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THE BLACK BUTTE GOLD PROSPECT

MARICOPA COUNTY, ARIZONA

PROGRESS REPORT FOR CITY RESOURCES (CANADA) LTD.

September 14, 1987

Prepared by J. Lessman
Consulting Geologist

Missing
Fig's
5, 6 & 7

BUCK BUTTE GROUP (A)

THE BLACK BUTTE GOLD PROSPECT

MARICOPA COUNTY, ARIZONA

PROGRESS REPORT FOR
CITY RESOURCES (CANADA) LTD.

14 September, 1987

Prepared by: J. LESSMAN

James L Less

Consulting Geologist

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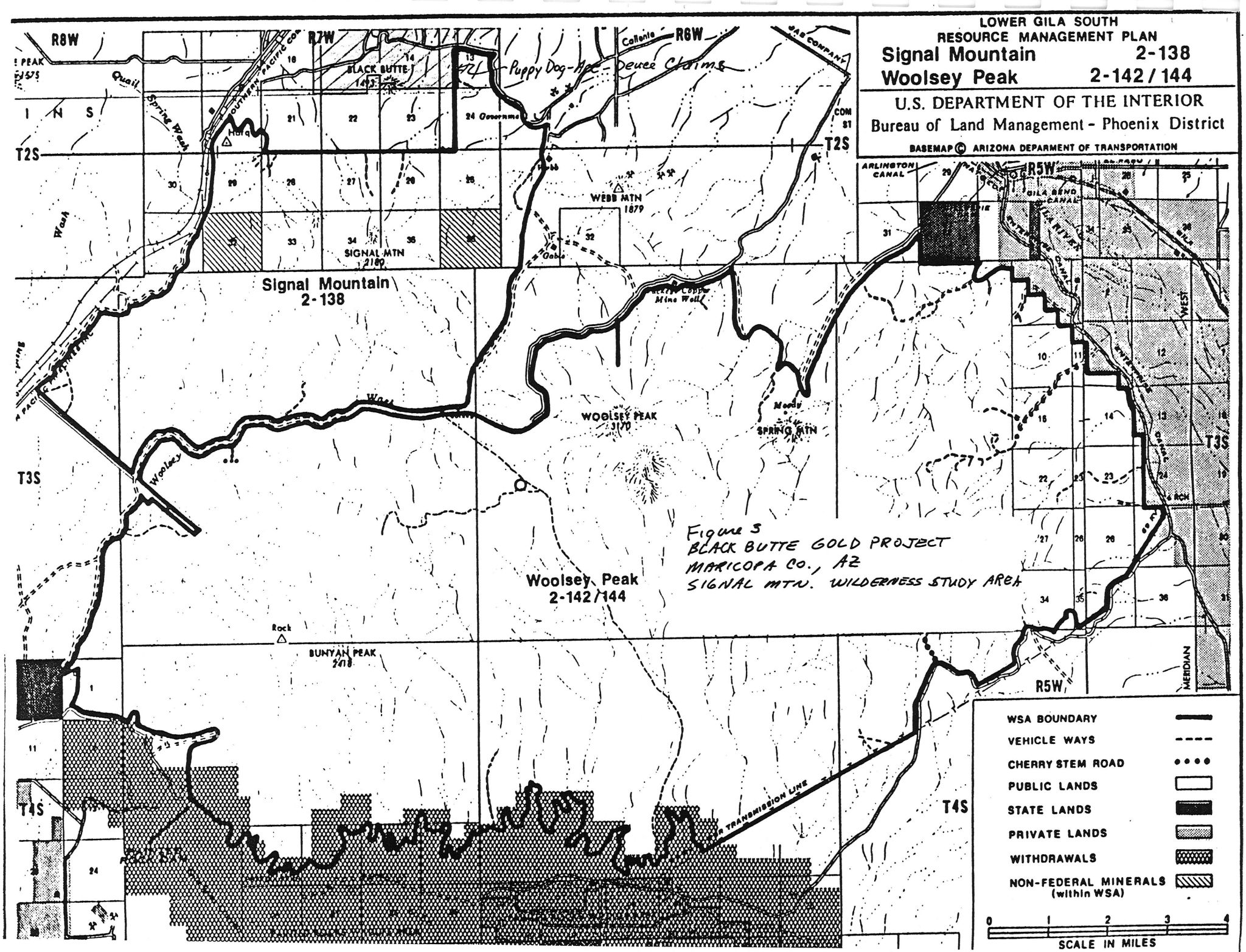
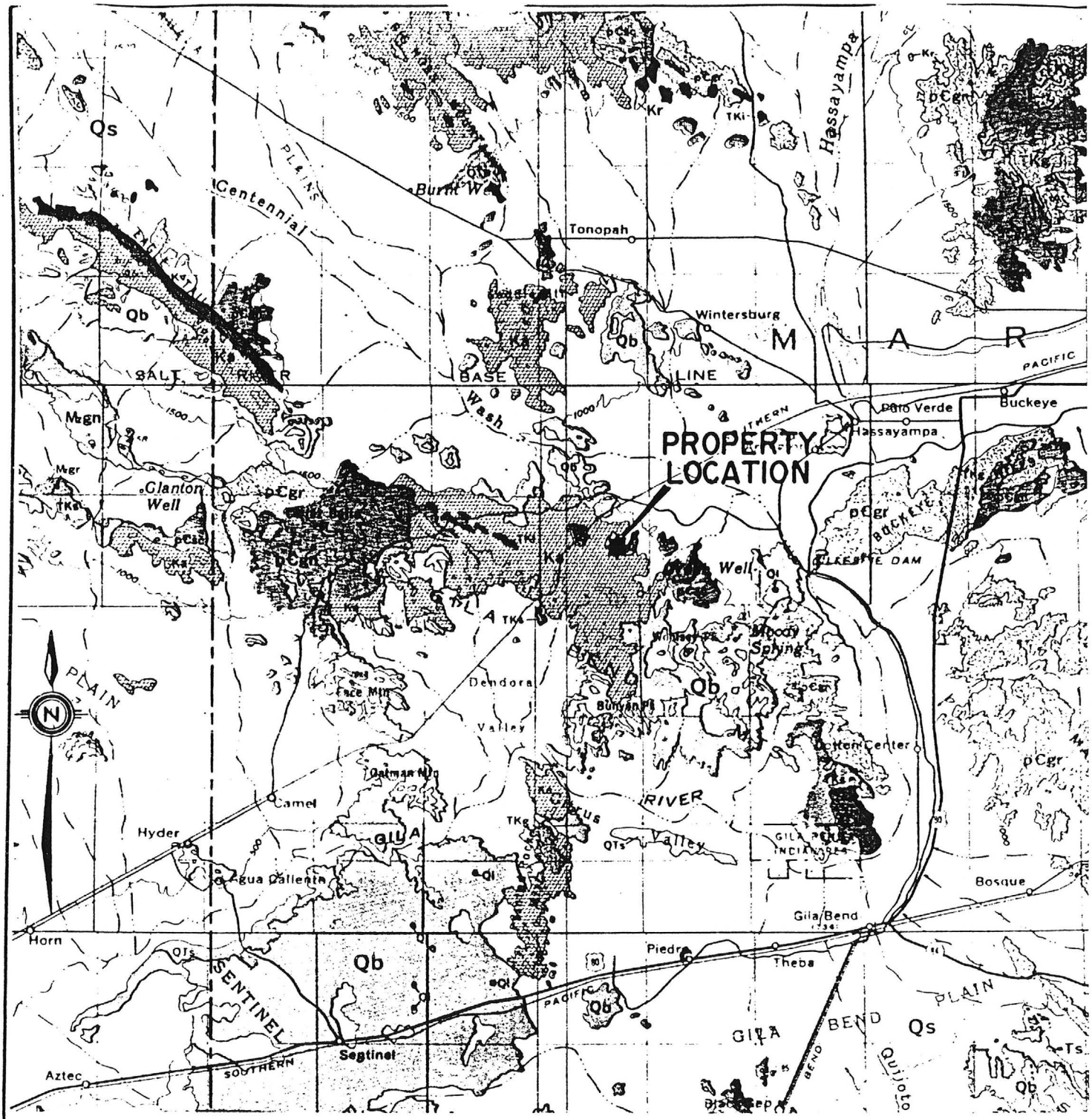

LOWER GILA SOUTH
RESOURCE MANAGEMENT PLAN
Signal Mountain 2-138
Woolsey Peak 2-142 / 144
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management - Phoenix District
BASEMAP © ARIZONA DEPARMENT OF TRANSPORTATION
Signal Mountain
2-138
Woolsey Peak
2-142/144
Puppy Dog-Hee-Deuce Claims
BLACK BUTTE
WEBB MTN
1879
SIGNAL MTN
2160
WOOLSEY PEAK
3170
SPRING MTN
BUNYAN PEAK
2018
Mesa Copper Mine Well
ARLINGTON CANAL
GILA BEND CANAL
GILA RIVER
CENTRAL ARIZONA CANAL
Figure 5
BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
SIGNAL MTN. WILDERNESS STUDY AREA
R8W
R7W
R6W
R5W
T2S
T3S
T4S
WSA BOUNDARY
VEHICLE WAYS
CHERRY STEM ROAD
PUBLIC LANDS
STATE LANDS
PRIVATE LANDS
WITHDRAWALS
NON-FEDERAL MINERALS (within WSA)
0 1 2 3 4
SCALE IN MILES



LEGEND

PLEISTOCENE

- Qs SEDIMENTARY DEPOSITS – ALLUVIAL
- Qb BASALT
- Qi DIKES

UPPER CRETACEOUS

- Tki GRANITE, RHYOLITE
- Tkg GRANITE
- Tks SEDIMENTARY

LOWER CRETACEOUS

- Ka ANDESITE FLOWS & TUFFS

PRECAMBRIAN

- pCgr GRANITE
- pCgn GNEISS
- pCsc SCHIST

REGISTERED PROFESSIONAL GEOLOGIST
STATE OF ARIZONA
John R Poloni

FIGURE 4

RHYOLITE RESOURCES INC.

BLACK BUTTE GOLD PROJECT

PUPPY DOG GROUP

GEOLOGY

MARICOPA COUNTY

ARIZONA, USA

JOHN R. POLONI & ASSOCIATES LTD.

