic volcanism culminated in the deposition of a thick sequence of coarse lapilli tuff, the thickest in the San Jacinto/Central Jessup portions of the area. The eastern portions of the area remained topographically depressed with lacustrine sedimentation continuing. At San Jacinto, rhyolite ash flow tuffs were deposited over the lapilli tuffs whereas in the Central Jessup area lacustrine conditions again prevailed.

A return to andesitic volcanism was initiated by the deposition of andesitic flows and sills in the southern portion of the area. These flows were accompanied by local erosion of the pile with deposition of andesitic clastics and minor tuff.

Re-collapse of the caldera occurred along the ring fracture system during the final stages of the caldera's history with rhyolitic flows, domes and dykes being emplaced along the structures.

The Tertiary period was terminated by uplift and the accumulation of alluvial deposits. Olivine basalts were also deposited during the Quaternary.

The structural deformation in the Jessup property area appears to have been episodic and mainly controlled by the caldera related structures, which typically are normal faults distributed along a radial system of ring fractures. During the early stages of caldera collapse, the shape of the basin and the distribution of basin-fill deposits within the caldera was mainly controlled by these faults. After lithification of the basin-fill material these same structures were active over a long period of time with some of them showing at least three periods of movement.

Regional alteration patterns in the area are typical of volcanic hosted epithermal environments. The alteration consists of blanket argillic bleaching and limonitic (pyritic at depth) disseminations along a broad arc across the district. The argillic alteration is geophysically characterized by resistivity lows, the limonitic by chargeability highs. All of the known gold prospects occur within this regional alteration pattern which is partly controlled by reactivated caldera structures and partly by the inherent permeability of the rock units. The lapilli tuffs appear to be the most permeable while the andesites and siltstones are less so.

The argillic, limonitic and silicic alteration is post-rhyolite since all of the intrusives are to some extent argillized and some contain mineralized quartz veins.

Gold occurrences in the Jessup district are of two (2) types; sub-vertical quartz-breccia veins and disseminated quartz stockworks.

7. ECONOMIC POTENTIAL

In 1933, Lindgren in his classic work Mineral Deposits (Lindgren, 1933) introduced the term epithermal to describe mineralization formed by hot ascending waters of uncertain origins but charged with igneous emanations that resulted in the deposition and concentration of ore minerals at a slight depth and relatively low temperatures. Lindgren also noted that epithermal deposits were strikingly similar to those of hot springs. Subsequently, epithermal gold deposits have come to be recognized as those that commonly occur in volcanic rocks which are usually tuffs and fragmentals about the same age as the mineral deposits suggesting that the processes are all part of the same mechanism. The mineralization is usually controlled by sub-vertical, extensional faults, as well as the permeability of the volcanic units. As a result, mineralization tends to have a blanket or horizontal character as well as a structurally controlled vertical character. High grade Bonanza-type mineralization is common in these deposits and it is this type of mineralization which supported much of the earlier mining in Nevada. Characteristically the Bonanza ores are surrounded by a low grade envelope with strong horizontal permeability control (Romberger, 1988, 1992).

There is a widespread alteration halo associated with these deposits with the host rocks being strongly silicified with quartz, chalcedony, opal and jasper. Brecciation as a result of multiple hydrothermal events is common and they are often enveloped by a broad zone of argillic alteration. Sulphides range from absent to moderate and consist when present, of disseminations of pyrite.

The characteristic epithermal lithogeochemical signature consists of mercury, arsenic, antimony and barium. The deposits

are moderately to strongly zoned with the gold - silver ratio decreasing with depth. A mercury rich zone, with or without gold, is often typical of the uppermost portions of these deposits. The evidence suggests that they have formed within a few hundred metres of the paleo-surface in areas of ascending hydrothermal fluids where there is maximum mixing with meteoric water.

These deposits are distributed throughout the Basin and Range province with some showing well developed regional trends while others show no apparent control on their localization. The ages of the deposits range throughout the Tertiary with a strong grouping in the 20 to 6 million year interval. Volcanic hosted deposits typically contain 100,000 to 500,000 ounces of gold however, some contain in excess of 1,000,000 ounces of gold such as Round Mountain (8.4 million ounces) and Sleeper (1.9 million ounces) (Nevada Bureau of Mines and Geology, 1991).

The Jessup property is situated on the southern rim of a Tertiary volcanic caldera. The volcanics show structurally and lithologically controlled argillization and limonitic and/or pyritic alteration associated with zones of intense silicification and gold mineralization. Associated with the gold mineralization are arsenic, antimony and mercury and significant silver values. It is considered that this environment and the associated features are typical of volcanic hosted epithermal gold mineralization. To date, six areas of potential have been identified on the property;

- 1) San Jacinto Mine area
- 2) San Jacinto West area
- 3) San Jacinto South area
- 4) Central Jessup area
- 5) North Jessup area and

6) Mining Lady/Tosh Hill area

These areas are discussed individually in the following sections.

7.1 THE SAN JACINTO MINE AREA

The San Jacinto area (Figure 6) is underlain by lacustrine sediments, lapilli tuff and ash flow tuff with one small andesitic sill which intrudes the sediment/ignimbrite sequence at San Jacinto West. The volcano-sedimentary package is progressively down-faulted to the south along a series of normal faults, the San Jacinto fault zone, along which rhyolite dykes and flow domes are located. The rhyolites were fractured and brecciated during re-activation of the same structures.

There is pervasive argillic alteration in the area which is characterized geophysically by a resistivity low. Drilling and surface work indicate that the alteration is mainly confined to the lapilli tuff horizon and to a lesser extent the lacustrine sediments. The ash flow tuffs are generally unaltered.

The San Jacinto Mine produced an unknown quantity of gold ore from a limited amount of sub-surface development. The mineralized zone occurs in a west-trending sub-vertical zone of hydrothermal alteration consisting of silicification and argillization.

In 1981, Occidental Minerals carried out sampling of the San Jacinto Mine workings and compiled the data. This work indicated that early mining was confined to the area immediately adjacent to the main shaft and that miners extracted gold from narrow zones in the vicinity of the decline. The sampling by Occidental Petroleum indicated substantial areas assaying greater

EXPLANATION

GEOLOGY

QUATERNARY

Qal Unconsolidated sands & gravels

Qb Black olivine basalt

TQs Grits & conglomerate

Tr Rhyolite

Tsl₂ Andesitic sediments, upper unit;
siltstone & tuff

Ta₂ Andesite, upper unit

Tt₂ Ash flow tuff

Tsm₂ Lacustrine sediments, upper unit; siltstone,
fresh water chert & minor tuff

Tt₁ Lapilli tuff

Tsm₁ Lacustrine sediments, lower unit; siltstones
& fresh-water chert

Tsl₁ Andesitic sediments, lower unit; sands,
minor conglomerate

Ta₁ Andesite, lower unit

TRIASSIC/JURASSIC

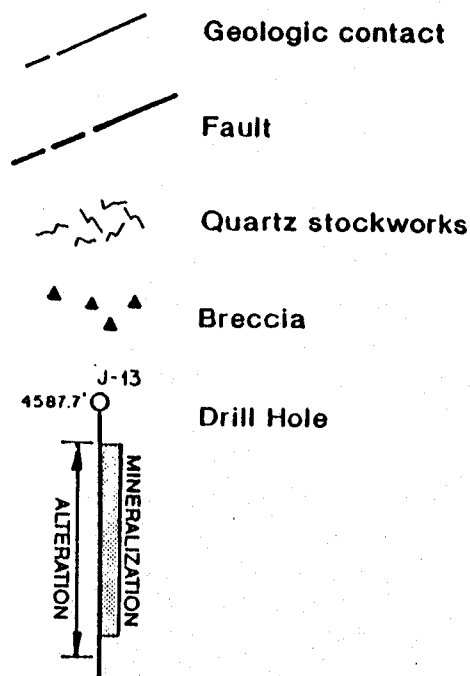
JF Metavolcanics

DRILL HOLE SYMBOLS

SWD Southwestern Gold Corp.
JSF Santa Fe Mining
J Oxymin
JE Cordex Syndicate

FOR FIGURES 6 - 18

SYMBOLS



than 0.1 ounces/t gold (Figure 7).

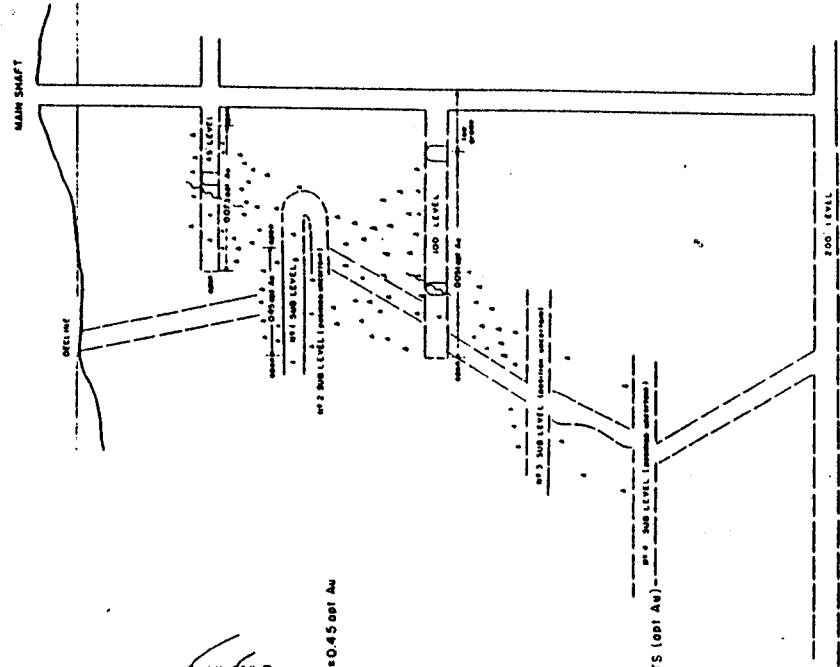
It is difficult to establish continuity between the high grade zones however, it appears that there may be a large volume of material with an average grade between .03 and 0.1 ounces/t gold within the area of the old workings. For example, on the 100 ft. level and the #3 and #4 sub-levels there are widths of gold-bearing zone over 44 feet (13.4 metres) wide, averaging 0.051, 0.096 and 0.041 ounces/t respectively. The Occidental sampling in conjunction with drill holes SWD-1 and SWD-2 suggests mineralized widths in excess of 100 feet (30.5 metres) are possible (Figure 8).

