

Falcon - Boss mine

60003269 2000

NV

ESMERALDA CO.

BOSS MINE

60003269 2000

FALCON EXPL - BOSS MINE

D. STRATHAN PHONED 8/18/18

OWNER WANTS MINORITY PARTNER TO EXPLORE

@ BOSS; - 12, \$

OWNER - E B

PHASE I - \$30,000 } will extend
PHASE II \$300,000 } 33 1/3 %

MINORITY INTEREST - 33 1/3 %

MEET D. STRATHAN @ 8:00 am, MONDAY,
SEPT 22 @ BOSS MINE

**Economic Geology
and
Exploration Potential**

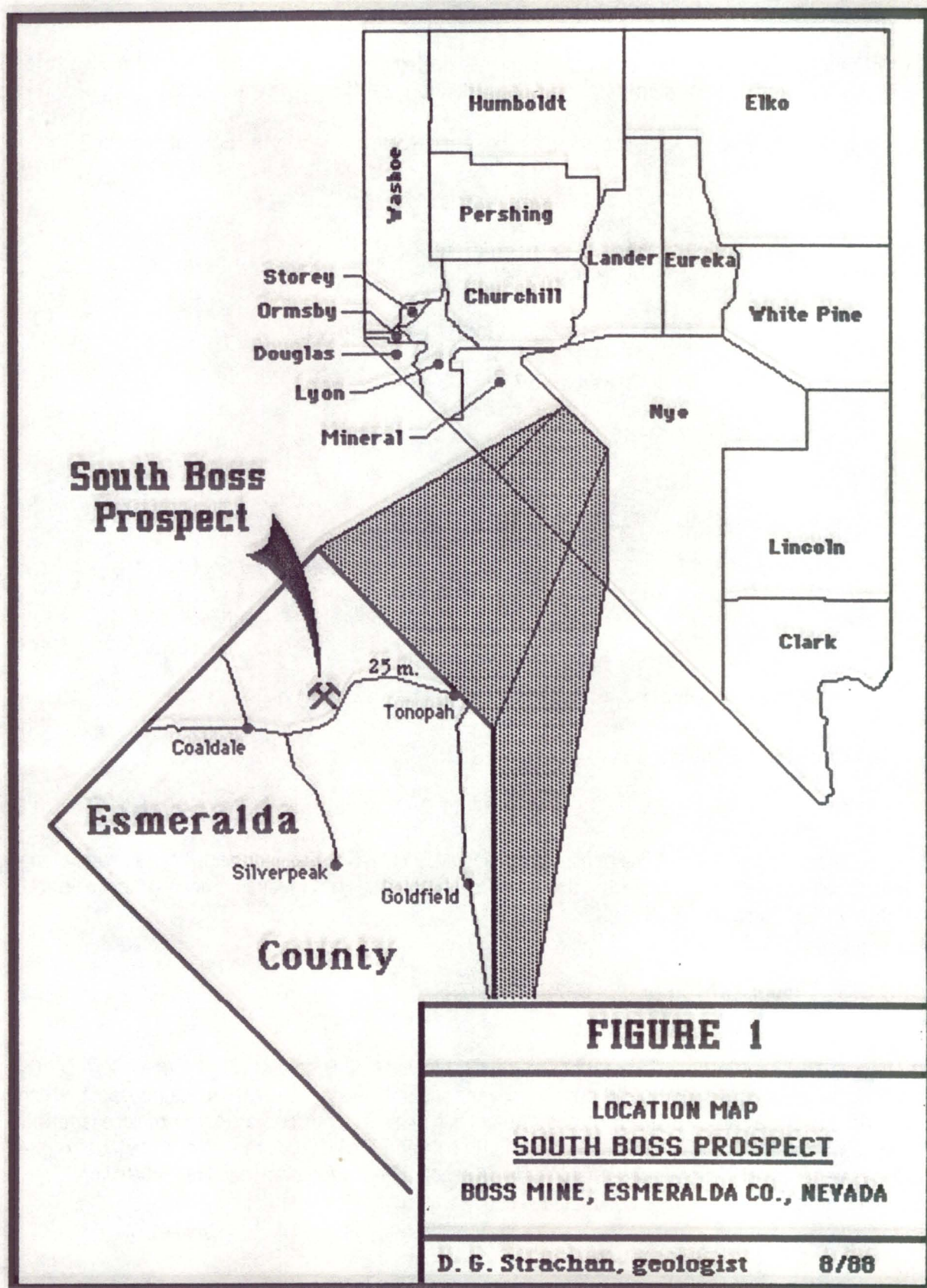
of the

**SOUTH BOSS PROSPECT
BOSS GOLD MINE
ESMERALDA COUNTY, NEVADA**

A Prospectus for

**Falcon Exploration
Post Office Box 3719
Tonopah, Nevada 89049**

August, 1988



Property Name: South Boss Prospect

Purposes of Prospectus: Describe economic geology of the Boss Mine. Describe economic potential for additional disseminated gold deposits along strike to the southwest.

Claims: Approximately 431 contiguous lodes and 43 millsites in the area of Figure 2.

Ownership:

Ebco Enterprises Evout Boss
2000 Powell Street
Emeryville, California 94608
415-658-6966

Falcon Exploration (mining subsidiary)
Boss Mine
Post Office Box 3719
Tonopah, Nevada 89049
702-482-3566

Location of the South Boss Prospect:

Sections: 18, 19, 29-32	Township: 3 North	Range: 39 East
	3 North	38 1/2 East
	2 North	39 East
	2 North	38 1/2 East

District: South Gilbert

Elevation: 4,900 feet

County: Esmeralda

State: Nevada

UTM Coordinates: 4,213,000 N./443,000 E.

Other: The South Boss prospect covers an area 2.5 miles long and 2 miles wide along a line stretching southwest from the present Boss open pit. This favorable area subparallels U.S. Highway 95 (Figures 1 & 2).

U.S.G.S. Topographic Maps: Devil's Gate 7.5'

Access: Tonopah is 25 miles east of the Boss by paved U.S. Highway 95 (Figure 1). A gently sloping pedimentary and alluvial surface covers the entire strikelength of the prospect which parallels Highway 95. Drill roads and mine roads provide a moderate amount of access to the area of interest. Much of the area is negotiable by vehicles without the aid of previously prepared roads, although four-wheel drive is recommended for prolonged off-road work, especially when navigating the numerous sandy washes in dry weather.