Drawn J.R.P.	Checked J.R.P.	Plan No.
Scale 1:50,000	Date MAY 12 1983	4

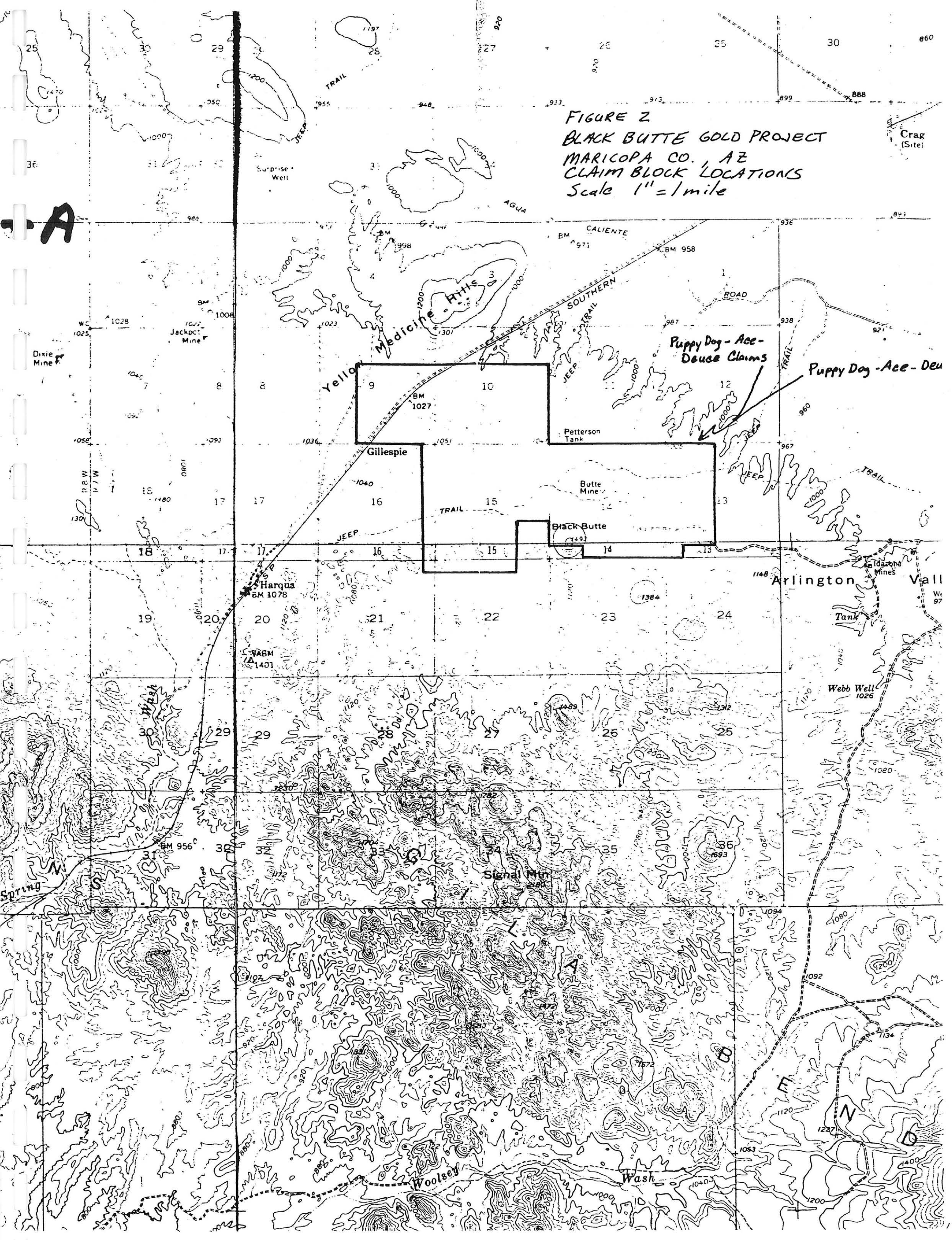
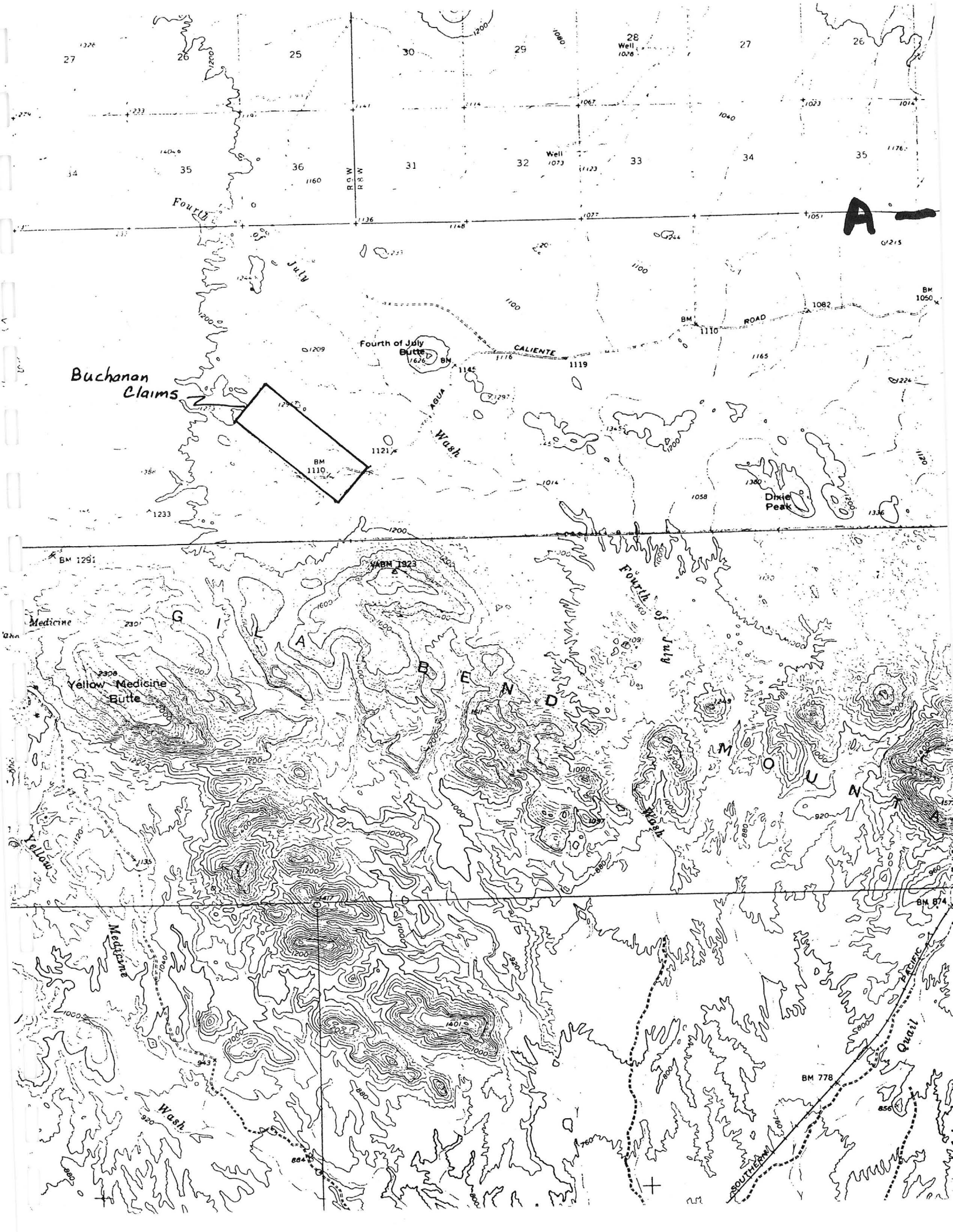


FIGURE 2
BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
CLAIM BLOCK LOCATIONS
Scale 1" = 1 mile
Puppy Dog - Ace - Deuce Claims
Puppy Dog - Ace - Deu
A
JEEP TRAIL
Surprise Well
AGUA CALIENTE
SOUTHERN
Yellow Medicine Hills
Jackpot Mine
Dixie Mine
Gillespie
Petterson Tank
Butte Mine
Black Butte
Harqua
Arlington Valley
Idaho Mines
Tank
Webb Well
Signal Mtn
Woolsey Wash
Spring
Crag (Site)
GILA BEND
ROAD


A
Buchanan Claims
Fourth of July Butte
Fourth of July
Wash
CALIENTE
ROAD
Dixie Peak
GILA BEND MOUNTAINS
Yellow Medicine Butte
Medicine Wash
Yellow
Quail
PACIFIC
SOUTHERN
BM 1291
BM 1110
BM 1050
BM 874
BM 778
VABM 1923
Well
R.6W
R.5W

INTRODUCTION

An option covering two separate claim groups located in Maricopa County, Arizona was acquired by City Resources (Canada) Ltd. in August 1987. Previous exploration and data review by City Resources indicated gold-copper mineralization on the northern flank of Black Butte to be the most prospective area on the two claim blocks. The authors were contracted to conduct an assessment work program consisting of mechanized trenching, mapping and sampling of the trenches and a general evaluation/examination of the mineralization, particularly the structural control and distribution-size of the mineralized zones. A short field program of two to three weeks to be completed in early September was approved.

Field work commenced on 15 August and was completed on 4 September, 1987. Assessment work requirements on the two claim blocks were met by the field program and appropriate reports and affadavits will be filed.

This report summarizes the results of the field program but does not include a review of the analytical results which are pending. A large number of rock chip samples were collected and a thorough review or evaluation of the program will require incorporation of the analytical results with the field observations.

GENERAL SETTING

The Black Butte Gold Project area is located in desert terrain of southwestern Arizona about 80 miles west of Phoenix (Fig. 1). The two separate claim blocks, Puppy Dog-Ace-Deuce and Buchanan, are Federal lode claims on BLM land within Maricopa County and located about 8 miles apart. The small farming community of Buckeye is the nearest town to offer logistical support. Access to the claims is via the Agua Caliente Road which extends westward from Old Hiway 80 and then via unmaintained roads and tracks which cross the claim blocks (Fig. 2). Four wheel drive is not necessary if care is taken.

Vegetation is typical of the Sonoran Desert with abundant creosote, ocotillo, cactus, mesquite and palo verde. Topographic relief is minimal in both blocks as they lie on a pediment surface on the northern flank of the Gila Bend Mountains. Summer weather is hot and dry with occassional thunderstorms.

The two claim blocks comprise 131 unpatented lode claims. The Puppy Dog (1-53)-Ace(1-32)-Deuce(1-30) block has 115 and the Buchanan block consists of 16 claims.

The Puppy Dog-Ace-Deuce claim block is sub-adjacent to the Signal Mountain Wilderness Study Area which lies to the south and east of the block(Fig. 3). The eastern margin of the claim block appears coincident with part of the wilderness study area. The BLM is very sensitive about surface disturbance within the study area.

PREVIOUS EXPLORATION

Early prospecting for copper-gold is evident by numerous hand dug pits and several deep shafts in the Butte Mine area near Black Butte. No evidence of significant production was seen, although ore may have been carted to water for milling and treatment.

The Gila Bend Mountains were explored in the 1960's and early 1970's by various companies looking for porphyry copper deposits. Both Superior and Freeport conducted limited but deep drilling programs in the Black Butte area.

The current history of the project dates to the early 1980's when Harold

Best and Beverly Hinrichs acquired the claims and completed a packsack drilling program. Rhyolite Resources became involved in 1983 and conducted an extensive soil sampling and geological mapping program followed by drilling of nine diamond drill holes (AZ-1 to 9). The results of the Rhyolite program are well documented and available for review. The earlier work by the Best-Hinrichs program is not well documented.

Texasgulf became interested in the project in 1985 while doing reconnaissance for bulk mining gold deposits in the Mohave-Sonora Deserts, particularly those deposits with detachment fault characteristics (e.g. Mesquite, CA). Texasgulf completed geologic mapping, soil and geobotanical surveys, IP, VLF, radiometric and ground magnetic surveys and drilling of 10 percussion holes (BLB 86-1 to 10). This work is also well documented and available for review.

Drill core from the Rhyolite program is stored at the Desert Rose, the local watering hole in Arlington. Drill cuttings from the Texasgulf program are in storage in Reno and may be available for study.

WORK ACCOMPLISHED

The following list includes the work completed during the field program. Tables listing the trench locations and samples with locations and descriptions are presented in Tables 1 and 2. Recon samples, trenches, grid baselines and claim boundaries are shown on Figure 5, an overlay to cover the 1"=500' scale airphoto mosaic (also fits Texasgulf geology plan-Fig. 6).

WORK ACCOMPLISHED

1) review of reports by previous explorers
2) recovery of 5000 feet of baseline (Rhyolite Grid)
3) reconnaissance of gridded area for significant alteration zones
4) detail mapping (1"=50') and sampling of the Butte Mine area
5) examination of the Buchanan claims
6) backhoe trenching (18 trenches totalling 1593 feet)
7) mapping and sampling of trenches

A total of 178 samples was collected during the field program. Samples BB 87-1 to 164 are rock chip collected from the Puppy Dog claims. Samples BUC 87-1 to 10 include eight rock chip, one stream silt and one pan concentrate from the Buchanan claims. Samples DX 87-1 to 4 are rock chip from the Dixie prospect located between the two claim blocks. All samples were sent via Greyhound Bus Lines to Chemex Labs in Sparks, NV. Gold (30 g. wt.) geochem and 11 other trace elements (T-11 package) were requested for all rock chip samples.

REGIONAL GEOLOGY

The two claim blocks lie on the northern flank-pediment of the northwest trending Gila Bend Mountains (Fig. 4). Intermediate volcanics of Laramide or mid-Tertiary age overlie Precambrian gneiss and granite basement in the core of the range. Quaternary or Late Tertiary basaltic volcanics are common at the eastern end of the range near Woolsey Peak. The state geologic map indicates a Laramide or mid-Tertiary intrusive belt to occur along the northern side of the Gila Bend and Eagle Tail Mountains. This WNW intrusive trend is mapped over 35 miles and is subparallel to the regional trend indicated by the trend of the ranges themselves.

SUMMARY AND CONCLUSIONS

The Black Butte Gold Project includes two separate claim blocks located in the southern part of the Basin and Range Province about 80 miles west of Phoenix, Arizona. A short field program of backhoe trenching and sampling to test the width and determine the character of the mineralization was approved. Analytical results are pending thus this report discusses field observations only.

Mid-Tertiary to Quaternary volcanic rocks overlie Precambrian and possibly Laramide granitic basement in the Gila Bend Mountains and its northern flank-pediment where the claim blocks are located. Known copper-gold vein mineralization has attracted exploreres for porphyry copper targets and more recently gold explorers. Geological and geochemical surveys followed by scout drilling have been completed by Rhyolite Resources (1983) and Texas-gulf (1986).

A total of 18 trenches were excavated, mapped and sampled. Detailed mapping of the Butte Mine area and limited reconnaissance were also completed. All 178 samples have been sent to Chemex Labs in Sparks, NV for analysis.

Granitic basement, probably Precambrian but possibly in part Laramide, is exposed in windows on the Gila Bend Mountain pediment. Intruding the granitic rock are andesitic dikes of probable mid-Tertiary age. Coeval volcanics of andesitic composition flank the area of current interest. Younger basaltic volcanics of Late Tertiary-Quaternary age overlie the andesitic volcanics and granitic basement. Vein mineralization with relatively narrow alteration envelopes is hosted in the granitic-dike intruded basement. The age of mineralization is probably mid-Tertiary and related to the andesitic diking and volcanic event.

All veins are narrow (less than 1 foot) with limited strike continuity (50-150 feet) and commonly have narrow sericite alteration envelopes of a few feet. Wider zones if sericite ± carbonate alteration are known but do not seem related to the mineralization. Visible gold is present in some veins as reddish gold blebs associated with secondary copper minerals. This free gold is undoubtly supergene in origin (reddish color due to high copper content ?) as weathering/oxidation is well developed and deep.

The mineralized structures mapped and sampled are too narrow and of such limited continuity to sustain any reasonable mining operation. The adjacent altered rock is sulfide and veinlet deficient and probably not mineralized; thus bulk mining is also unlikely. Other styles of mineralization and alteration may exist on the claim blocks where the current program did not explore.

The Buchanan claims do not have any signs of economic mineralization or alteration and are considered very poor exploration ground.

RECOMMENDATIONS

Until the analytical results are incorporated with the field observations, only tentative conclusions and recommendations can be made. Obviously, it is recommended a thorough review of the analytical results be made prior to conducting any further field work. This review will determine if enough trench sampling has been completed and whether any wide zones of gold mineralization are present.

Overlooked in the current field program are several weak gold soil anomalies in the Black Butte area. For completeness, additional soil sampling at 25 or 50 foot intervals over these anomalies is recommended with backhoe trenching or shallow drilling to test any specific targets. The current soil spacing (100 X 200 feet) is probably too wide to effectively test as known mineralization-alteration is relatively narrow and discontinuous.

Assuming the analytical results are going to confirm the lack of width and continuity to the vein mineralization, no further work is recommended on these targets. Although other hydrothermal systems are not reported by previous explorers, the mid-Tertiary volcanics in the Black Butte area could host alteration-mineralization similar to that seen at the Dixie prospect located between the Buchanan and Black Butte areas. Several samples were collected from the Dixie prospect to determine if the system is auriferous. Reconnaissance of the Ace-Deuce claims in the Black Butte area and elsewhere in the Gila Bend Mountains for mid-Tertiary volcanic hosted mineralization may be warranted.