Southwest Gold Corporation drilled two holes, SWD-1 and SWD-2, at -60° at an azimuth of 030° to intersect this zone of mineralization and the San Jacinto fault zone.

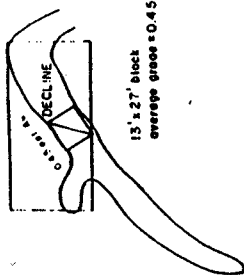
The writer has compiled the results of the assaying and sampling from drill holes SWD-1, SWD-2, surface trenching and the reported data from sampling of the main shaft as illustrated in Figures 8, 9 and 10. It appears that the gold mineralization occurs in an approximately east-trending zone associated with the San Jacinto fault structure. Within this zone, gold mineralization is considered to be present in steeply dipping structures (faults) with gold within these zones associated with extensive silicification. In addition to the gold mineralization in the sub-vertical structures, there appears to be a broad zone of gold enrichment associated with argillic alteration and silicification controlled by fracturing and/or the permeability of the volcanic units. In Figure 8, drill hole SWD-1 shows a width of this mineralization in the order of 120 feet (36.6 metres) with the zone dipping to the south.

This work suggests the potential for zones in the order

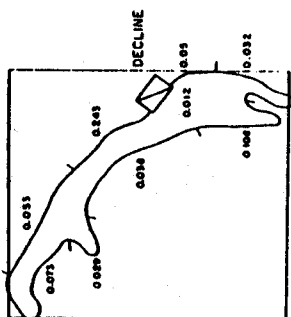
WEST EAST



Nº 1 SUB LEVEL

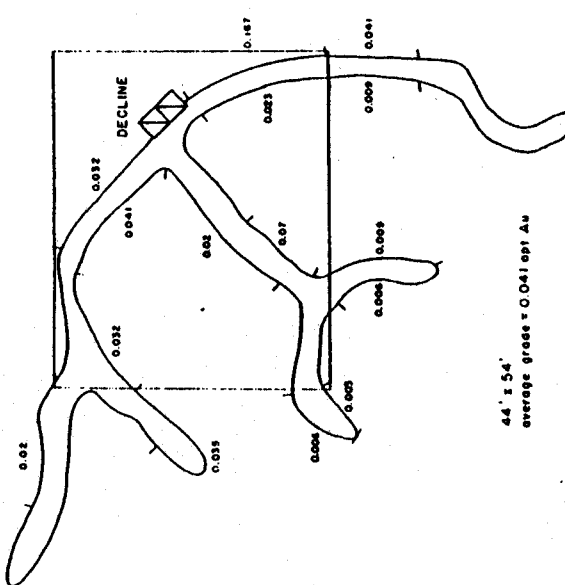


Nº 3 SUB LEVEL

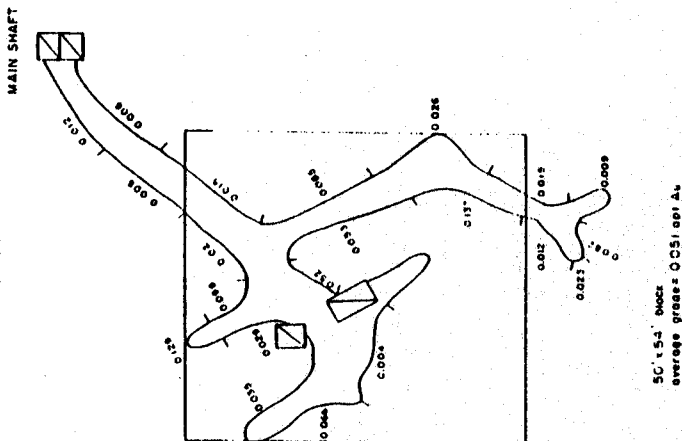


Legend

Nº 4 SUB LEVEL



100' LEVEL



45' LEVEL

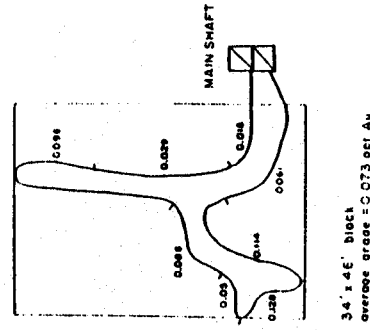
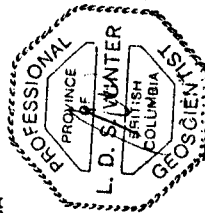


FIGURE 7

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

SAN JACINTO MINE
U/G SAMPLING



VIEW LOOKING NORTHWEST

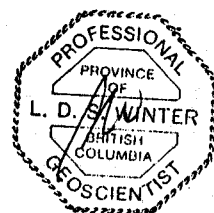
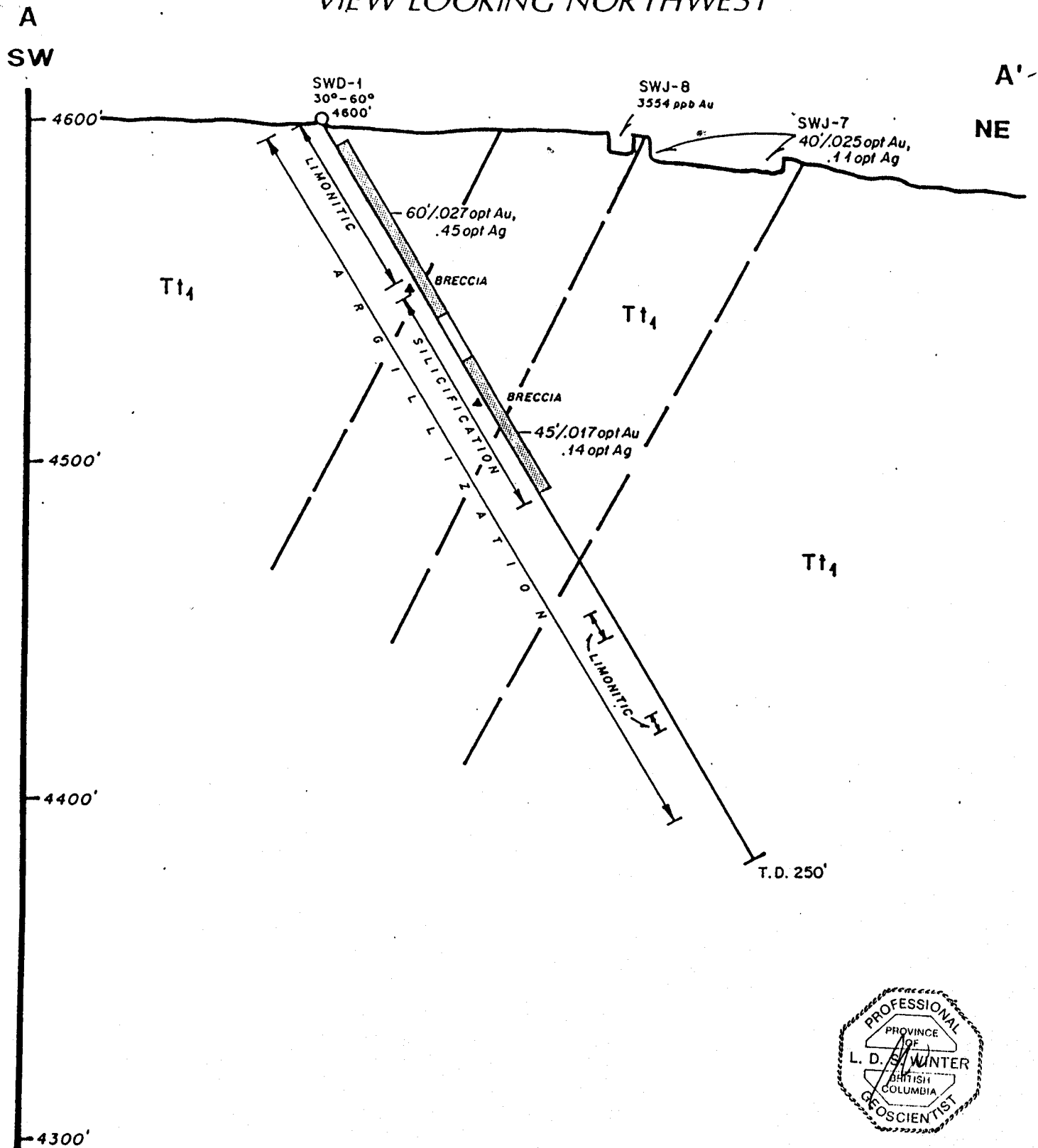