FIGURE 2

SOUTH. BOSS
PROSPECTIVE AREA
BOSS GOLD MINE
ESMERALDA CO., NEVADA

D.G. STRACHAN

8/88

SCALE IN FEET
0 500 1000

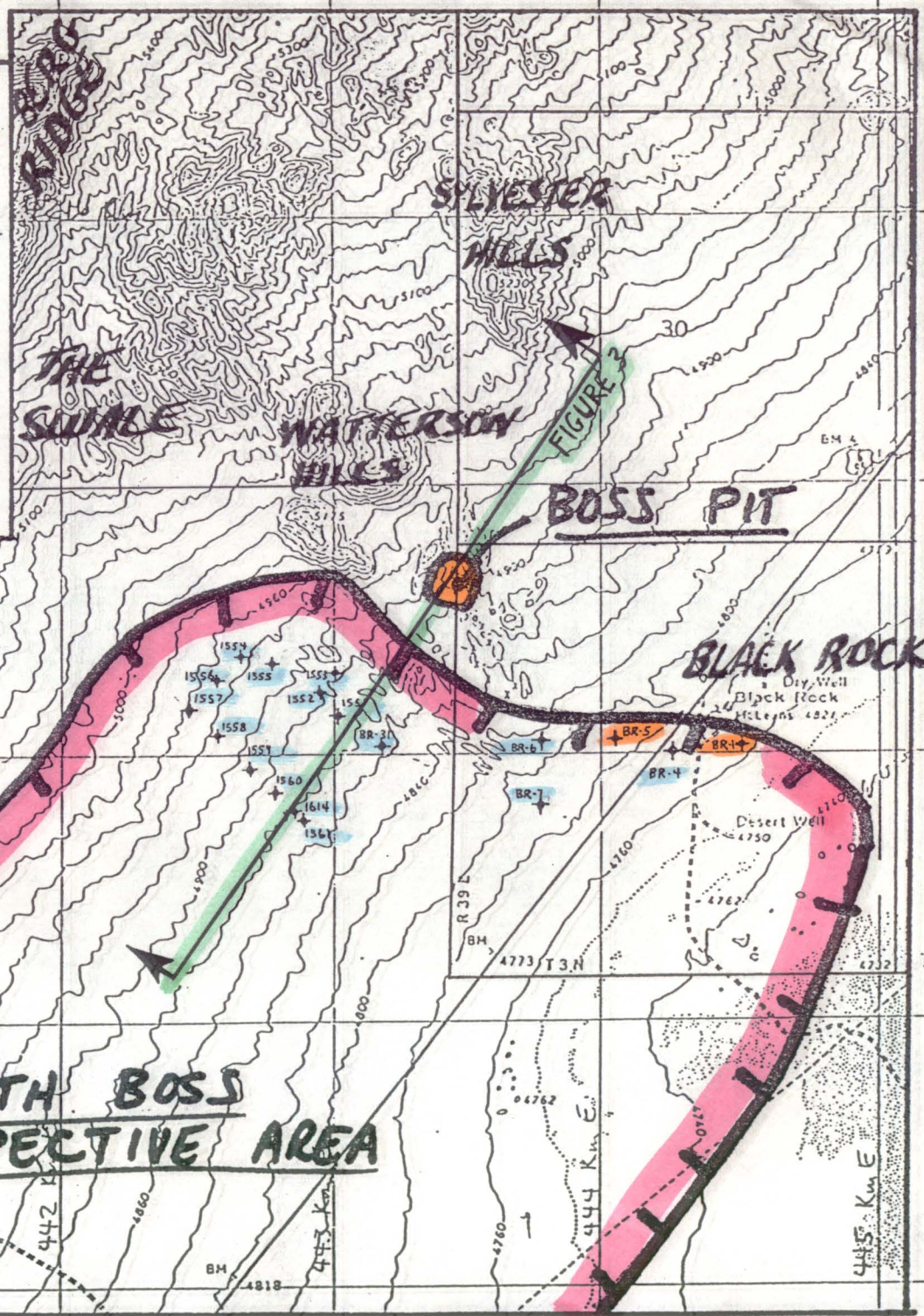
1" = 2000'

LEGEND

Favorable area for
multi-million ton deposits:
— disseminated gold in
Miocene/Pliocene andesites
and andesitic sediments —



+ 1614 DRILL HOLE



Historical Summary of Boss Mine and South Boss Prospect:

early 1900's ?	Prospect shafts and pits in area of the Boss Pit.
1977-1978	Boss property drilled by Houston Oil and Minerals.
August 1981	Ebco Enterprises acquires core of Boss property.
1981 - 1987	Boss property expanded and developed by Falcon Exploration. 600,000 tons of 0.05 opt Au heap-leachable ores are proven.
1987	Homestake Mining Company options Falcon's claims peripheral to the Boss deposit and drills 35 exploration holes, mostly to the northeast and southeast. Homestake returned Falcon's claims.
January 1988	First gold poured from the Boss deposit.
February 1988	Falcon begins exploration around the Boss deposit.
May 1988	Falcon acquires surrounding Homestake claims, including the South Boss Prospect area.
July 1988	Falcon decides to joint venture exploration of South Boss Prospect.

Workings: No workings are known on the South Boss Prospect.

Drilling: At this point in its history, discussion of the South Boss Prospect necessarily includes the entire Boss property. To date, at least 1,500 holes have been drilled within the bounds of the Boss Property. All were drilled vertical. Almost all were shallow development or condemnation holes in the immediate area of the present Boss pit. Only Homestake, in 1987, used reverse circulation. All others have been single-tube rotary holes of various types, using a range of drilling platforms (air track to T-4 Ingersoll-Rand).

Some of the early, exploration and development holes (1977 and 1978) were drilled by Houston Oil and Minerals Inc. Later development holes (through the mid-1980's) were drilled by Falcon Exploration. Falcon's holes were almost exclusively drilled by air track. Falcon's development drilling of the Boss orebody, at 50-foot centers, was done exclusively by a single air track drill still on the property.