TABLE 1 BACKHOE TRENCHES

Trench No.	Length (ft)	Location
TR BB 87-1	204	Butte Mine Area Fig.7
TR BB 87-2	232	Butte Mine Area Fig.7
TR BB 87-3	108	Butte Mine Area Fig.7
TR BB 87-4a	55	Butte Mine Area Fig.7
TR BB 87-4b	130	Butte Mine Area Fig.7
TR BB 87-5	83	Butte Mine Area Fig.7
TR BB 87-6	74	00E, 1465S Fig.5
TR BB 87-7	66	150E, 1315S Fig. 5
TR BB 87-8	58	3000E, 525N Fig.5
TR BB 87-9	34	2550E, 200N Fig.5
TR BB 87-10	50	2800E, 250S Fig.5
TR BB 87-11	49	400E, 750S Fig.5
TR BB 87-12	49	2870W, 500N Fig.5
TR BB 87-13	71	4250W, 00N Fig.5
TR BB 87-14	46	4350W, 950N Fig.5
TR BB 87-15	109	4200W, 1100N Fig.5
TR BB 87-16	67	3700W, 750N Fig.5
TR BB 87-17	42	3835W, 650N Fig.5
TR BB 87-18	66	3950W, 600N Fig.5
18 trenches	1593 total	

Precambrian and Laramide granitic rocks were examined in the Buckeye Hills. The Precambrian granite is coarse grained biotite granite with large K-spar phenocrysts. Epidote and buck quartz are common as are inclusions/ blocks of amphibolite schist. The Laramide granite is medium grained biotite quartz monzonite with a weakly developed foliation and flat lying pegmatitic zones.

PUPPY DOG CLAIMS

Local Geology and Mineralization

The Puppy Dog claims cover the area around Black Butte including the known mineralized areas at the Butte Mine, Water Tank area and Eastern Quartz Monzonite (Fig. 5). Precambrian and possibly Laramide granitic rocks occur as windows in cover of Late Tertiary basalt flows (e.g. Black Butte) and mid-Tertiary intermediate volcanics (e.g. volcanics near Petterson Tank) on a well developed pediment surface (Fig. 6). The granitic basement is indicated by the lighter colored areas on the color air photos. Numerous pegmatitic quartz veins and blows enhance this light color signature. Granitic rocks vary from gneissic granite at 00E, 2000S to equigranular quartz monzonite (muscovite ± biotite) to fine grained biotite quartz monzonite. The equigranular quartz monzonite is the most common and widespread phase. Rare inclusions of blocks of schist have been seen in the quartz monzonite (east end of TR BB 87-2). Porphyritic rocks including dacite/monzonite occur within the quartz monzonite, commonly with indistinct contacts suggesting a common origin. The granitic basement has general characteristics similar to both the Precambrian and Laramide granitic rocks examined in the Buckeye Hills. Thus the age can not be confidently stated without further work.

Intruding the granitic basement are andesite to dacite dikes and less commonly basaltic or mafic dikes, Dike contacts are commonly sheared and gougy indicating fault control to the emplacement of the dike and subsequent shearing as well(reactivation of existing faults?). Northeasterly dike trends are common but other directions do occur, particularly northwesterly. The dikes vary from one to 50 feet in width with 3-15 feet more coomon. Dikes are widespread and numerous forming anastomosing swarms such as at the Butte Mine area (Fig. 7).

Overlying the granitic basement are dark andesitic volcanics and volcaniclastics of probable mid-Tertiary age (called Petterson Tank by Texasgulf). These volcanics are best exposed south and west of Black Butte and near Petterson Tank. Very few exposures were examined as the volcanics have been eroded from the area of current study. The similarity in composition and probable age of the volcanics and the dikes infers a common origin.

Basaltic flows and cones (e.g. Black Butte) overlie the andesitic volcanics and granitic basement, These rocks were not examined but vesicular to amygdaloidal basalt boulders are common float on the claims. The mafic-basaltic dikes may be related to this Late Tertiary-Quaternary episode of vulcanism.

Pediment gravel, basaltic talus and caliche cover much of the area examined, particularly on the crests and upper slopes of between-wash ridges. Caliche cemented rubble and beds can be quite thick as indicated by current trenching and previous drilling (up to 30 feet). Caliche veins can be seen to extend to several feet below bedrock indicating the present surface may be quite old and/or a Late Tertiary surface (pre-basalt) which has been

re-exposed during Recent times. At least two ages or levels of caliche development can be seen in some areas (near AZ-9).

Alteration and veining of several types has been identified. Without the analytical results only tentative conclusions can be made as to which is more important to locating mineralization. Two general alteration types were seen: sericite±hematite±carbonate alteration of granitic and dike rocks and kaolinite ± hematite ± sericite (bleaching) of granitic phases and some dike rocks, usually sheared or fractured. Known mineralization consisting of narrow (1" to 4") quartz-hematite-carbonate-copper veins associated with shears, faults and dike contacts commonly has a sericite±hematite±carbonate alteration halo or envelope of several inches to several feet. Wider zones to 50 feet of sericite alteration, particularly in the quartz monzonite, may not be related to a specific structure or vein. Bleaching is widespread and affects wide zones. This alteration facies may be more a weathering effect than hydrothermal alteration.

Veins consist of three major types: 1) quartz-hematite±carbonate±copper minerals (secondary after chalcopyrite), 2) dark carbonate (Fe-rich)±barite± copper minerals±hematite, and 3) white quartz±hematite. The first type is auriferous as indicated by previous work and visible gold in several veins sampled during the current program. These veins are always narrow and structurally controlled, ie in fractured or sheared rock usually at or near an andesite dike contact. The second type, carbonate-rich, are more widespread and not always structurally controlled, commonly with flat or shallow dips (particularly those with barite). The third type of veins are pegmatitic and not hydrothermal. Although the quartz veins in Trench BB 87-8 could be an exception.

No extensive zones of stockwork or network veining were seen. Fracture zones are narrow, usually less than five feet, and wide spaced such that no obvious bulk-mining targets were developed.

Eastern Quartz Monzonite

The large quartz monzonite body mapped by Texasgulf and Rhyolite on the eastern side of the grid area (Fig.5) has a pronounced white color anomaly on the air photos. This large body has few exploration pits with recent work concentrating on the western contact near an abandoned shaft (drill holes AZ 7-9). The granitic/quartz monzonite body is cut by numerous quartz blows and is locally gneissic in structure. Andesite dikes intrude the granitic basement but are not as numerous nor as wide as in the Butte Mine area. Narrow, dark carbonate cemented breccia veins occur at several locations in the granitic rock(e.g. TR BB 87-10). Siliceous-hematite altered zones up to 25 feet wide also occur within the granitic basement where intense fracturing and brecciation have taken place (TR BB 87-8 and BB 87-22). Although no evidence of copper staining was seen, these zones could mineralized.

The exposure is excellent within this granitic body thus it is unlikely any significant zones of alteration could have been missed by the recon or previous explorers. Biogeochemical anomalies to the east of this area were checked and found to be underlain by granitic basement and mid-Teriary volcanics. Weakly chloritic hornblende granodiorite intruded by andesite dikes trending N10-20E forms the basement. The volcanics cap the ridge crest in the immediate vicinity of the biogeochemical anomaly. A narrow(0.7') barite-calcite breccia vein trending N80E40N which occurs in sheared unaltered granodiorite (BB 87-20) was the only evidence of possible mineralization.

Water Tank Area

This area lies near the western end of the gridded area and is centered around a water bore (BLB 86-4) and a metal water storage tank (Fig.5). Old hand dug prospect pits and newer bulldozer trenches expose narrow mineralized structures and wider, weak alteration zones in the granitic basement. The general geology is similar to that at the Butte Mine area and eastern quartz monzonite. Dike trends and contacts are more easterly(N60-70E) and northwesterly faults and shears appear to be more common. These latter structures exhibit left lateral displacement which is compatible with the regional structural history in southwestern Arizona.

Copper-bearing structures were tested by Trenches BB 87-12, 14-18 with TR BB 87-13 testing a zone of carbonate-breccia veins and veinlets in quartz monzonite. The most interesting trench in this area is TR BB 87-15 which crosses several narrow quartz-copper vein structures. This is the best mineralized area the Butte Mine area. Trenches BB 87-16 to 18 expose a 500 foot long barite±quartz±carbonate±coppper vein zone at or near an andesite dike contact. This structure extends northeasterly from BLB 86-3 (Texasgulf hole) and is marked by several shallow pits into the baritic vein. Trenching exposed only narrow zones (1-3 feet wide) of veining without significant alteration envelopes.

The structures examined in the Water Tank area appear very narrow, although strike continuity is well developed, and of little economic interest. The area near TR BB 87-15 may warrant more work if the weakly altered rock between the veins carries any gold.

BUTTE MINE AREA (G. Cleveland)

A number of copper-bearing vein occurrences are concentrated in the vicinity of the old Butte Mine; and are exposed in numerous prospect pits and trenches. Available geologic maps by prior project operators are at scales of 1:6000 and 1:2400 and are not sufficiently detailed to work out the relationships of individual structures. Therefore, a detailed map of the Butte Mine area was prepared at a scale of 1:600 (Fig.7), and rock chip sampling of the vein system and various associated rocks and alteration zones was carried out. In addition, five new backhoe trenches were excavated in this area for a total of 819 feet of new trenching. Two of the new trenches (87-1 and 87-4b) are along older shallow backhoe trenches with poor exposure which are in key areas; a third new trench (87-2) is along an old bulldozer scrape with similarly poor prior exposure. The 1987 trenches were mapped at a scale of 1:120 and selectively sampled (Figs. 8 to 12). A total of 82 rock chip was collected in the Butte Mine area. Chip sampling was designed to test both the narrow vein structures for gold content and adjacent altered rocks and other areas of hydrothermal alteration for wider zones of low grade gold values.

Workings. Workings at the Butte Mine consist of numerous old prospect pits from 6 inches to 8 feet deep and two inclined shafts which appear to be about 40 to 50 feet deep. No lateral workings were observed to extend from the shafts. Dump sizes are fairly small, and it is likely that little to no commercial production came from the Butte Mine.

General Veined Zone. Vein occurrences in the Butte Mine area occur in a northeast trending zone over a length of approximately 600 feet and distributed over a width of 100 to 200 feet. Occurrences of veining and/or alteration 1200 to 1600 feet southwest of the Butte Mine area may lie on the same structural zone (near TR BB 87-6 & 7).

Lithologies. Veining is spatially and probably genetically related to a swarm of dominantly andesitic dikes which intrude quartz monzonite. Muscovite is normally the accessory mineral in the quartz monzonite and the rock

is white in color. Biotite quartz monzonite is less common. Pegmatitic or graphic granite phases occur in the muscovite quartz monzonite. Veins and pods of massive quartz with minor feldspar are abundant and appear to be closely related to the pegmatitic bodies. The most common dike rock and type which is most closely associated with veining is andesite. The andesite is generally fine-grained with small phenocrysts of plagioclase and lesser pyroxene(?). Dikes of mafic andesite or basalt and dacite or quartz latite also occur. The mafic dikes may be the youngest, while the dacite/latite intrusives are often hydrothermally altered and may be older than the andesite rocks. Bodies of dacite/latite thicker than about 20 feet are somewhat coarser grained and contain a granular medium-grained feldspathic groundmass in addition to the phenocrysts of plagioclase, potssium feldspar(?), and quartz.

Dikes occur in many orientations but generally trend N10-60E. Other common orientations are N60W and N10-20W. Dip angles are normally steep, but shallow contacts are fairly common. Dike contacts are often faulted, or less commonly show evidence of faulting in the quartz monzonite prior to intrusion of the dike. Dikes sometimes contain inclusions of quartz monzonite.

Rare foliation in the quartz monzonite and the common pegmatite quartz "veins", based on a limited number of orientations, seem to trend N60-90W.

Structure. Numerous faults of apparent small-scale offset occur throughout the area, and the fault pattern is fairly complex. The most commonly observed fault set occurs along or parallel to dike contacts which strike N10-30E and dip steeply west. These faults are the loci of most of the vein mineralization. As noted above, these faults occur most commonly at dike contacts or show evidence of having existed in the quartz monzonite prior to intrusion of the dikes, It is likely that this set of faults served as the main conduits for dike intrusion and that later adjustments resulted in further small movements along the dike contacts. A second set of faults strikes approximately N60-80W with near vertical dips and commonly offset dikes by a few feet, often with left lateral apparent slip. Fractures and joints parallel to these faults often control minor carbonate veining and some of the hydrothermal alteration. A third set of faults is a group of flat to shallow dipping structures. The flat faults are poorly documented but appear to show only minor displacement in the Butte Mine area. No significant vein mineralization occurs on these structures in the Butte Mine area, but carbonate-barite dominated veins are known to occur on similar structures elsewhere on the property. In one instance at the Butte Mine in a pit near 100N, 70E, a steeply dipping vein shows no displacement but seems to change character at its intersections with flat faults. Curiously, fault gouge and breccia along the flat faults are often cemented by a caliche-like carbonate which may reflect groundwater movement along these structures.

Thin "veins" and surface occurrences of a dense lithified(?) caliche are fairly common in the Butte Mine area, and, as described under general property geology, probably reflect the development of caliche on older (Tertiary) erosion surfaces and in cracks below those surfaces.

Alteration. Hydrothermal alteration of all rock types except the mafic andesite/basalt dikes is common in the Butte Mine area. However, the alteration is normally structurally controlled rather than pervasive; that is, it occurs in zones a few inches to a few tens of feet in width adjacent to dike contacts and faults with or without veins. Wider zones of fairly strong hydrothermal alteration do occur as in TR BB 87-3 with a 30 foot wide zone

and in TR BB 87-4b with a 100 foot wide zone. No significant increase in intensity of copper-bearing vein mineralization appears to be associated with these wider alteration zones; in fact the opposite may be the case.