FIGURE 8
SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

SAN JACINTO ZONE
Hole SWD-1

DECEMBER, 1992

VIEW LOOKING NORTHWEST

B
SW

B'
NE

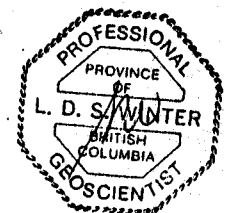
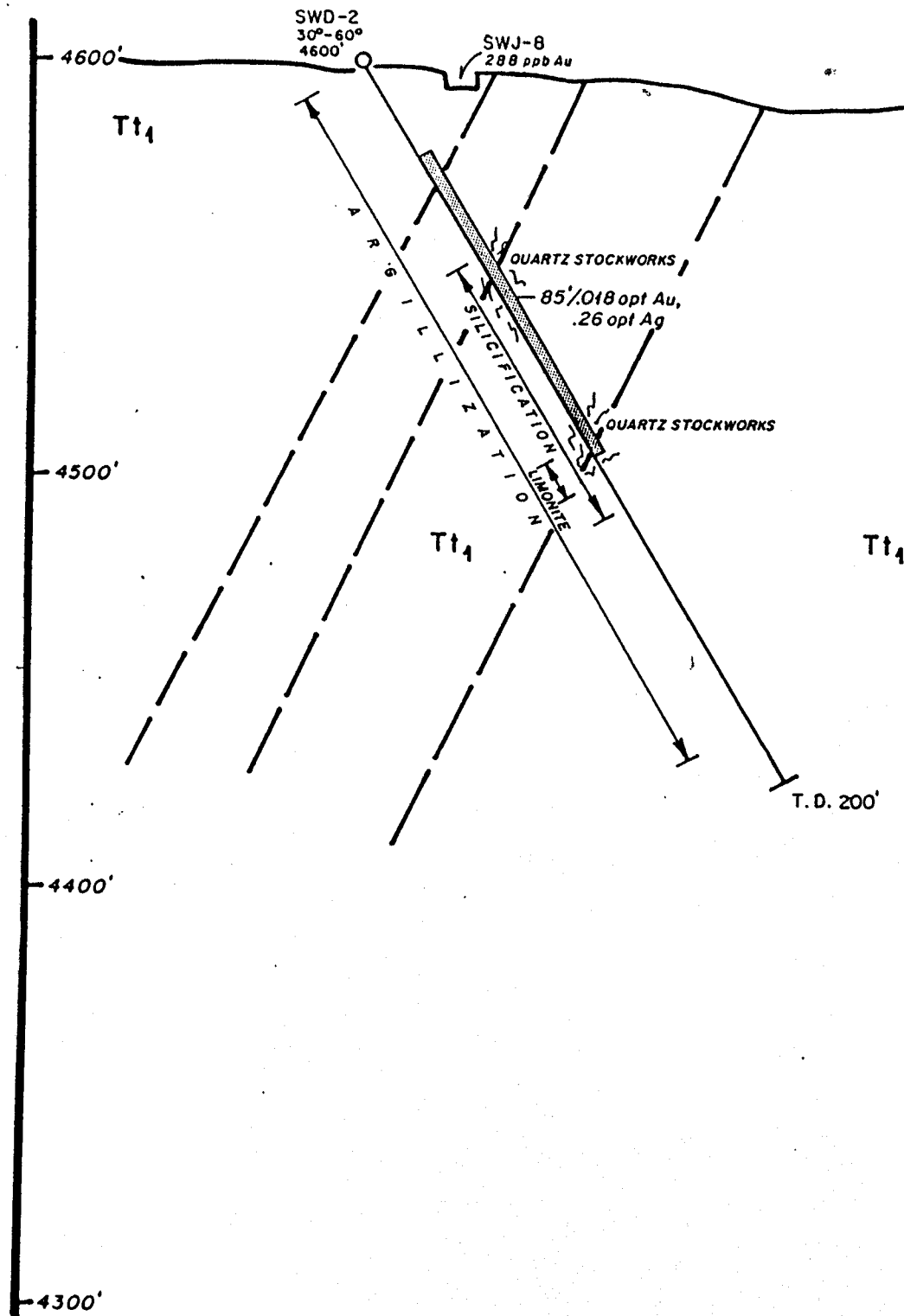


FIGURE 9
SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA
SAN JACINTO ZONE
Hole SWD-2

DECEMBER, 1992

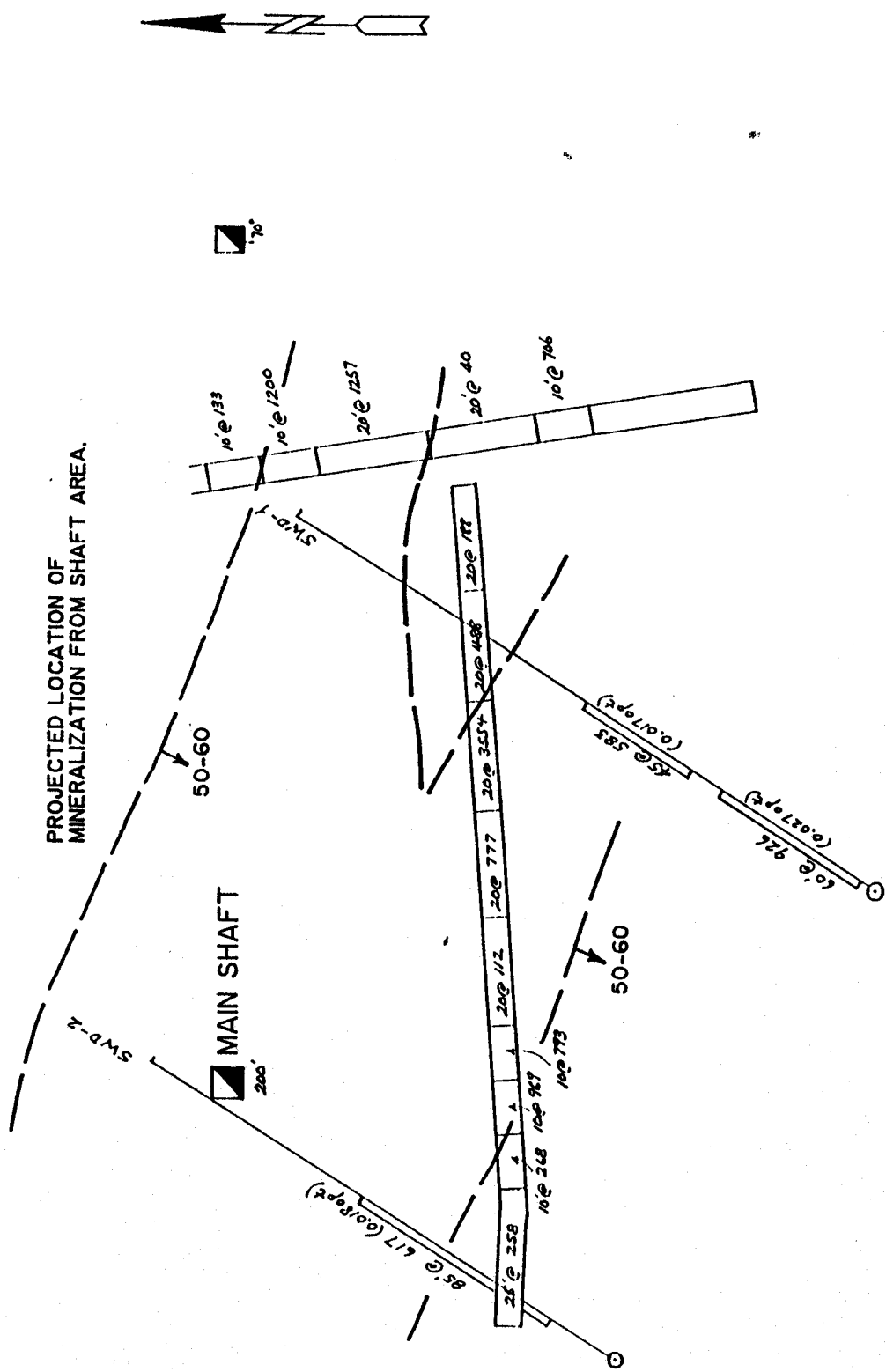


FIGURE 10

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

SAN JACINTO MINE AREA
MINERALIZATION ZONE



LEGEND

85' @ 617 (0.018opt) Au opt
length(ft) ppb Au

SCALE
0 20 40
FEET

of 120 feet (36.6 metres) wide, dipping to the south and with a strike length (to date) in the order of 300 feet (91.5 metres). Previous work suggests the zone may be weakening to the east as indicated by drill holes JE-4 (30 ft at 0.027 ounces/ton gold) and JE-34 (15 ft at 0.012 ounces/ton gold) however, it is still open to the west.

7.2 THE SAN JACINTO WEST AREA

The San Jacinto West zone was intersected in trench SWJ-10 directly west of the San Jacinto workings. Southwestern Gold excavated this trench together with a second parallel trench SWJ-12 and a third trench SWJ-11 at right angles to these (Figure 11).