Many of the older Houston Oil and Minerals holes with the "BR" (Black Rock) designation were later twinned by Falcon air track holes. Assay results between the holes of both eras agreed fairly well. Grades predicted from development drilling by Falcon at 50-foot centers compare favorably with grades being encountered during the present mining operations.

Homestake drilled 35 vertical reverse circulation holes in 1987. Most of these holes were collared southeast and northeast of the present Boss deposit, outside of the South Boss Prospect. Depths of the Homestake holes ranged approximately from 80 to 300 feet deep. Homestake drilled the only significant gold intercepts yet encountered in the South Boss Prospect, as follows:

D.H. BR-1	60' - 90'	30' of 0.034 opt Au
D.H. BR-5	100' - 130'	30' of 0.030 opt Au

These two mineralized holes were drilled in the area of Black Rock; BR-1 about 700 feet southeast of Highway 95, BR-5 about 500 feet northwest of Highway 95 (see Figure 2). Host rock for these gold intercepts is not readily apparent from the descriptions in Homestake's logs, given what we now know of the apparent stratigraphy of the South Boss Prospect. Host for Homestake's gold intercepts may be basal rhyolite lithic breccia, a talus breccia associated with a major fault (similar to "Ttbx" described below), or perhaps some type of semi-lithified sedimentary breccia or alluvium.

Besides the Falcon and Homestake holes, a few drill hole collars of unknown origin or designation have been found to the northeast and southwest along strike. These holes, most of which appear to be fairly old and are probably from the Houston Oil and Minerals era, are probably less than 100 feet total depth. Some are very shallow. Some appear to be geochemical exploration holes drilled on alteration or geochemical anomalies, or geologic projections. No records for these unknown exploration holes remain. Chips around the collar of one of these holes, located a few hundred feet west of D.H. #1561, indicated significant iron oxide and weak argillic alteration in basal "Boss" andesite (Figure 2).

Stratigraphy: Tertiary volcanics and volcaniclastics cap Ordovician cherty and siliceous siltstone basement in the southern Gilbert District. Tertiary rocks in the immediate area of the present Boss Mine consist of a basal rhyolite unit overlain by a basal "Boss" andesite unit. This basal andesite is host to the hematitic ores of the Boss deposit.

At least four facies constitute the basal rhyolite unit: (1) flow-banded rhyolite domes, (2) lithic rhyolite breccias, (3) tuffaceous rhyolite sediments, and (4) a welded tuff with basal vitrophere. All four facies outcrop within 3,000 feet of the Boss deposit. Clasts in the lithic rhyolite breccias and tuffaceous sediments are limited to the basal rhyolite facies and Ordovician black cherts and siltstones. The only rhyolite lithology within the Boss Pit appears to be the tuffaceous rhyolite sediment (in outcrop, roadcrop, and drill holes). Outcrops of all four rhyolite facies occur within 3,000 feet of the Boss deposit.

The basal andesite unit has two lithologic facies: andesite flows and andesitic tuff. Andesite flows are gray (fresh) and greenish gray (propylitized) and fine grained. The flows have 1% to 10% fine hornblende and feldspar phenocrysts in an aphanitic groundmass. Fresh outcrops to the northwest are columnar or finely flow jointed, and exhibit total thicknesses in excess of 100 feet. Andesite tuffs are light gray (fresh), light greenish gray (celadonic), and greenish gray (propylitic) with fine feldspar and hornblende phenocrysts in a very fine tuffaceous groundmass. Rare quartz grains are probably detrital.

Andesite flows always cap natural outcrops of andesite tuff, preserving them from erosion. The andesite is altered and mineralized within the Boss Pit, is altered in outcrop and drill holes along strike to the southwest and northeast, and is unaltered in outcrop to the northwest.