Alteration of the quartz monzonite results in the development of sericite at the expense of feldspar with accessory carbonate and locally red hematite which is probably after disseminated specularite. Hematite is particularly common in altered zones which seem to have developed from biotite quartz mnozonite. In strongly altered quartz monzonite most feldspar is converted to sericite. In weakly altered quartz monzonite (map unit) only a small percentage of the feldspar(less than about 30%) is converted to sericite, or the sericite is confined to patches of the rock or occur only along fractures. Sericite ranges from white to apple green in color and is most commonly pale green. Some varieties are fairly coarse grained, particularly where it appears to have developed in biotite quartz monzonite. In general, the quartz monzonite, especially the muscovite quartz monzonite, appears to have been the rock most susceptible to hydrothermal alteration.

Sericite-dominated alteration also occurs in the dacite/latite and locally makes this rock difficult to distinquish from the quartz monzonite. Altered dacite/latite usually contains abundant white clay (kaolinite?), some or all of which may result from weathering of the primary alteration mineral suite.

Andesitic dikes are dominated by a carbonate-hematite alteration suite which is usually mapped as being only weakly developed. Strongly carbonate-altered andesite does occur, generally over fairly narrow (less than 10 feet) zones. It is emphasized, however, that it is particularly difficult to distinquish the effects of alteration and weathering in these fine-grained rocks. Without subsurface and microscopic information the mapping of this alteration type is considered tentative. Sericite is a likely minor constituent of the carbonate alteration suite, at least locally, and strong sericite alteration affects the andesite dikes at certain locations. Intense carbonate alteration or sericite alteration of the andesite is normally associated with the development of a stockwork of brown to black iron-bearing carbonate veinlets over zones up to 10 feet in width. In most instances, however, as at a pits near 150S, 10W; 250N, 90E and 160N, 100E, the development of stockworks of carbonate veinlets appears to occur at the intersection of the NE quartz vein-bearing structures with WNW striking fractures containing carbonate veinlets. Thus, the carbonate stockworks may be limited to intersection areas rather than being more extensively developed.

Mineralization. In the Butte Mine target area, vein mineralization is common and fairly widespread but appears to be only weakly developed. Veins usually occur along or closely associated with dike contacts, and many show evidence of prior faulting. Although they occur on dike contacts, veins often diverge locally from the contacts. Most veins strike N10-30E, and veining generally does not occur on dike contacts which strike N40-60E. One significant vein occurrence in a pit near 130S, 45E, which lies on the south projection of the vein in the south shaft(20N, 65E), strikes N30W. Most quartz veins dip steeply west, although east dips are also known. In detail, vein orientations can change significantly over short distances.

Veins consist of two types based on mineralogy: 1) carbonate with or without accessory drusy quartz, and 2) quartz with accessory carbonate, hematite, and copper minerals. Copper minerals include malachite and azurite, chrysocolla(?), chalcocite and chalcopyrite. Chalcopyrite was seen only at

the southern shaft as a core in a grain of chalcocite. It is probable that the primary copper mineral of the veins is chalcopyrite with the chalcocite and copper carbonates developed from chalcopyrite by the effects of secondary oxidation. Red hematite in the veins probably developed from chalcopyrite and from specularite which is observed rarely. Other than the two copper sulfides, no other sulfide minerals were observed or can be inferred to occur in the veins. Visible gold occurs in at least two of the quartz-copper veins in the Butte Mine area- one at the south shaft and another in TR BB 87-1- and it is the quartz-copper veins which are of primary interest for gold content.

Veins are generally quite narrow, that is less than one inch thick. Thicker quartz veins in the Butte Mine area range up to 4 inches in thickness. Commonly two or more veinlets less than one inch thick occur in a zone 0.5 to 1 foot in thickness. The widest known veined zone occurs in the small trench in the road 35 feet south of the south shaft where the veined zone is 5 feet wide. Some of the veinlets in this zone and at other locations seem to have developed by silicification in a narrow selvage adjacent to thin fractures.

Individual veins do not show much continuity along strike. For example, only about 100 feet of strike length can be demonstrated for the vein through the south shaft, from the shaft south to the pit near 30S, 45E where the vein appears to change strike to N30W. No strike extensions of the vein were found in TR BB 87-1 to the north or in TR BB 87-3 to the south. A strike length of only about 80 feet can be confirmed for the vein through the north shaft (170N, 60E), although this vein may link with one or both of the two veins to the north by changes in strike direction for a possible further strike length of 50 to 150 feet. Even at the scale of individual pits and trenches, veins can be seen to narrow down and pinch out completely in a few feet downdip or along strike.

Discussion. What follows is a discussion based on observations of geology, alteration and vein mineralization, but is given without the benefit of assay results which are pending. The Butte Mine area shows evidence of the presence of a fairly widespread but weakly developed hydrothermal alteration-mineralization system which occurs in association with a swarm of andesitic dikes. The system occurs over a strike length of at least 600 feet and probably more, and a width of 100 to 200 feet or more. Within this zone alteration is generally confined to fairly small rock volumes adjacent to fractures and faults, and copper-gold vein mineralization occurs in narrow quartz veins of limited continuity. Carbonate veins, although more widespread, are not suspected of carrying significant gold values.

It is concluded that the Butte Mine area shows little potential for a bulk mining situation in which the entire system or a large portion of it contains sufficient gold for a bulk operation.

Secondly, it is difficult to visualize that narrow vein mining of the veins themselves would present a viable target unless the individual veins are very high grade. This is due to the narrow widths and apparent lack of continuity.

The strongest economic potential in the Butte Mine area would appear to lie in specific zones where relatively intense hydrothermal alteration has affected widths of 10 to 50 feet or more. Depending on their gold content, if any, sufficient tonnage could be developed in these altered zones to support a medium-scale underground mining operation. Presently, however, we do not have evidence that these zones host significant gold mineralization.

Final interpretation of the property potential should be completed after receipt of analytical results.

BUCHANAN CLAIM BLOCK

The Buchanan claim group consist of 16 federal lode claims on BLM land in sections 12 and 13, T2S, R9W. The block lies about one mile southwest of Fourth of July Butte along the Agua Caliente Road (Fig.2). The claims lie about 8 miles to the west of the Puppy Dog-Ace-Deuce block.

Outcrop is excellent throughout the block. Two large washes cross the claims and offer excellent vertical exposure along wash walls. Access by vehicle is possible to much of the block as the terrain is relatively flat. No eveidence of previous exploration was seen.

Tertiary volcanic and volcaniclastic rocks underly the whole of the claims (Fig. 26) . Windows of Precambrian granitic rocks do occur to the east and north and probably to the west as eveidenced by abundant granitic float in the southeasterly draining washes. The volcanic sequence of andesitic flows with interbedded tuffs, volcanic sandstone and conglomerate trends northwesterly with moderate dips to the southwest. Although no intrusive rocks were observed, granodiorite dikes are reported to the east of the claims where they occupy northwesterly trending ridges and buttes (e.g. Fourth of July Butte). Faulting is reported to be minor with a northwesterly trend and northeasterly dip (Texasgulf geologic map of the area). The only faults seen in traverses were N55-60E50SE trending with four to six feet of normal and left lateral offset.

No areas of alteration were seen, even the faults are "dry" with only local shearing. Widespread but weakly developed low temperature silica (chalcedony) veinletting was seen in the andesitic flow(?) rocks. No alteration or mineralization was associated with this fracture and joint fill event. Calcite is commonly present as euhedral crystals in the center of these chalcedonic veinlets. Banding of chalcedony on the veinlet margins with euhedral quartz and calcite crystals filling the center is typical. Jasperoidal, red-brown chalcedony, float was found in several locations. This silica is massive with excellent concoidal fracture and perhaps represents thin interbeds within the volcanic sequence. Clear calcite veinlets are also widespread and like the chalcedony veinlets do not have any alteration envelopes or associated mineralization. Samples have been collected of all types of veinlets and silica observed on the claims. The veinletting does not seem to have a preferred orientation with northeasterly, northwesterly and westerly trends being measured.

A total of ten samples was collected during the reconnaissance traverses. Sample locations are indicated on the geological map produced by Texasgulf (Fig. 26) and sample descriptions are contained in Table 2. It is unlikely any of the samples will be anomalous in precious or basemetals but the samples represent the only relatively encouraging geologic features on the property. Further work on this claim block is not recommended.

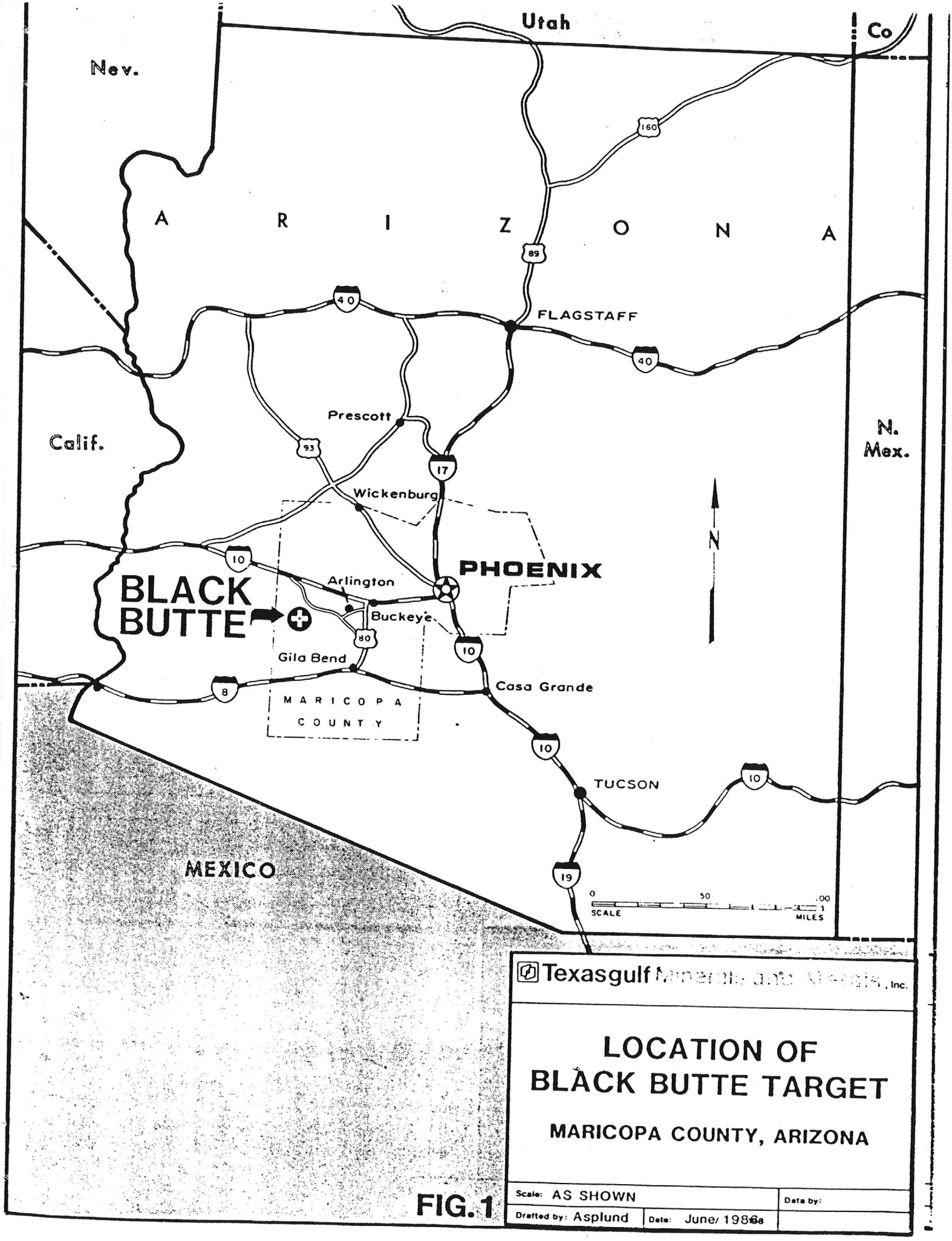
DIXIE PROSPECT

The Dixie prospect is one of two prospects located adjacent to the Agua Caliente Road and between the two claim blocks under option. Both

prospects are covered by the Dix claims probably staked in September 1986. The Jack Pot prospect consists of narrow barite-carbonate veins in dark andesite or basalt. The veins are wide spaced and without alteration envelopes. The Dixie is a more interesting prospect and has several deep shafts and evidence that a small mill was located on the propety. A hill of andesitic volcanic breccia in a northeasterly trending sequence of volcanic sedimentary rocks including sandstone, pebbly sandstone and mudstone is ringed by altered and pyritic zones and veins located at the break-in-slope. The breccia may be intrusive, a flow breccia or a combination such as a vent-dome complex and adjacent flow breccia.