Mineralization occurs within the same sedimentary / ignimbrite package as at the San Jacinto Mine, 600 feet (182.9 metres) to the east. An andesite sill as well as two rhyolite dykes were noted to intrude the sedimentary / ignimbrite package in this area. They appear to strike easterly, parallel to the structural zone, and are pervasively altered. The northern dyke is fractured and contains quartz veins with anomalous gold values (10 feet at 0.051 ounces/ton gold). The southern dyke and the adjacent andesite are also argillized. Between the two dykes is a zone of brecciation and intense argillic and siliceous alteration. Within this section four samples over a continuous 40 foot (12.2 metres) length of trench give the values reported in Table 2 below.

Table 2
San Jacinto West Zone
Trench Sampling - Trench SWJ-10

<u>Sample</u>	<u>Length (ft)</u>	<u>Assay (Au)</u>		<u>Ag</u>
		<u>ppb</u>	<u>opt</u>	<u>opt</u>
35240	10	906	0.026	3.7
35239	10	1268	0.037	3.9
183905	5	245	0.007	3.2 (1)
183906	5	207	0.006	4.1 (1)
183903	10	844	0.025	2.9 (1)
183904 (2)	10	813	0.024	2.3 (1)

(1) Samples taken by the writer

(2) 183904 is a duplicate of 183903

Drill hole SWD-5 drilled due north at -60° 10 feet (3.0 metres) east of this trench intersected weak to very strong argillic alteration however, gold values were generally less than 600 ppb gold (Figure 11).

The samples taken by the writer from this zone indicate that the gold values are associated with the highly silicified fragments within the volcanics. It is considered that additional work is required to further evaluate the potential of the San Jacinto West zone.

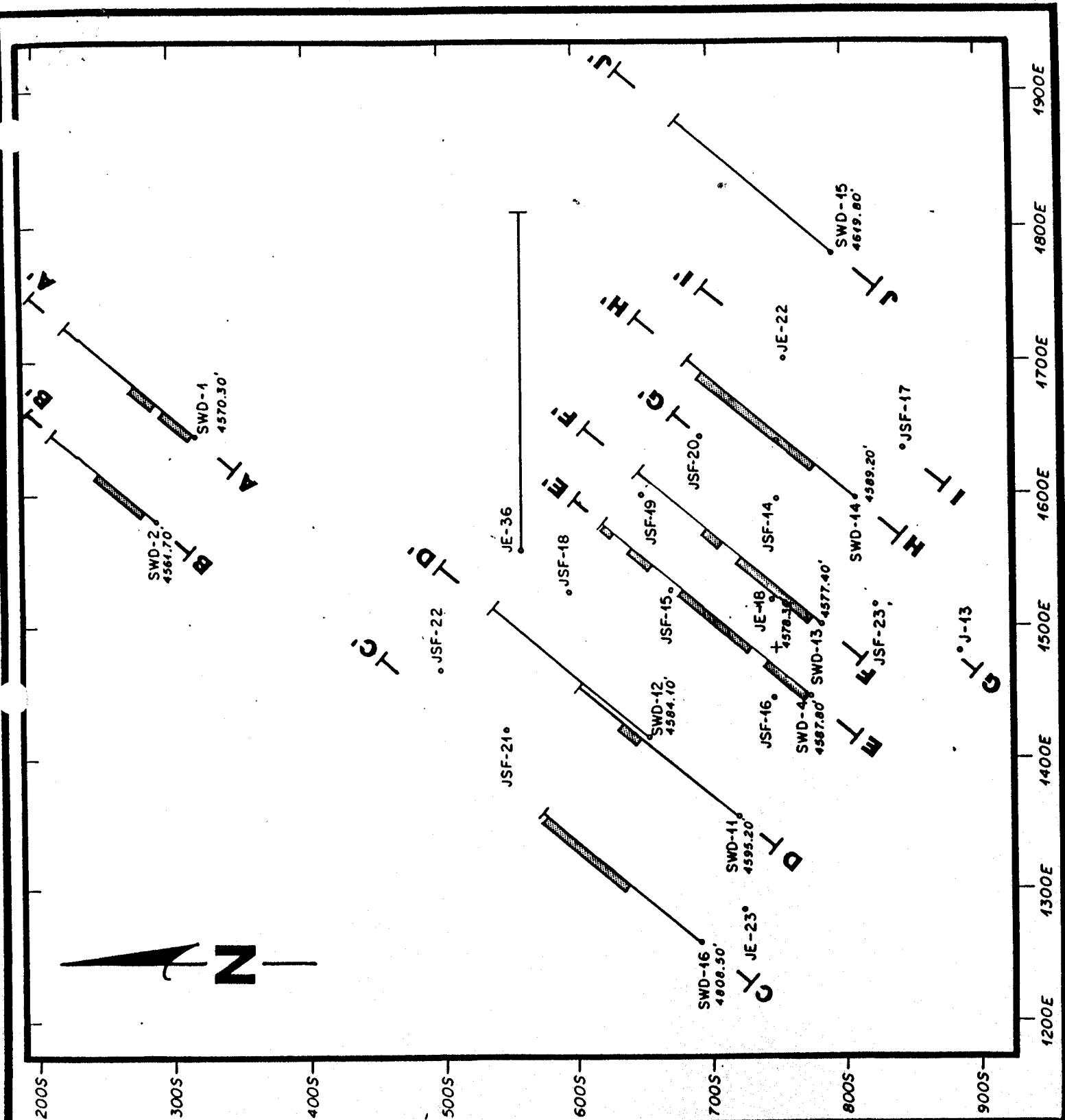
7.3 SAN JACINTO SOUTH AREA

The San Jacinto South zone is located approximately 400 feet (122 metres) south of the San Jacinto Mine workings. The surface outcrops in this area are a few weakly limonitized and argillized lapilli tuffs which do not reflect the underlying

mineralization. The mineralization was discovered by drilling by the Cordex and Santa Fe groups in the 1980's (Figures 5 and 12).

The mineralization occurs within a pervasively argillized, silicified and limonitized lapilli tuff with gold grades being in the 0.02 to 0.10 ounce/t range. The gold enrichment correlates strongly with the areas of silicification.

Southwestern Gold Corporation drilled seven holes in this area as listed in Table 3. This drilling in association with earlier drilling by the Cordex and Santa Fe groups indicates an east-west trending zone of faulting and deformation with associated alteration and gold mineralization. Strong silicification and strong enrichment in gold appears to be associated with more steeply dipping structures. Adjacent to these structures and in the hanging wall to the south, there appears to be silicification plus extensive argillic alteration with an associated enrichment in gold. The writer's interpretation is presented in Figure 13. The zone appears to be closed off to the east based on holes JE-22, JSF-17 and SWD-15. However, going to the west it is considered that there is a weak section as indicated by SWD-11 and SWD-12 followed by considerable silicification and strong argillization with associated gold enrichment in SWD-16 and JE-23. This would suggest that further work along the strike extension to the west is warranted.