The Gilbert Andesite outcrops to the northwest of the Boss Mine and is assumed to be younger than the basal "Boss" andesite. Gilbert Andesite is a thick section of biotite andesite and hornblende biotite andesite flows, lahars, and necks that appear to be younger than the basal "Boss" andesites in the vicinity of the Boss Mine. Airfall tuffs and tuffaceous sediments are an important component of the Gilbert Andesite sequence, occurring between individual flows throughout the Gilbert district. In the southern part of the Gilbert District and north of the Boss Mine, on claims held by Atlas Mining Co. and J.K. Associates, these Gilbert Andesite interflow tuffs are argillized, silicified, and mineralized with anomalous amounts of gold. These interflow tuffs are over 50 feet thick in most places, and form potential host rocks for disseminated gold manto deposits in the medial and upper levels of an auriferous epithermal column.

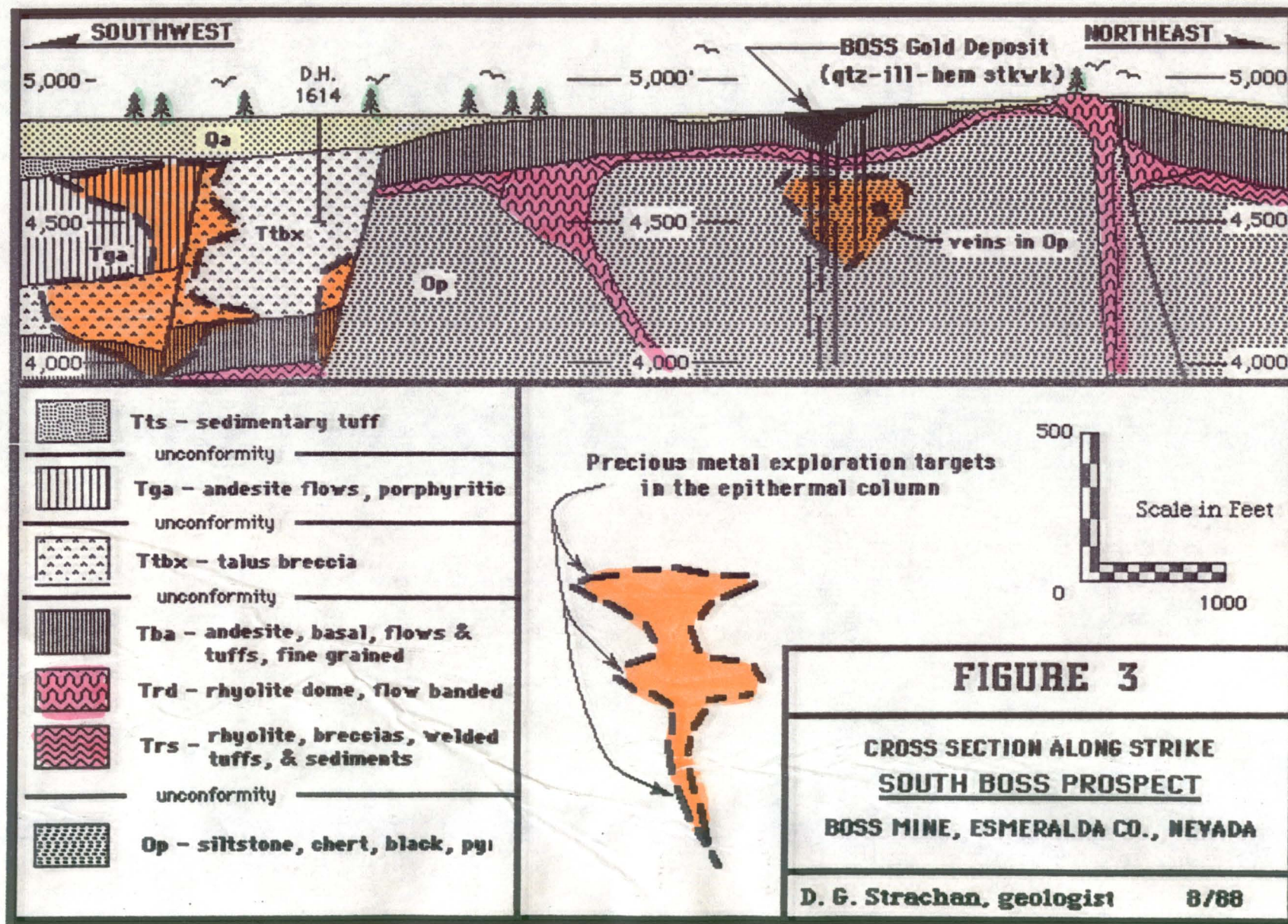
The South Boss area of present exploration interest (actually south, southwest, and southeast of the Boss Pit) is completely covered by pediment gravels and alluvium derived from the hills to the northwest. Economic stratigraphy of the South Boss Prospect is known only from limited drilling in the northeast end of the prospect area and by projection from known outcrop outside of the prospect area (see Figures 2 and 3).