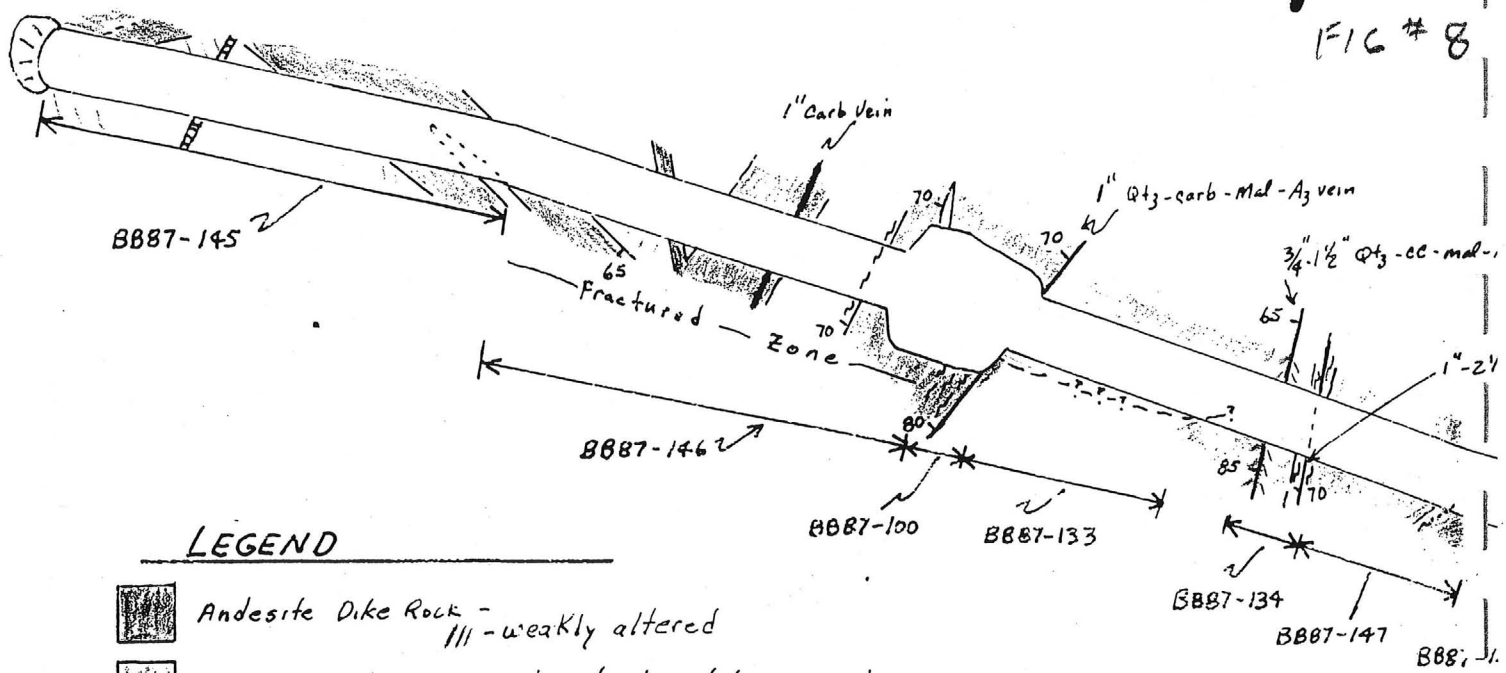
Four rock chip samples were collected from the workings/altered-veined zones on the north side of the hill. These samples should indicate whether the prospect has any gold potential. The geologic setting and apparent spatial and genetic relationship of alteration to the breccia makes this prospect interesting. The volcanics at this prospect are probably equivalent to those at the Buchanan claims and to the mid-Tertiary sequence at Black Butte.

Research of the BLM records to determine the status and owners of the Dix claims is recommended if the four samples indicate the hydrothermal system to be auriferous.


Utah
Co
Nev.
A R I Z O N A
160
89
40
FLAGSTAFF
40
Prescott
93
17
Calif.
N.
Mex.
Wickenburg
N
10
PHOENIX
BLACK
BUTTE
Arlington
Buckeye
80
Gila Bend
10
8
Casa Grande
MARICOPA
COUNTY
10
TUCSON
10
MEXICO
19
0
50
.00
1
SCALE
MILES
Texasgulf Minerals and Metals, Inc.
LOCATION OF
BLACK BUTTE TARGET
MARICOPA COUNTY, ARIZONA
Scale: AS SHOWN
Data by:
Drafted by: Asplund
Date: June/ 1986
FIG. 1

A-1

FIG # 8



LEGEND

- Andesite Dike Rock – /// - weakly altered
- Altered Andesite - carbonate-hematite ± sericite; carbonate-sericite adj. to veins
- Dacite
- Quartz Monzonite – /// - weakly or patchily altered
- Altered Quartz Monzonite - sericite-hematite ± carbonate
- Biotite Quartz Monzonite
- Copper Bearing Vein - quartz, carbonate, hematite, Cu-carb/sulfides
- Vein - no copper - commonly quartz, carbonate, barite

- A

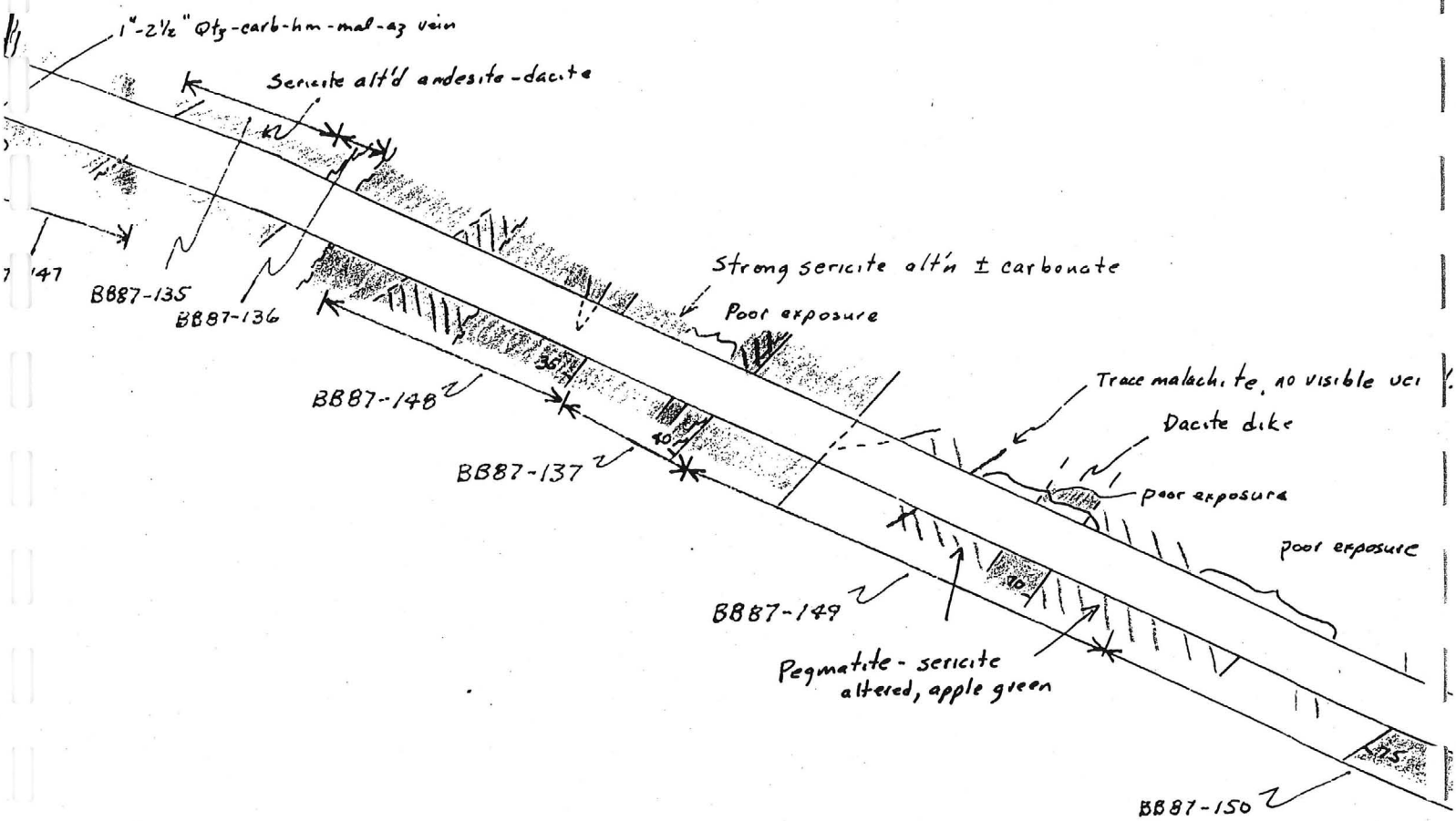
B -

N

0 10'

FIG #8

½" Qtz-cc-mal-Ag Vein w/ ser. alt. envelope



BB87-1.

1-B

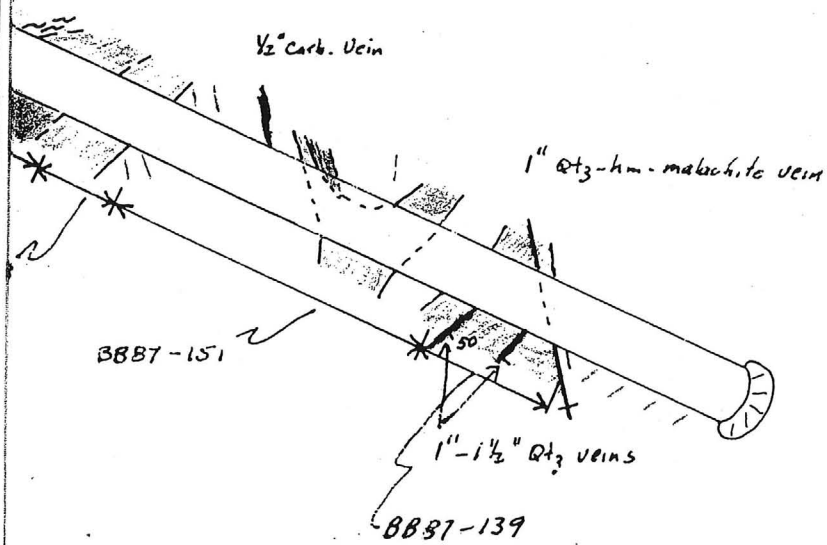
FIG #8

BLACK BUTTE GOLD PROJECT
MARICOPA CO., ARIZONA
BUTTE MINE AREA
TRENCH BBB7-1
SKETCH MAP - GEOLOGY AND SAMPLE LOCATIONS
1-2 SEPT., 1987 - G. Cleveland
J. Lessman

Samples BB87-100, 133-139 and 145-151

FIG. 8

ructure



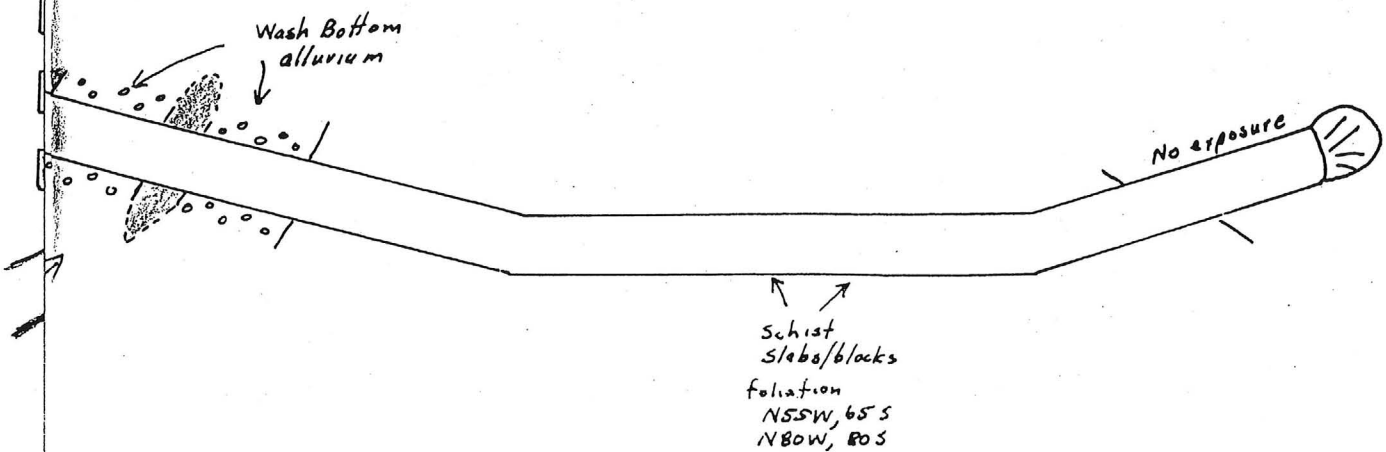
FB

FIG #9

BLACK BUTTE GOLD PROJECT
MARICOPA CO., ARIZONA
BUTTE MINE AREA
TRENCH BB87-2
SKETCH MAP - GEOLOGY AND SAMPLE LOCATIONS
2 SEPTEMBER, 1987 G. CLEVELAND
J. LESSMAN