MINERALIZED INTERVAL

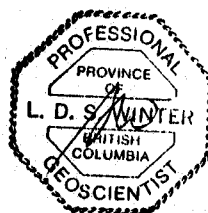


FIGURE 12
SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA
**SAN JACINTO SOUTH ZONE
DRILL HOLE LOCATIONS**

DECEMBER, 1992

VIEW LOOKING NORTHWEST

F
SW

F
NE

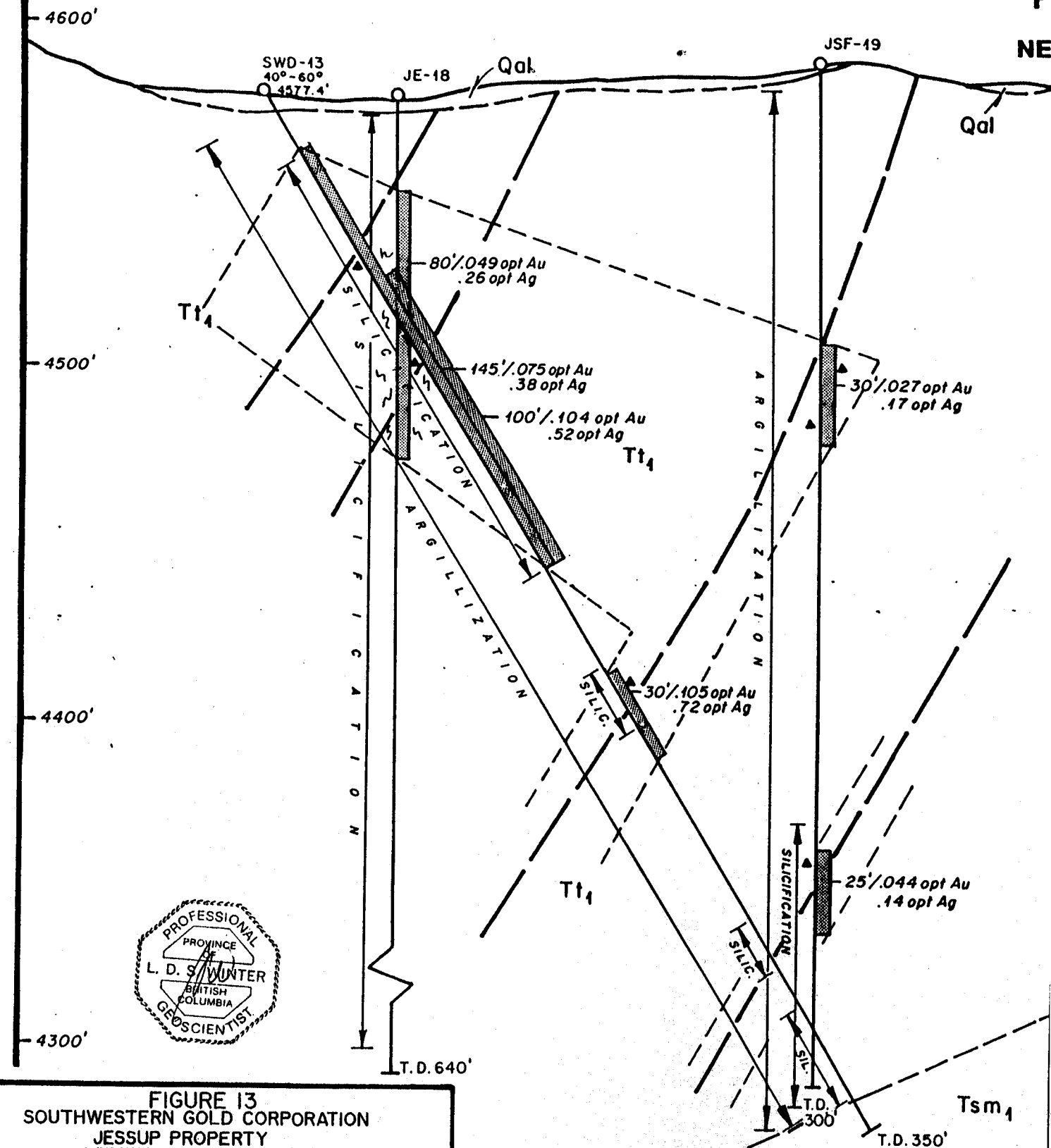


FIGURE 13
SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA

SAN JACINTO SOUTH ZONE
SECTION F-F'

DECEMBER, 1992

CROSS SECTION F-F'

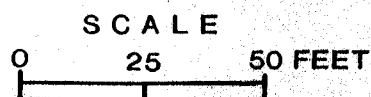


Table 3
San Jacinto South Zone
Southwestern Gold Corporation - 1992 Drill Results

Hole	Intersection (ft)			Assay		
	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Au ppb</u>	<u>Au opt</u>	<u>Ag opt</u>
SWD-4	0	80	80	377	0.011	0.07
	115	250	135	3154	0.092	2.90
	including					
	160	240	80	5006	0.146	4.53
SWD-11	185	220	35	377	0.011	0.03
SWD-12	145	160	15	51	0.001	0.12
SWD-13	15	160	145	2570	0.075	0.38
	195	225	30	3600	0.105	0.72
SWD-14	75	295	220	1337	0.039	0.15
	130	200	70	3292	0.096	0.24
SWD-15	No significant intersection					
SWD-16	130	295	165	411	0.012	---

7.4 CENTRAL JESSUP AREA

The sedimentary / ignimbrite package at the San Jacinto area strikes northwesterly across the Central Jessup area with the lower andesite unit sub-cropping in the north central part. To the southwest, andesitic dykes intrude the package and upper andesite flows unconformably overlie these units (Figure 14).

A structural setting similar to that in the San Jacinto area appears to be present in the Central Jessup area. A series of rhyolite plugs oriented in a westerly direction are located along the normal fault structures. The rhyolites were themselves cut off by these structures during periods of re-activation. A few northeasterly-trending normal faults active in post-rhyolite

CENTRAL JESSUP MINERALIZED ZONE

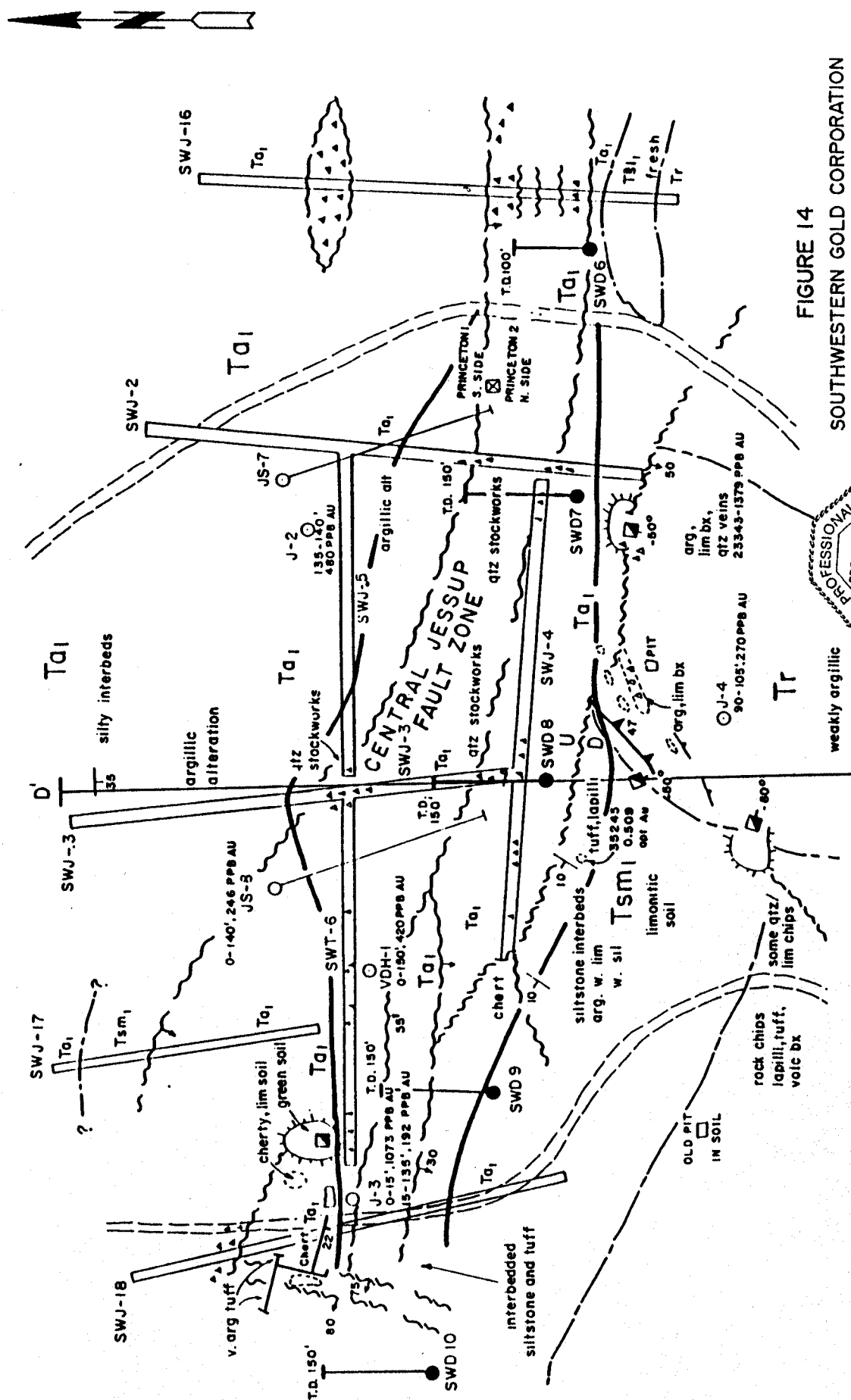
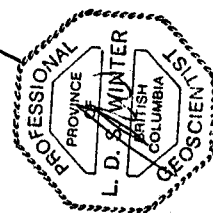


FIGURE 14

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA
CENTRAL JESSUP AREA



times crosscut the area.

The Central Jessup mineralization occurs in an area of poorly exposed andesites and lacustrine sediments where a number of trenches were excavated by Southwestern Gold in an attempt to better understand the overall pattern of mineralization and structure. The mineralized zone occurs within strongly altered andesites capped by cherty sediments. The general trend of the mineralization is westerly and is controlled by a normal fault, the Central Jessup fault zone, indicated by the trench mapping. Mineralized limonitic quartz breccias on the edges of the rhyolite were mined by early workers in the area.

The main body of mineralization consists of randomly oriented quartz stringers and breccia zones within pervasively argillized andesites. Small to moderate amounts of limonite are present in some of the higher grade areas. The surface projection of the mineralized zone is defined by the series of north and west trending trenches. Sample 35245 (Table 4) located 60 feet southwest of drill hole SWD-8 suggests the potential for additional mineralization south of the main zone.

The trenching and the drill hole locations of the Central Jessup area are shown in Figure 14 and Figure 15 is a section through drill hole SWD-8. The drilling results are presented in Table 4.