Ordovician siliceous siltstone and chert basement (Op) is exposed only on the northerly and northeasterly margins of the South Boss Prospect. These basement outcrops are at Black Rock, The Swale, and a few low-lying knobs south and southeast of the Sylvester Hills (see Figure 2). Drill hole BR-31 (200' T.D.) is the only drill hole within the South Boss Prospect to encounter the Ordovician basement. The deepest hole within at South Boss, #1614 (350' T.D.), did not even penetrate the base of the Tertiary talus breccia (Ttbx, see Figures 2 & 3).

Several of the four facies of basal Tertiary rhyolite are exposed in the Tomany Hills, along outcropping margins of The Swale, and in the flats between the Watterson Hills and Sylvester Hills (Figure 2). Unaltered tuffaceous rhyolite sediments and overlying andesitic tuff form the lower "layers" visible in the Watterson Hills and Sylvester Hills. Both groups of hills are capped by unaltered, basal "Boss" fine-grained andesite.

Berg Ridge is a northeasterly line of peaks and saddles one and a half miles west-northwest of the Boss Pit, on the northern margin of the South Boss Prospect. Outcrops on Berg Ridge consist of unaltered flows, lahars, and interflow sediments of Gilbert Andesite. These volcanics were formerly much more extensive to the south, and have been either downfaulted or eroded within the bounds of the South Boss Prospect. On the west side of The Swale, Gilbert Andesite is in apparent fault contact with Ordovician siltstones.

Late Miocene-Pliocene tuffaceous and lacustrine sediments outcrop in Monty's Meadows and in the pediments southwest of the Tomany Hills (Figure 2). These "Esmeralda" sediments are younger than the Middle Miocene Gilbert Andesite. Their temporal position relative to the Boss mineralization is unknown. In several places in the Walker Lane, where gold occurrences are associated with Tertiary volcanic rocks, basal units of these Esmeralda tuffs are co-genetic with precious metal mineralization.



Structure: The basal Tertiary rhyolites and andesites dip 5° to 15° southeast where exposed in the Watterson and Sylvester Hills. These dips may change locally, as they apparently do below the present Boss orebody, where local apparent stratigraphic dip may approach 20° northwest and 10° to the southwest (as measured in drill holes at the base of the "Boss" andesite). These apparent dip changes may be related to subsidence of small subsidiary blocks in the hangingwall of the Bounding Fault (see discussion below), or large irregularities in the unconformable surface atop the basal rhyolite unit.

Stratigraphic dips in the Ordovician siltstone and chert basement are not described by this author or by Homestake (1987). An early (1979?) map with dip symbols found in Falcon's files suggests a broad, northeast-plunging anticline with a closure of more than a half-mile is exposed in The Swale (Figure 2).

Fracturing exerts the primary control on size, grade, and distribution of gold mineralization in the Boss Deposit. Northeast is the most prevalent Tertiary fracture direction in the area of the Boss Pit. "Fracturing" in this case means single fractures, close-spaced linear groups of fractures, single veins and veinlets, and outlines of tabular zones of stockwork fracture-veinlets. Most of these, especially within the Boss Pit, show strong northeasterly strike orientations. There are also subordinate northwesterly and westerly fractures and groups of fractures.

Numerous, parallel, northeasterly photo-linears were noted in outcrop and on pediment surfaces by Homestake during their 1987 evaluation. The most prominent northeasterly linear, a sharp, district-scale demarcation between fresh and altered rock, passes within three hundred feet of the northwest wall of the Boss Pit. This structural linear is termed the "**Bounding Fault**" for exploration purposes. The basal "Boss" andesite is offset down-to-the southeast approximately 200 feet across the Bounding fault in the vicinity of the Boss Pit.