Samples BB87-140 to 147

FIG. 9

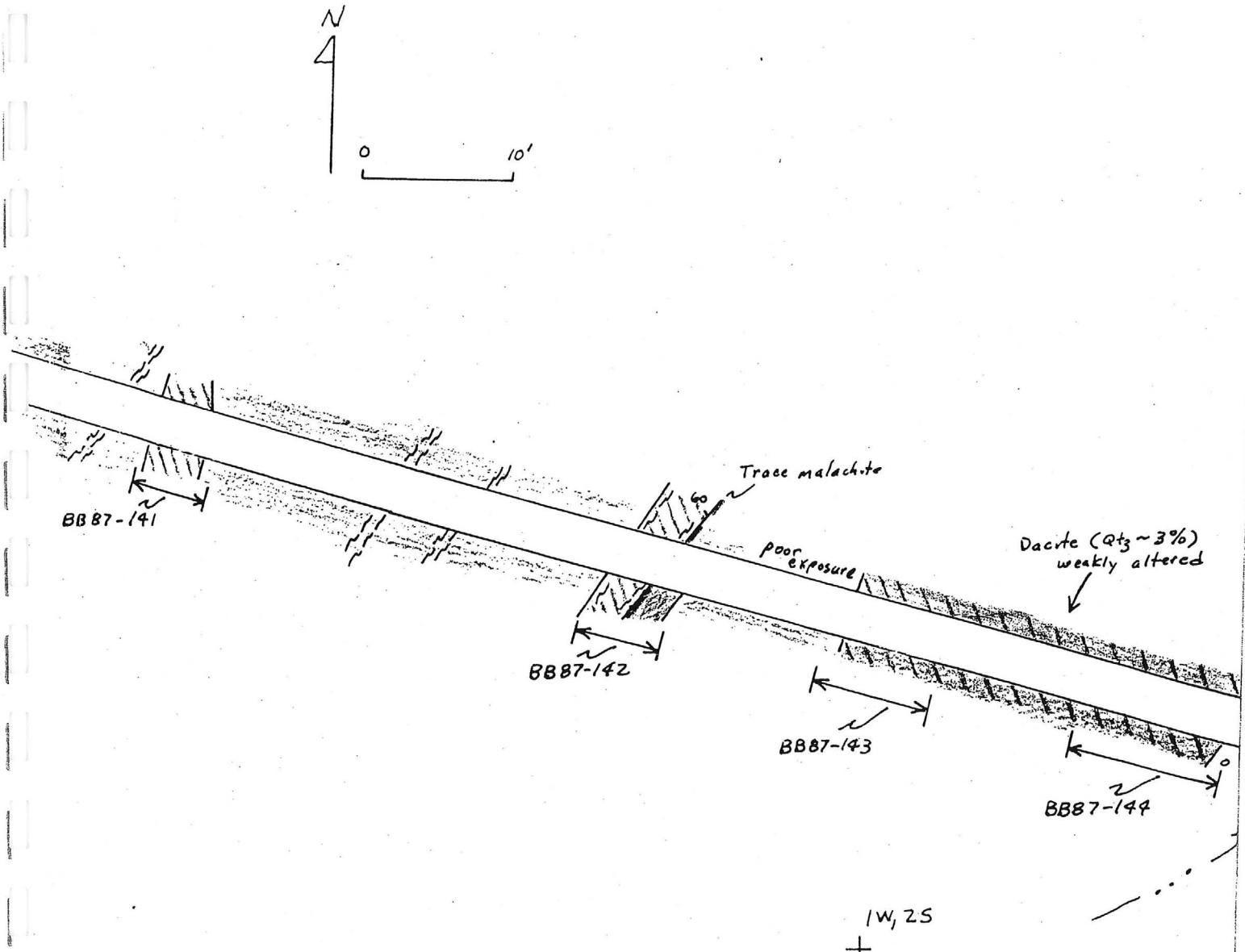


A

Fig # 9

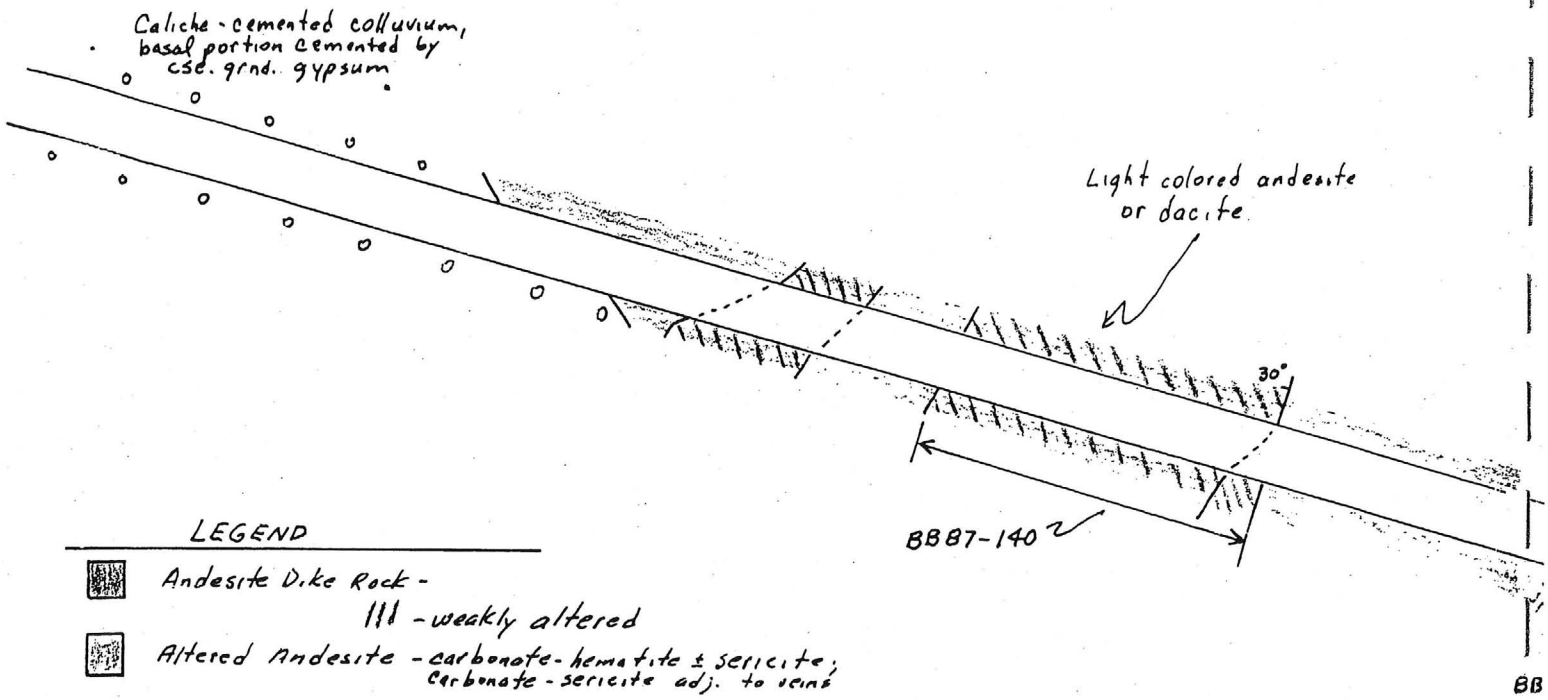
B

Fig # 9


N
0
10'
Trace malachite
poor exposure
Dacite (Qt3 ~ 3%) weakly altered
BB87-141
BB87-142
BB87-143
BB87-144
1W, 2S

A

F16 #9

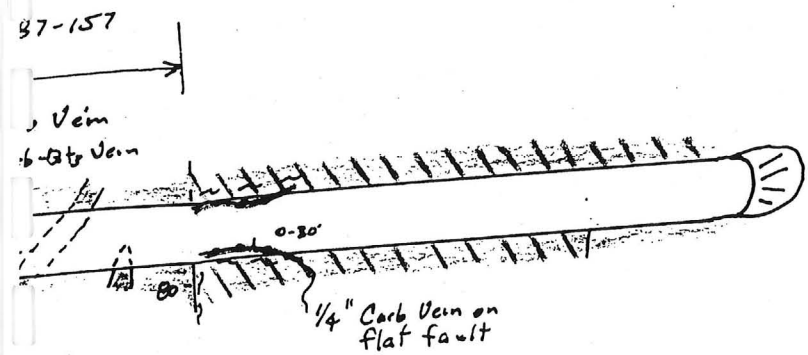


LEGEND

- Andesite Dike Rock - /// - weakly altered
- Altered Andesite - carbonate - hematite ± sericite; carbonate - sericite adj. to veins
- Dacite
- Quartz Monzonite /// - weakly or patchily altered
- Altered Quartz Monzonite - sericite - hematite ± carbonate
- Biotite Quartz Monzonite
- Copper Bearing Vein - quartz, carbonate, hematite, Cu-carb/sulfides
- Vein - no copper, commonly quartz, carbonate, barite

— A

FIG. # 10



of fracturing + alteration,
ts/structures complicate
tion.

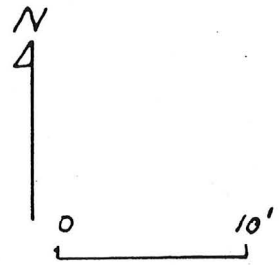


FIG. 10

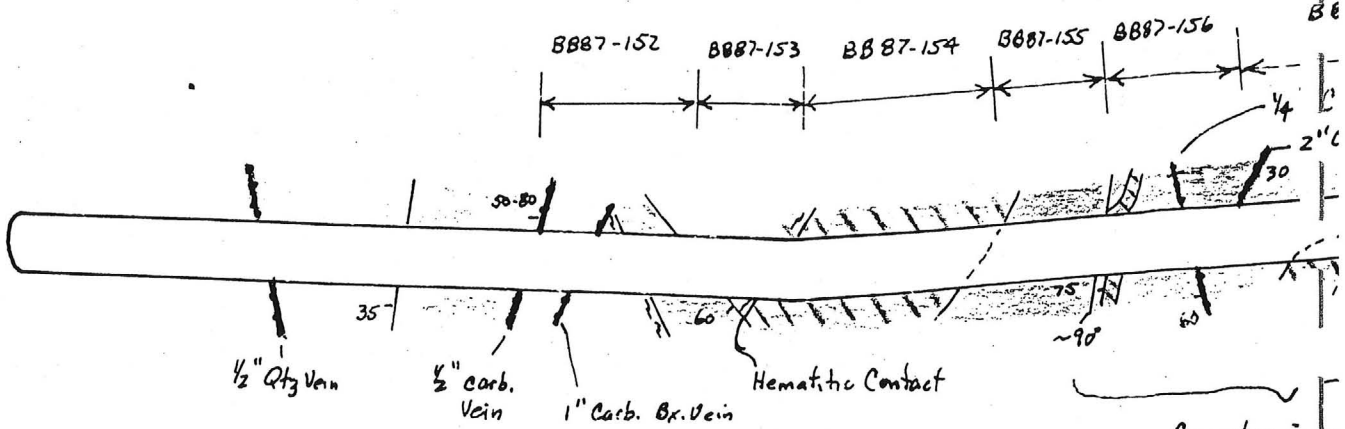
BLACK BUTTE GOLD PROJECT
MARICOPA CO., ARIZONA
TRENCH BBB7-3
SKETCH MAP - GEOLOGY AND
SAMPLE LOCATIONS

2-3 Sept., 1987 G. CLEVELAND
J. LESSMAN

Samples BB87-152-157

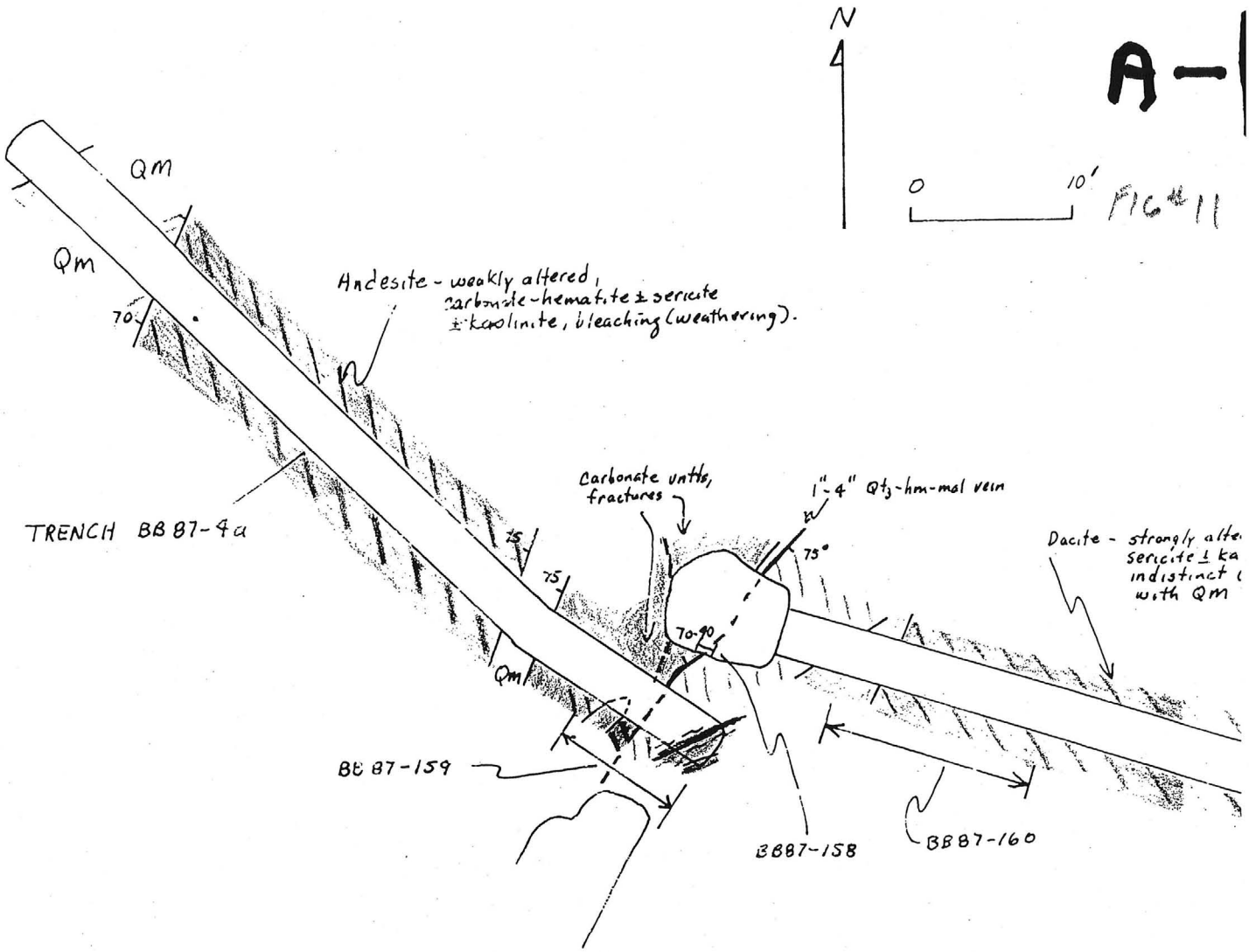
A-4

FIG # 10



LEGEND

- Andesite Dike Rock –
  /// – weakly altered
- Altered Andesite – carbonate-hematite ± sericite
  carbonate-sericite adj. to veins
- Quartz Monzonite –
  /// – weakly or patchily altered
- Altered Quartz Monzonite – sericite-hematite ± carbonate
- Biotite Quartz Monzonite
- Copper Bearing Vein – quartz-carbonate-hematite-Cu carb/sulfides
- Vein – no copper, commonly quartz, carbonate, barite