SOUTH

VIEW LOOKING WEST

NORTH

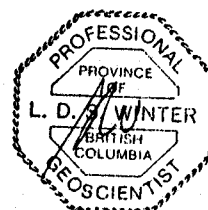
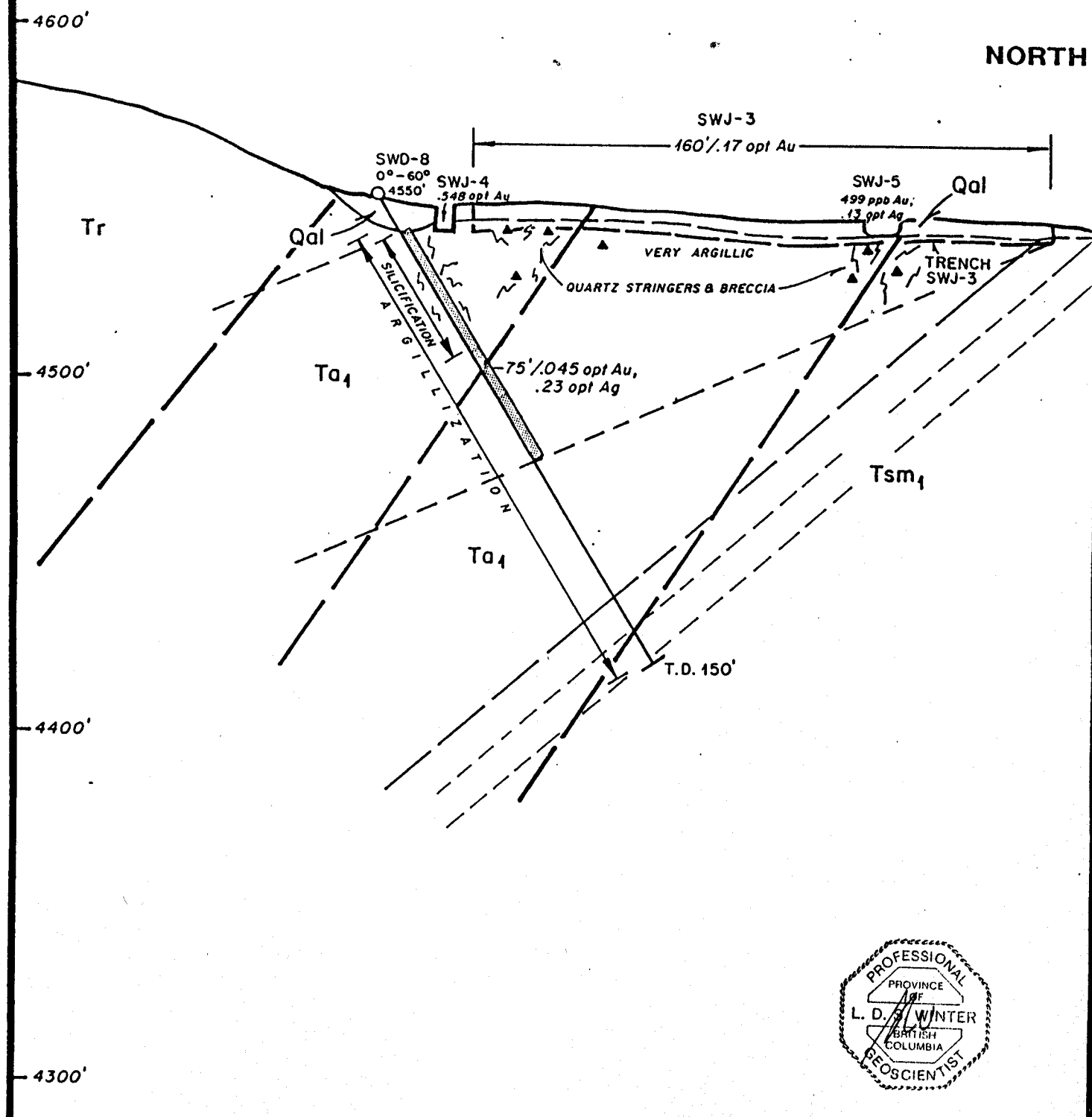


FIGURE 15
SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA
CENTRAL JESSUP ZONE
DRILL HOLE SWD-8

DECEMBER, 1992

Table 4
Central Jessup Area
Southwestern Gold Corporation - 1992 Drill Results

Hole	Intersection (ft)			Au	Au	Ag	Remarks
_____	<u>From</u>	<u>To</u>	<u>Length</u>	<u>ppb</u>	<u>opt</u>	<u>opt</u>	_____
SWD-6							No significant intersection
SWD-7	5	35	30		0.064	1.21	Bearing 0° -60° 150°
SWD-8	10	85	75		0.045	0.23	Bearing 0° -60° 150'
SWD-9	10	20	10		0.027	0.08	Bearing 0° -60° 150'
SWD-10							No significant intersection.
Sample 183907 (1)			5	12030 11467	0.351 0.334	0.34	Silicified frag in argillized vol. matrix Central Jessup Tr SWJ-3 centre of mineralized zone, 45'N of collar of SWD- 8.
Sample 35245					0.509		60'WSW of collar SWD-8 mineralized lapilli tuff.

(1) Sample taken by the writer.

7.5 NORTH JESSUP AREA

The North Jessup area (Figure 16) is mainly underlain by andesitic flows with a west-trending downdropped block of sediments / ignimbrite outcropping across the south central part of the area. Alteration and mineralization is largely limited to this block and to the andesite south of it with the exception of two areas of hydro-brecciated, silicified and limonitic andesites in the northeastern corner of the area.

Previous investigations of this area were focused on the sedimentary / ignimbrite belt. Although outcrop in this area is scarce, argillic and/or limonitic alteration is widespread and this is supported by the IP resistivity survey which outlined a broad northwest-trending zone of high chargeability containing areas of low resistivity.

Three locations within this area show significant gold mineralization as summarized below.

- 1) Along the northwestern edge of the area, there is an extensive quartz stockwork. Argillic alteration is pervasive and strong and quartz stockworks are scattered throughout the area. Remnant blocks of weakly altered volcanics and quartz vein chert are also present. Alteration appears to trend easterly although limited exposure makes the interpretation uncertain. One composite sample from a 25 foot x 25 foot (7.6 metres) area of quartz stockwork assayed 5,399 ppb gold.
- 2) There is an area of extensive argillic alteration near the southern boundary of the area. Two old shafts are located in this area and a 50 foot (15.2 metres) dump

sample containing quartz stockwork assayed 3,838 ppb gold. Drill hole J-8 (Occidental Petroleum) close to the shaft returned 120 feet (36.6 metres) of 280 ppb gold representing the lower grade argillic halo associated with the stockwork mineralization.

- 3) There is a structurally complex area in the centre of the sedimentary/ignimbrite belt. Three shallow trenches and four drill holes located in this area returned encouraging results. Mineralization in J-9 gave 35 feet (10.7 metres) at 1,300 ppb gold. Mineralization in this hole is associated with rounded quartz fragments in an argillic matrix suggestive of a sub-vertical hydrothermal system. This mineralization is higher grade (15 feet of 3,900 ppb gold) which also supports this interpretation.

A structural interpretation of the North Jessup area suggest that the sedimentary / ignimbrite zones are located in grabens within the andesite belt. These grabens appear to have been focal points for mineralizing fluids resulting in argillic alteration and quartz veining.

Based on the structural environment, the observed alteration and the anomalous gold values, it is considered that this area which is relatively unexplored requires further evaluation to assess its potential to host epithermal gold mineralization of economic significance.

7.6 MINING LADY / TOSH HILL AREA

The Mining Lady / Tosh Hill area is underlain by andesites, lacustrine sediments and lapilli tuffs which are intruded by rhyolite dykes. The area is dominated by northeast-trending structures which were active in pre and post rhyolite times (Figures 17 and 18).

Earlier mining activity was centred on Tosh Hill where an unknown quantity of gold was extracted from narrow northeast-trending quartz/breccia veins. A number of trenches were excavated and holes were drilled by Cordex and Occidental Petroleum.

At Tosh Hill, the drill results were variable. Disseminated mineralization appears to be limited to the area surrounding the main shaft where a number of low grade intersections were encountered. Drill hole JE-38 intersected the southernmost structure at depth where a 5 foot (1.5 metre) intersection of 0.232 ounces/t gold was recorded. The lateral continuity of this zone was not confirmed in drill holes JE-31 and JE-32. The central structure was not tested by drilling. Southwestern Gold sampled both the central and southern veins with two grab samples about 125 feet (38.1 metres) apart on the central vein giving assays of 0.295 ounces/t gold and 72 ppb gold. Two grab samples from the southern vein, 150 feet (45.7 metres) apart, assayed 3,082 ppb gold and 0.37 ounces/t gold.

At the Mining Lady, one principal vein outcrops. Southwestern Gold sampled this vein and gold values of 410 and 814 ppb gold were obtained. A 250 foot (76.2 metres) trench excavated across the vein and into the rhyolitic wallrocks returned low but anomalous gold values between 32 and 121 ppb gold.