Close-spaced northwesterly fracture sets are secondary, but important, to mineralization in the Boss pit. Abundance and density of northwesterly cross-fractures corresponds directly with better grades in the northwestern half of the Boss Deposit. Fractures striking northwest also outcrop in altered "Boss" andesite southwest of the pit.

Structure of the South Boss Prospect is known only from the limited drilling and outcrops around the margins of the prospect (Figures 2 and 3). Northeasterly fracture sets seen in outcrop and most intimately associated with gold mineralization in the Boss Pit, most likely continue for several miles beneath the alluvial gravels to the southwest.

Thick Tertiary talus breccia encountered by drill hole #1614 and the subsidence thus implied are the probable result of a large normal, down-to-the-southeast component of movement along a fault that passes between D.H. #1614 and D.H. #1560. This fault movement is most likely occurring along a part of the northeast fracture trend, accentuated by a cross-fracture system with an east-west or a northwest strike component. Completely preserved, buried structural intersections of this type, in the presence of auriferous epithermal columns, are favorable for large tonnage, disseminated, volcanic-associated gold deposits.

Alteration (hand specimen descriptions): The Boss Gold Deposit is a preserved portion of an auriferous epithermal column in volcanic rocks. Highest grade of alteration observed thus far in the Boss Pit is (1) quartz-illite-sulfide, oxidized to quartz-illite-hematite-scorodite. Successively less intense and oxidized alteration facies are: (2) illite-quartz-hematite, (3) illite-iron oxides-gypsum, (4) montmorillonite-hematite, (5) montmorillonite-chlorite-calcite-iron oxides-gypsum, and (6) chlorite-calcite-iron oxides. Illite-iron oxides-gypsum begins to give way to illite-pyrite within 60 feet of the original surface in the pit area.

Silica in these alteration facies is obviously introduced along fractures. Intensity of silica in the illite-quartz-hematite facies ranges from thin fracture coatings to partial silica flooding into andesitic wall rocks. Increasing intensity of epithermal silica introduction culminates in complete silica-sulfide flooding, replacement, and oxidation to quartz-illite-hematite-scorodite. Volumetrically minor siliceous "hydrothermal" breccias are associated with some of the highest grades in the Boss Pit.

Reddish brown hematite dominates the higher grade ore zones. Yellow-brown limonites combines with variable amounts of hematite in the hanging walls of the deposit. Pit mapping of the Boss Deposit has also revealed some remnant illite-quartz-pyrite zones in the hanging wall of the central part of the orebody. These unoxidized zones of argillic alteration increase in width and height down and away from the orebody, towards the northeast.

Greenish scorodite-limonite films and selvages occur along fractures in the quartz-illite-hematite-scorodite zone. Gypsum veins up to 3 cm thick occur along fractures in the illite-iron oxides-gypsum zone.

Illite-iron oxides, montmorillonite-hematite, and chloritic alteration of the basal "Boss" fine-grained andesite are in several thick intercepts in recent Falcon drill holes within the boundaries of the South Boss Prospect (Figure 2). A pale yellow-gray, illite-limonite matrix was noted in possible Tertiary talus breccia of the lowest 20 feet of drill hole # 1561, 100 feet southeast of drill hole # 1614.

The illitic breccia matrix of the talus breccia is possibly of epithermal origin, and may be an alteration of the fine fraction of a fault-related talus. This type of mineralized talus breccia can in the uppermost levels of an active, fault-controlled, epithermal column. As such, the altered matrix of the talus breccia in D.H. # 1561 (# 1614 was drilled with mud) is an indicator of epithermal activity along the normal(?) fault. The talus breccia, if mineralized and preserved elsewhere along the fault, constitutes an excellent host for a large tonnage, disseminated gold deposit.