40.00W

42.00W

46.00W

48.00W

49.00W

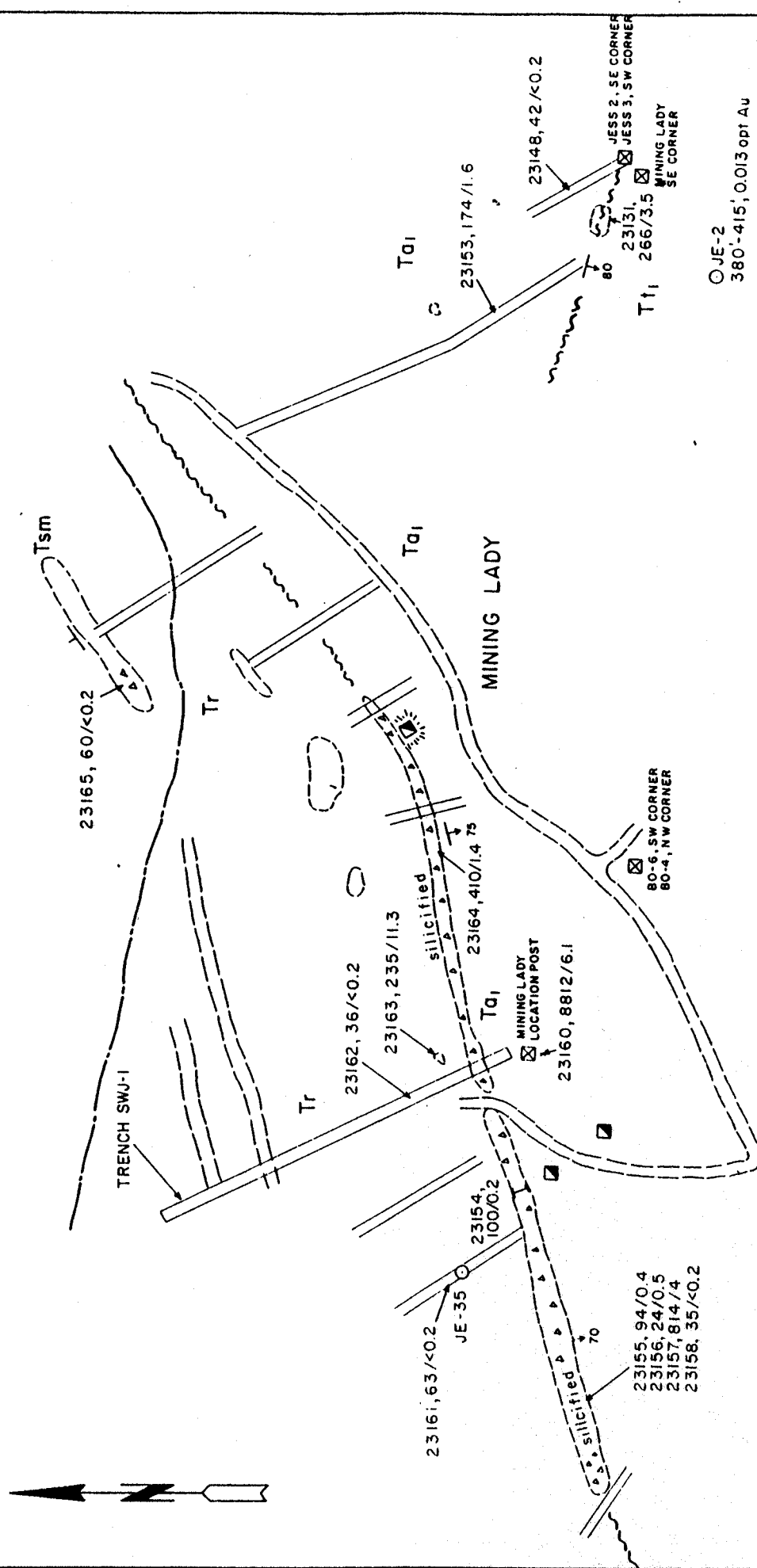


FIGURE 17

SOUTHWESTERN GOLD CORPORATION
JESSUP PROPERTY
CHURCHILL COUNTY, NEVADA
MINING LADY AREA



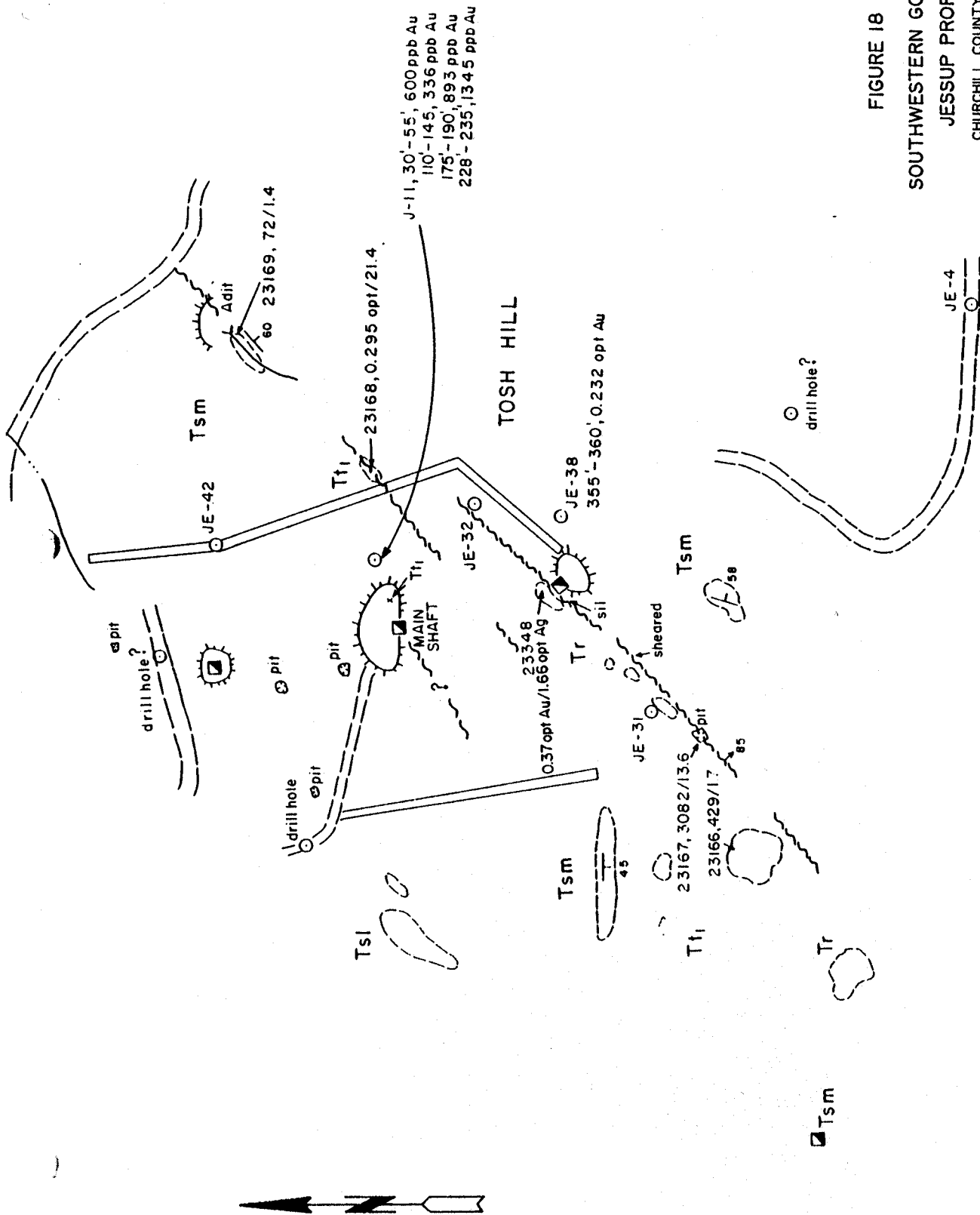


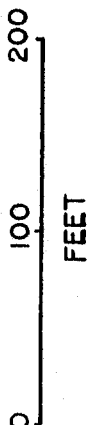
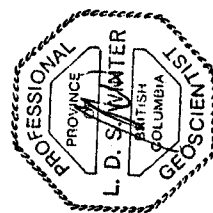
FIGURE 18

SOUTHWESTERN GOLD CORPORATION

JESSUP PROPERTY

CHURCHILL COUNTY, NEVADA

TOSH HILL AREA



One hole drilled into this vein by the Cordex group (JE-35) gave low assays. One sample from a small vein south of the Mining Lady location post returned 8,812 ppb gold. It is thought this vein is narrow and discontinuous from its appearance.

8. MINERAL INVENTORY

There are three areas on the property which currently host mineralization of economic significance, the San Jacinto Mine, San Jacinto South and Central Jessup. Based on the trenching, sampling and drilling an estimate of the tonnage and grade of the material in each of these areas has been calculated. These estimates are presented as a mineral inventory representing the tons of mineralized rock in the ground that is interpreted to be present.

Leigh (1986) defines a mineral inventory as follows.

"Uncategorized reserves calculated within stated minimum grade or quality and width or thickness parameters, without regard to internal sample spacing, for the purpose of quantifying the mineral content of the deposit". He further states, "A mineral inventory generally represents a first approximation of the quantity of mineral in a deposit..."

In the following calculations the criteria used in arriving at the stated mineral inventory are:

- (1) a cut-off grade of 0.008 ounces/ton gold.

- (2) a tonnage factor of 12.3 ft³/ton based on the specific gravity of the main minerals and their alteration products in the volcanic rocks.
- (3) tonnages were calculated using the method of sections with drill hole results being projected half-way to the next drill section and up to 100 feet where no adjacent hole is present.

San Jacinto Mine Area

The tonnage estimates in this area are based on the surface trenching and sampling results and the results from drill holes SWD-1 and SWD-2. The sampling results from the old San Jacinto mine workings have not been incorporated into the calculated tonnage due to the difficulty of correlating the underground work with the surface and drilling results. However, it is considered that the underground sampling results suggest that the actual tonnage grade would probably be higher than estimated due to the higher grade of some of the underground sampling (Figure 7). To adequately define the available tonnage in this zone a program of detailed drilling is recommended as part of the ongoing exploration program. The mineral inventory for the San Jacinto Mine is presented below.

San Jacinto Mine Area - Mineral Inventory

<u>Section</u>	<u>Area</u> (ft ²)	<u>Length</u> (ft)	<u>Vol</u> (ft ³)	<u>Tons</u>	<u>Au</u> opt	<u>Ag</u> opt
A-A						
SWD-1	21,600	150	3,240,000	263,000	0.020	0.28
B-B						
SWD-2	14,000	150	2,100,000	171,000	0.018	0.26
TOTAL				434,000	0.019	0.25

The estimated mineral inventory for the San Jacinto Zone is 434,000 tons averaging 0.019 ounces/ton gold and 0.25 ounces/ton silver to a maximum depth of 200 feet and a strike length of 300 feet with the zone open to the west.

San Jacinto South Area - Mineral Inventory

A mineral inventory has been calculated for this area using the results of the drilling as presented in Section 7.4.

<u>Section</u>	<u>Area</u> (ft ²)	<u>Length</u> (ft)	<u>Vol</u> (ft ³)	<u>Tons</u>	<u>Au</u> opt	<u>Ag</u> opt
C	31,131	145	4,513,995	366,991	0.016	0.13
E	21,190	73	1,546,870	125,762	0.051	1.55
F	17,420	48	836,160	67,980	0.066	0.36
G	26,675	45	1,200,375	97,591	0.036	0.30
H	22000	45	990,000	<u>80,488</u>	<u>0.039</u>	<u>0.15</u>
TOTAL				738,812	0.032	0.42

It is estimated that the San Jacinto South Zone hosts a mineral inventory of 738,800 tons at an average grade of 0.032 ounces/ton Au and 0.42 ounces/ton Ag over a strike length of 450 feet (137 metres) and a depth of 250 feet (76 metres). Additional drilling is recommended to fully define the mineralization and its limits.

Central Jessup Area - Mineral Inventory

For the Central Jessup area a mineral inventory has been calculated using the results of the surface sampling and drill holes SWD-6, -7, -8, -9 and -10 and the interpretation presented in section 7.5.

<u>Hole</u> <u>Section</u>	<u>Area</u> <u>(ft²)</u>	<u>x</u>	<u>Length</u> <u>(ft)</u>	<u>Vol.</u> <u>(ft³)</u>	<u>Tons</u>	<u>Grade</u> <u>Au opt</u>	<u>Ag</u> <u>opt</u>
SWD-7	4370		185	808,450	65,728	0.066	1.21
SWD-8	13778		205	2,824,490	229,633	0.069	0.25
SWD-9	1440		200	288,000	<u>23,775</u>	<u>0.027</u>	<u>0.08</u>
TOTAL					318,775	0.065	0.44

The Central Jessup area is considered to host a mineral inventory of 318,800 tons at an average grade of 0.065 ounces/ton Au and 0.44 ounces/ton Ag over a strike length of 590 feet (180 metres) and to a vertical depth of approximately 90 feet (27.4 metres). Additional drilling is also recommended for this zone to fully outline the mineralization.

Table 5
Jessup Property
Total Estimated Mineral Inventory

<u>Zone</u>	<u>Tons</u> <u>(000's)</u>	<u>Grade</u> <u>Au opt</u>	<u>Ag opt</u>
San Jacinto Mine	434.0	0.019	0.25
San Jacinto South	738.8	0.032	0.42
Central Jessup	<u>318.8</u>	0.065	0.44
TOTAL	1,491.6	0.035	0.37

The total estimated mineral inventory for the Jessup property at this time is 1,492,000 tons at an average grade of 0.035 ounces/ton gold and 0.37 ounces/ton silver. All of this

mineralization occurs within 250 feet (76 metres) of surface and would appear to be amenable to open pit mining. The silver/gold ratio of the mineralization is 10/1. A program of detailed drilling is recommended in section 11 to further define the limits and characteristics of this mineralization.

9. PRELIMINARY METALLURGICAL TESTING

Preliminary bottle roll metallurgical tests were performed on two trench samples of higher grade clay-rich material from the Central Jessup area and on lower grade mineralization from the San Jacinto West area to determine their amenability to cyanide heap leaching (Sorce, 1992). This work was conducted at McClelland Laboratories Inc., Sparks, Nevada. The material was 80 percent minus $1/2$ inch. Gold recoveries of 90.0 and 78.1 percent were achieved from the San Jacinto West and Central Jessup areas respectively after 96 hours of leaching. Silver recoveries were 43.8 and 32.4 percent respectively. The conclusions of the study were,

- the supplied trench samples were amenable to direct agitated cyanidation treatment.
- initial gold and silver recovery rates were rapid.
- cyanide consumptions were very low.
- lime requirements were moderate to high.

10. CONCLUSIONS

In summary, it is considered that within a Tertiary volcanic caldera an environment where epithermal gold mineralization has been emplaced has been identified. Within this environment, six areas of mineralization have been identified of which to date three, the San Jacinto Mine, the San Jacinto South and the Central Jessup, show the potential to host sufficient quantities of mineralization at an appropriate grade to be of economic significance. A mineral inventory estimate for these three zones gives a total of 1,492,000 tons at an average grade of 0.035 ounces/ton gold and 0.37 ounces/ton silver.

All of this mineralization occurs at shallow depths and is amenable to extraction by open pit methods. Preliminary metallurgical tests indicate the mineralization can be readily treated by direct agitation cyanidation with low cyanide consumption.

The additional three areas show typical epithermal gold deposit characteristics with gold mineralization and require further evaluation to assess their potential.

In the San Jacinto Mine, the San Jacinto South and the Central Jessup areas, it is considered that detailed drilling is required to detail the indicated tonnages and to test their projections along strike. In the other areas geological mapping, geophysics, trenching and sampling to be followed drilling is required to continue the evaluation.

11. RECOMMENDED EXPLORATION PROGRAM AND BUDGET

To carry out the on-going evaluation of the three known zones of mineralization as well as other potential areas within the property, a program of geological mapping, drilling, trenching and sampling is recommended. Preliminary engineering and metallurgical work are also recommended on the San Jacinto Mine, San Jacinto South and Central Jessup areas. The proposed work program and budget are presented in the following section.

<u>Phase 1</u>	<u>US Dollars</u>
1. Reverse Circulation Drilling	\$ 20,000
Exploration San Jacinto West, North Jessup, Mining Lady / Tosh Hill, etc. 2,000 feet @ \$10/foot	
2. Reverse Circulation Drilling	30,000
Detail at San Jacinto Mine, San Jacinto South and Central Jessup 3,000 ft @ \$10/foot	
3. Analytical Expense	15,000
1,000 samples @ \$15/sample	
4. Geophysical Surveys	15,000
Induced Polarization and Magnetics	
5. Trenching and excavation	3,000
6. Project supervision, drill supervision and geological mapping	
Senior geologist	4,000
Project geologist	10,000
Junior geologist & support personnel	8,400
7. Maps, drafting, reports, surveying, etc.	4,000
8. Legal and land costs	
- option payments	8,000
- legal fees	1,000
- BLM fees (94 claims)	18,800
9. Travel, meals, accommodation, etc.	6,000
10. Field office expense	<u>21,000</u>
Sub-total	\$ 164,200
Contingency 10%	<u>16,400</u>
PHASE 1 TOTAL	\$ 180,600

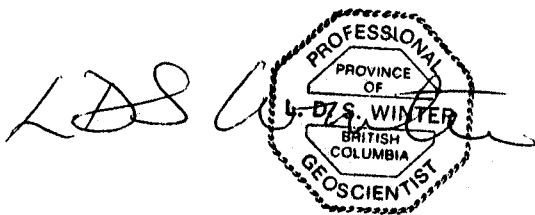
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CERTIFICATE OF QUALIFICATION

I, Lionel Donald Stewart Winter do hereby certify:

1. that I am a geologist and reside at 1849 Oriole Drive, Sudbury, Ontario, P3E 2W5,
2. that I am a registered geoscientist in the Association of Professional Engineers and Geoscientists of British Columbia,
3. that I am a Fellow of the Geological Association of Canada,
4. that I graduated from University of Toronto in Mining Engineering in 1957 with a Bachelor of Applied Science and from McGill University, Montreal in 1961 with a Master of Science (Applied) in Geology,
5. that I have practised my profession continuously since 1957,
6. that my report on the Jessup Property, Churchill County, Nevada is based on my personal knowledge of the geology of the area, and on a review of information on the property and surrounding area, and a property visit on October 29, 1992 and,
7. that I have no personal, direct or indirect interest in the Jessup Property, Churchill County, Nevada, or any adjacent properties, nor do I hold or intend to hold any interest in Southwestern Gold Corporation and I have written this report as a totally independent consultant.



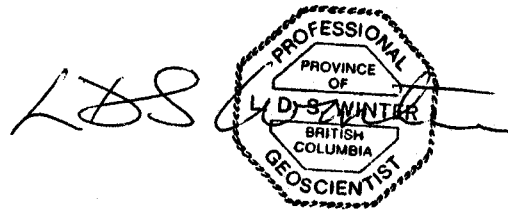
L.D.S. Winter

B.A.Sc., M.Sc., P.Geo.(B.C.)

December 30, 1992

LETTER OF CONSENT

I, L.D.S. Winter, consulting geologist, 1849 Oriole Drive, Sudbury, Ontario, do hereby consent to Southwestern Gold Corporation using in whole or in part my report on the Jessup Property, Churchill County, Nevada in a prospectus or statement of material facts or for filing with government regulatory bodies as is deemed necessary.



Dated at Sudbury, Ontario
December 30, 1992

L.D.S. Winter
B.A.Sc., M.Sc., P.Geo.(B.C.)