Mineralization: The present Boss Gold Deposit consists of slightly more than 600,000 tons of material grading approximately 0.05 opt Au. Strip ratio is about 1.5. A single crusher dumps minus two-inch material onto a conveyor which carries the ore to a radial stacker. Ore is not agglomerated. Present rate of production is approximately 1,350 oz. Au per month.

Blast hole assays indicate the ratio of silver to gold in the Boss orebody is about 2.0. Highest grade of gold encountered in blast holes to date has been 0.40 opt Au (average of two ten foot assays over 20 feet). This high grade blast hole was located in the center of the quartz-illite-hematite-scorodite zone on the 4820 level.

Gold values in the Boss deposit decrease with decreasing alteration intensity. Most of the illite-quartz-hematite alteration facies is apparently ore grade (> 0.015 opt Au). A few isolated ore-grade blast holes are in the illite-hematite-limonite-gypsum facies. Portions of even the propylitic zones contain gold. The more fractured and hematitic the chloritic zones become, the more anomalous they are in gold.

The above relationships observed between host rock, structure, alteration, and mineralization in the Boss deposit also seem to hold true for anomalous zones along strike. Recent close-spaced fence drilling to the northeast by this author encountered anomalous gold in the basal Boss andesitic flows and tuffs. This anomalous gold (up to 0.05 opt Au) was directly associated with hematitic silicic, hematitic argillic, and hematitic propylitic alteration in association with steeply dipping fractures. The fractures have apparent northeasterly strike components.

Discussion, Conclusions and Economic Potential: The present Boss Gold Deposit is a quartz veinlet stockwork in illite-quartz alteration hosted by one or more fine-grained andesite flows. Fractures controlling the location of gold strike northeast. Subsidiary northwest fractures localize highest gold grades along the northeast strike of the deposit. The entire deposit is oxidized to limonites from the 4,900 level down to the 4,720 level. Basal Tertiary rhyolite tuffs and Ordovician siltstones form the footwall lithologies to the orebody. Neither of these footwall lithologies are known to host economic gold values.

Observed geologic characteristics place the Boss Deposit in the medial part of an auriferous epithermal column; above a possible lode environment and below a now-eroded "hot spring" environment. Even if paleosurface conditions were favorable for deposition and preservation of "hot spring" disseminated gold in the Boss epithermal column, the ores have been eroded. The Boss Deposit as it appears today is an erosional remnant of what may have been a more vertically extensive, auriferous epithermal column.

Alluvial and pediment gravels of the South Boss Prospect may preserve a more complete auriferous epithermal column. Besides andesite flows and sediments, a thick section of fault(?) related talus breccia is also present below the alluvium. This talus breccia could be the most favorable host for disseminated gold ore at South Boss.

South Boss could harbor from 2 million to 20 million tons of disseminated gold ore in one or more series of quartz-sulfide breccias, mantos, silicified talus breccias, or hot spring sulfide-oxide bedded precipitates. Mineable grades could range from 0.05 to 0.25 opt Au. Depending on the combination of grade, tonnage, and overburden, the potential ores at South Boss could be economic to depths of 400 feet.

INDEX No.	60003259
DISTRICT	Gilbert
DIST NUMBER	2000
COUNTY - If different from written on document	Esmeralda
TITLE - IF NOT OBVIOUS	Boss Mine, Esmeralda Co., Nevada
AUTHOR	Strachen, DG
PAGES-INCLUDING SUMMARY SHEET	
DATE OF DOC(S)	1988
FLAT FILE ONLY:	YES or <input checked="" type="radio"/> NO
MULTI DIST Y/N: LIST ADDITIONAL DISTRICT NAMES AND NUMBERS	
QUAD NAME	Devils Gate 7.5'
PMC - (mine, claim & company names)	Boss Mine; South Boss Prospect
Includes but is not limited to:	Falcon Exploration
COMMODITY(ies)	Gold
NOTES	Property report; handwritten notes; geology, assays, cross-section

Keep docs at about 250 pages if no oversized maps attached (for every 1 oversized page (>11x17) with text reduce the amount of pages by ~25)

	INITIALS:	DATE:
SS:	DD	6/16/2011
DB ENTRY:	TI	8-22-11
SCANNED:	MT	10.26.11
QA'd:		
EDIT DB:		