N
0
10'
Qm
Qm
70
Andesite - weakly altered, carbonate-hematite ± sericite ± kaolinite, bleaching (weathering).
TRENCH BB 87-4a
75
75
Carbonate veins, fractures
1"-4" Qtz-hm-mal vein
75°
70-90
Dacite - strongly alte
sericite ± ka
indistinct
with Qm
Qm
BB 87-159
BB87-158
BB87-160

A-

Fig. 11

B

FIG # 11

LEGEND

- Andesite Dike Rock - /// - Weakly altered
- Altered Andesite - carbonate - hematite ± sericite; carbonate - sericite adj. to veinlets
- Dacite
- Quartz Monzonite - /// - Weakly or patchily altered
- Altered Quartz Monzonite - sericite ± hematite - carbonate
- Biotite Quartz Monzonite
- Copper bearing Vein - quartz, carbonate, hematite; Cu - sulfides, Cu - carbonates
- Vein - no copper, commonly quartz, carbonate, or barite
- Pegmatitic Quartz - usually as veins, also as pods and lenses.

ite ± kaolinite

" Peg. Qtz. Vein

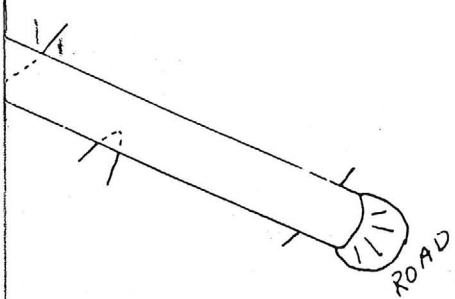


FIG. 11

BLACK BUTTE GOLD PROJECT
MARICOPA CO., ARIZONA
BUTTE MINE AREA
TRENCHES BB87-4a, 4b
SKETCH MAP - GEOLOGY AND SAMPLE LOCATIONS
3 SEPTEMBER, 1987 G. CLEVELAND
J. LESSMANN

Samples BB87-158 to 164

1-A

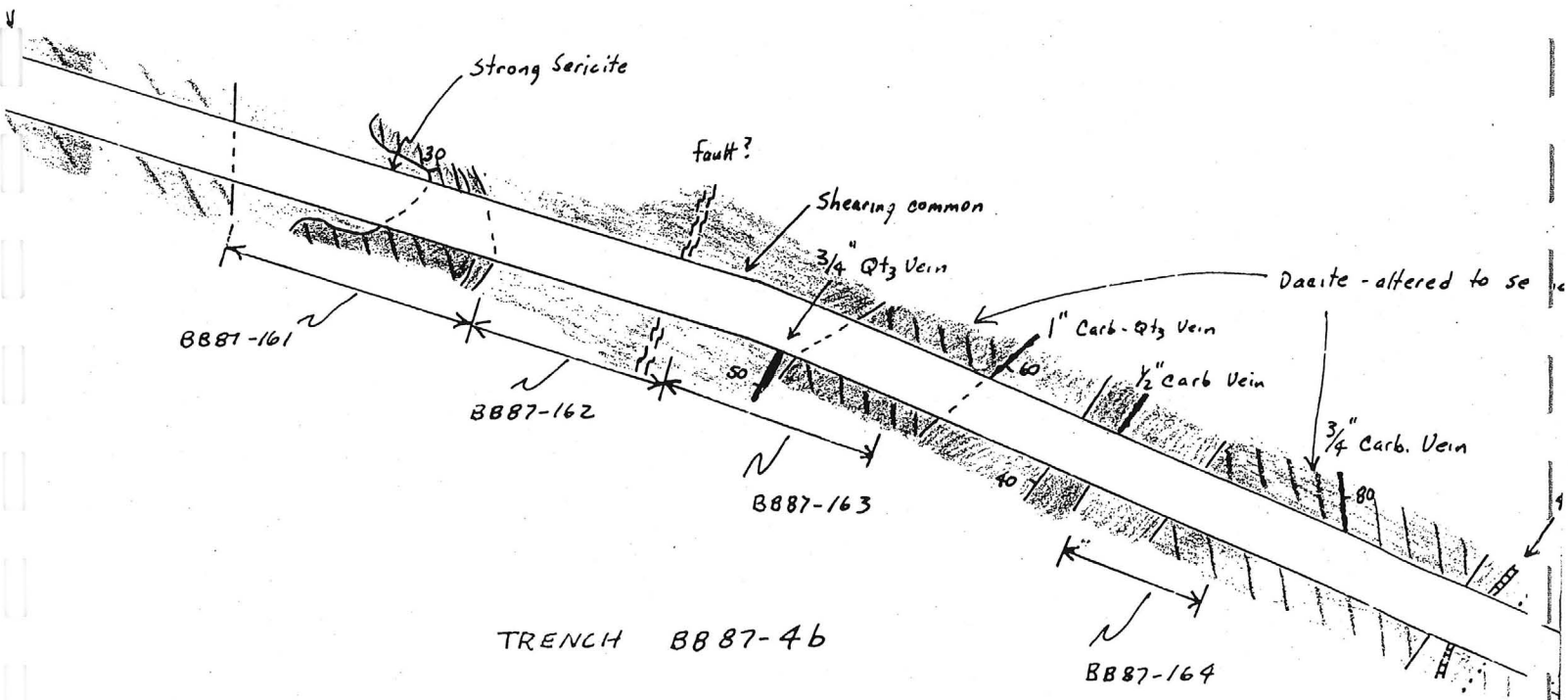
FIG # 11

B-H

FIG # 11

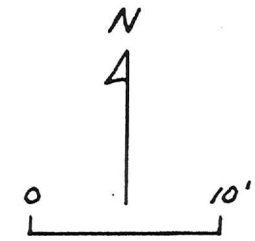
strongly altered to sericite ± kaolinite, indistinct contacts with QM

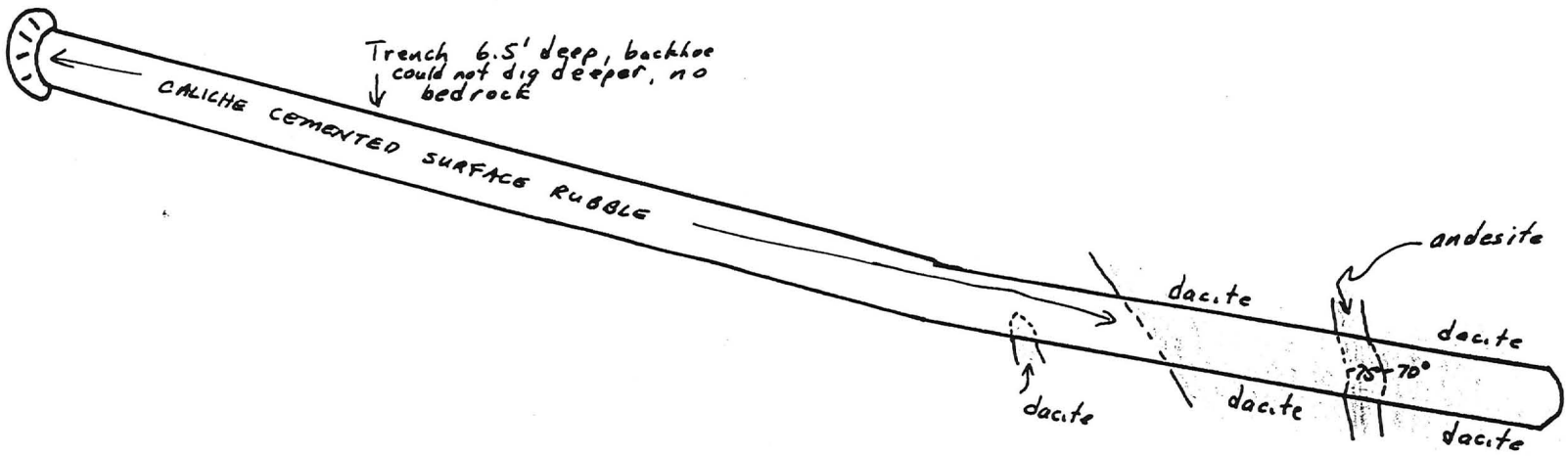
+ 2N, 1E



TRENCH BB87-4b

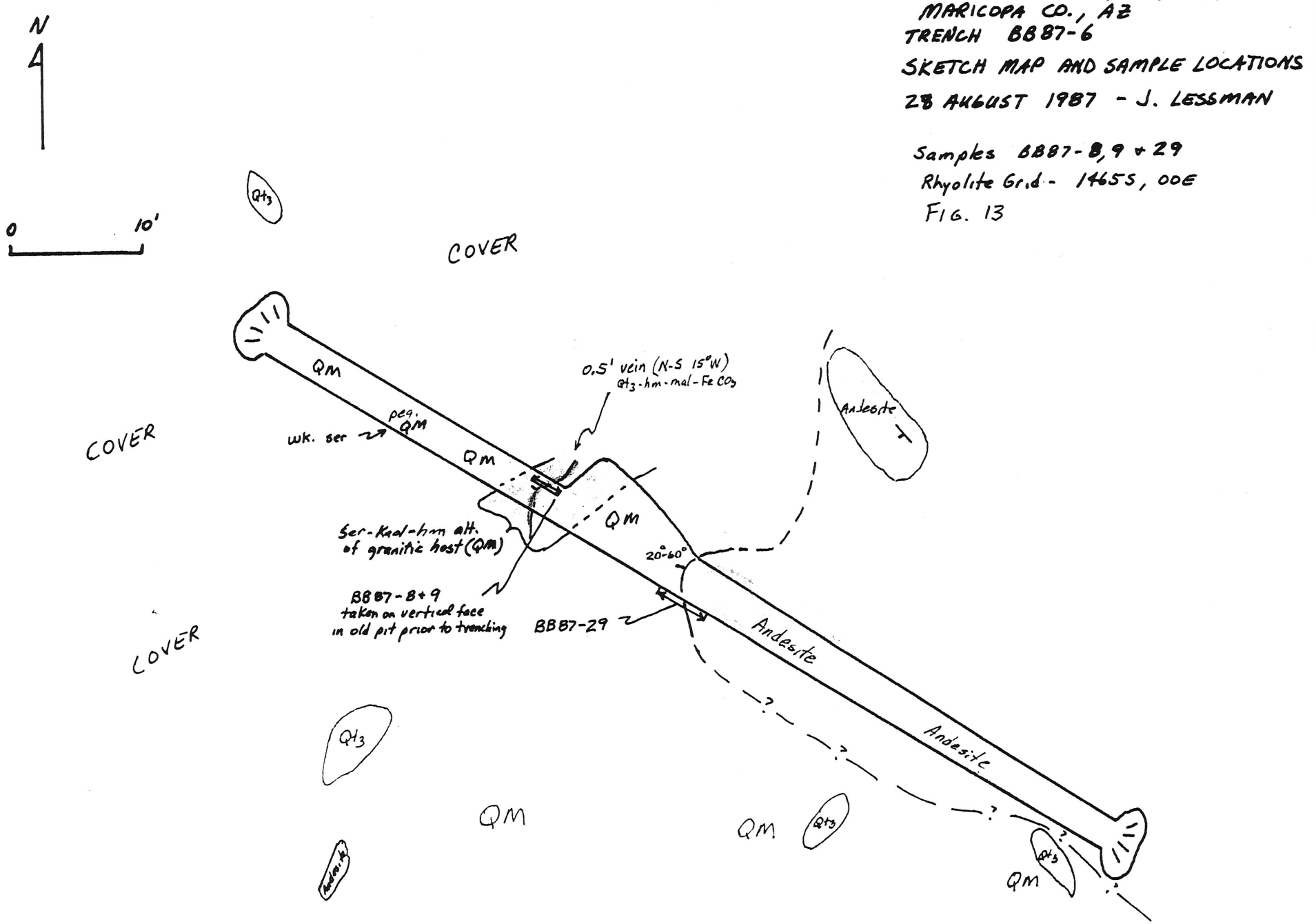
BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB 87-5
SKETCH MAP
2 SEPTEMBER, 1987 - J. LESSMAN
Fig. 12





BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-6
SKETCH MAP AND SAMPLE LOCATIONS
28 AUGUST 1987 - J. LESSMAN

Samples BB87-8, 9 & 29
Rhyolite Grid - 14655, 00E
FIG. 13

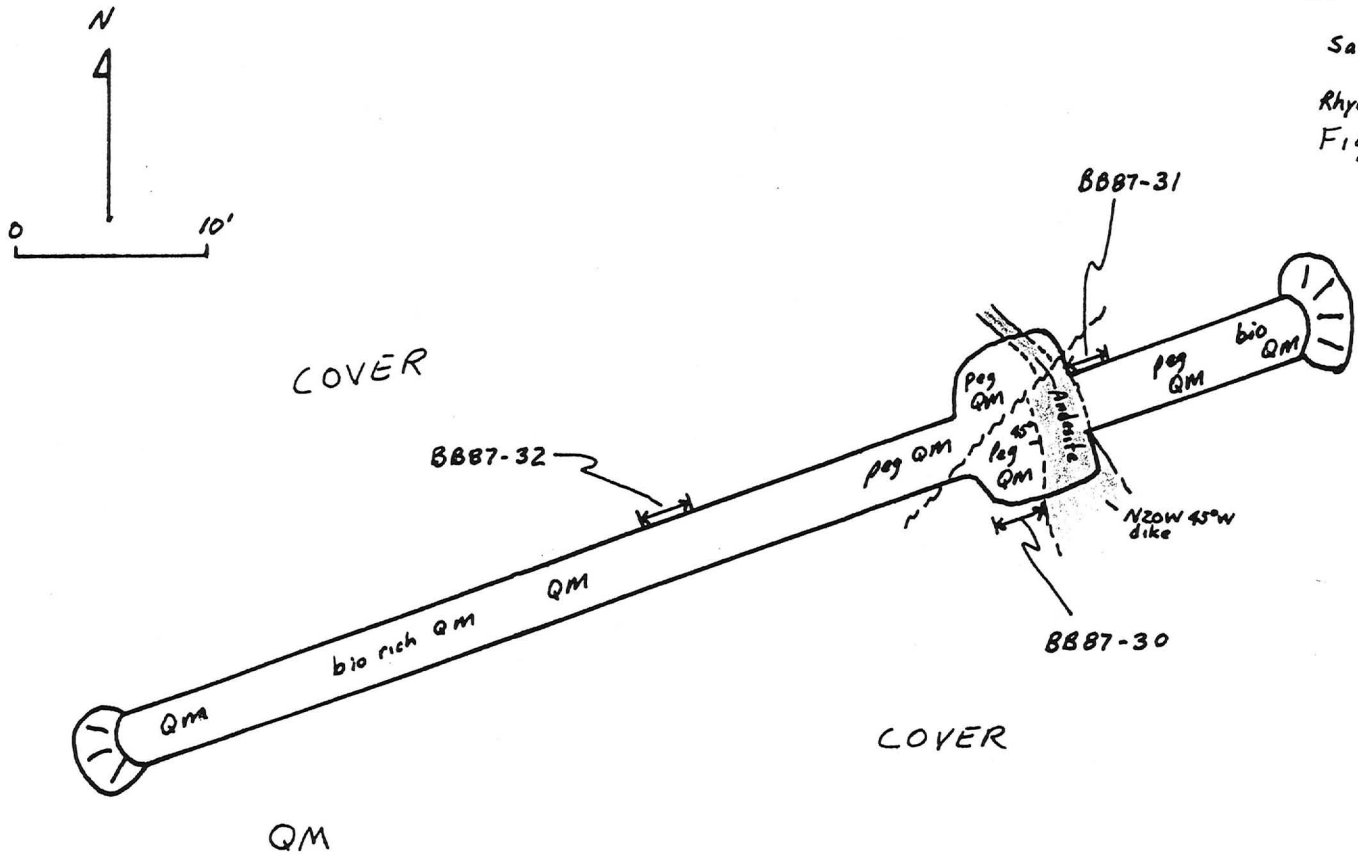


BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

TRENCH BBB7-7
SKETCH MAP WITH SAMPLE LOCATIONS
28 AUGUST 1987 - J. LEESMAN

Samples BBB7-30 to 32

Rhyolite Grid - 1315S, 150E
Fig. 14

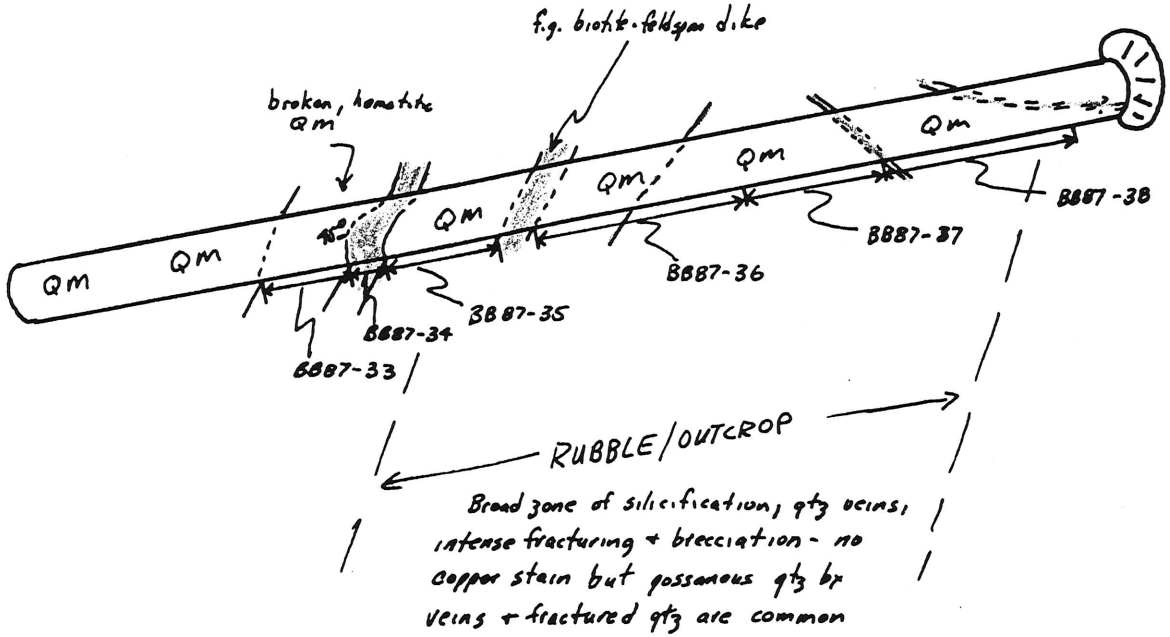


BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-8
SKETCH MAP WITH SAMPLE LOCATIONS
29 AUGUST 1987 - J. LESSMAN

Samples BB87-33 to 38
Rhyolite Grid - 525N, 3000E
Fig. 15

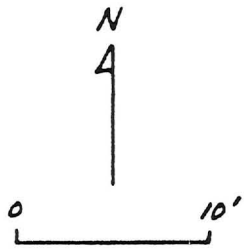
N

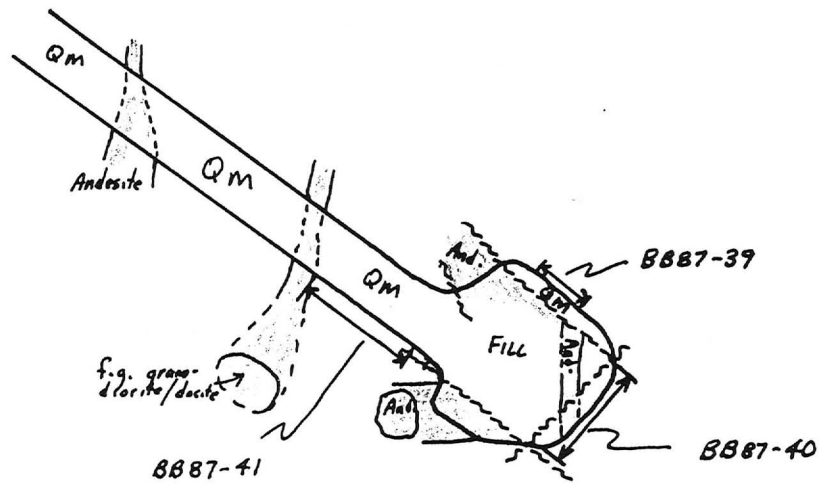
0 10'



BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-9
SKETCH MAP WITH SAMPLE LOCATIONS
29 AUGUST, 1987 - J. LESSMAN

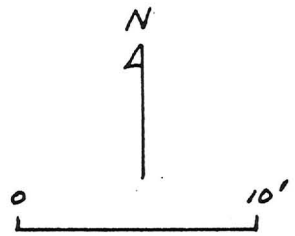
Samples BB87-39 to 41
Rhyolite Grid - 200N, 255DE
Fig. 16

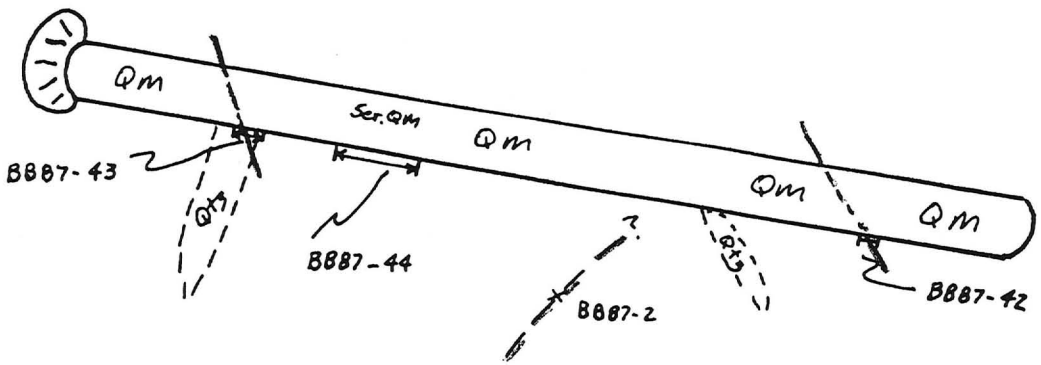




BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-10
SKETCH MAP WITH SAMPLE LOCATIONS
29 AUGUST, 1987 - J. LESSMAN

Samples BB87-42 to 44
Rhyolite Grid 2505, 2800E
Fig, 17

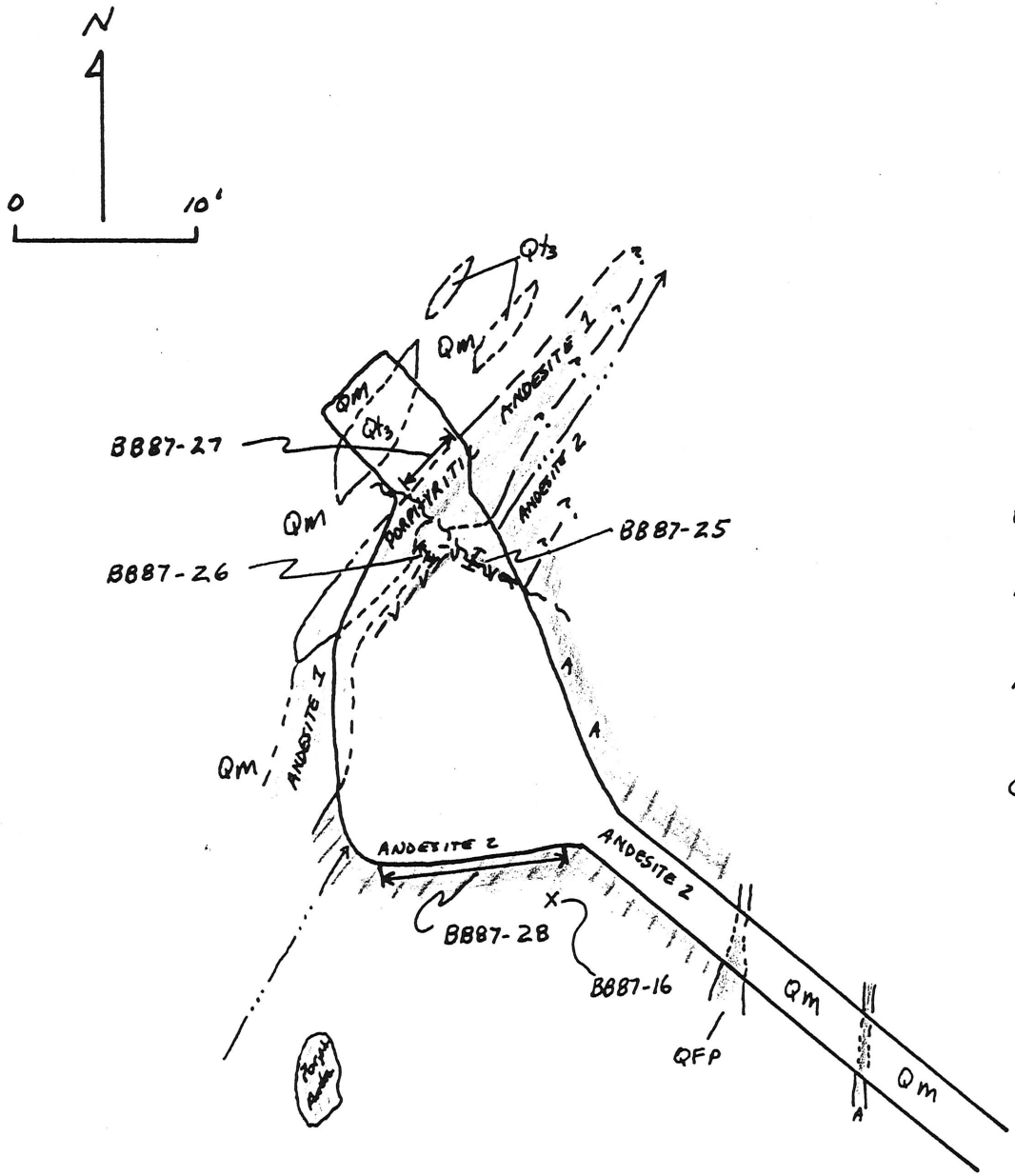




BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

TRENCH BBB7-11
SKETCH MAP WITH SAMPLE LOCATIONS
28 AUGUST, 1987 – J. LESSMAN

Samples BBB7-16, 25-28
Rhyolite Grid – 750S, 400E
Fig. 18



Porphyritic Andesite – unaltered, distinctive dike with large whitish feldspar phenocrysts

Andesite 1 – unaltered, red to black, dense vfg dike which occurs in HW of northwest dipping vein/mineralized zone

Andesite 2 (A) – commonly argillized, red-brown with hematite on fractures and as mottling. FW of mineralized zone and more sheared

Quartz Feldspar Porphyry (QFP) – weakly altered (sericite-carbonate), chlorite on fractures, narrow dike at Qm-andesite contact

BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

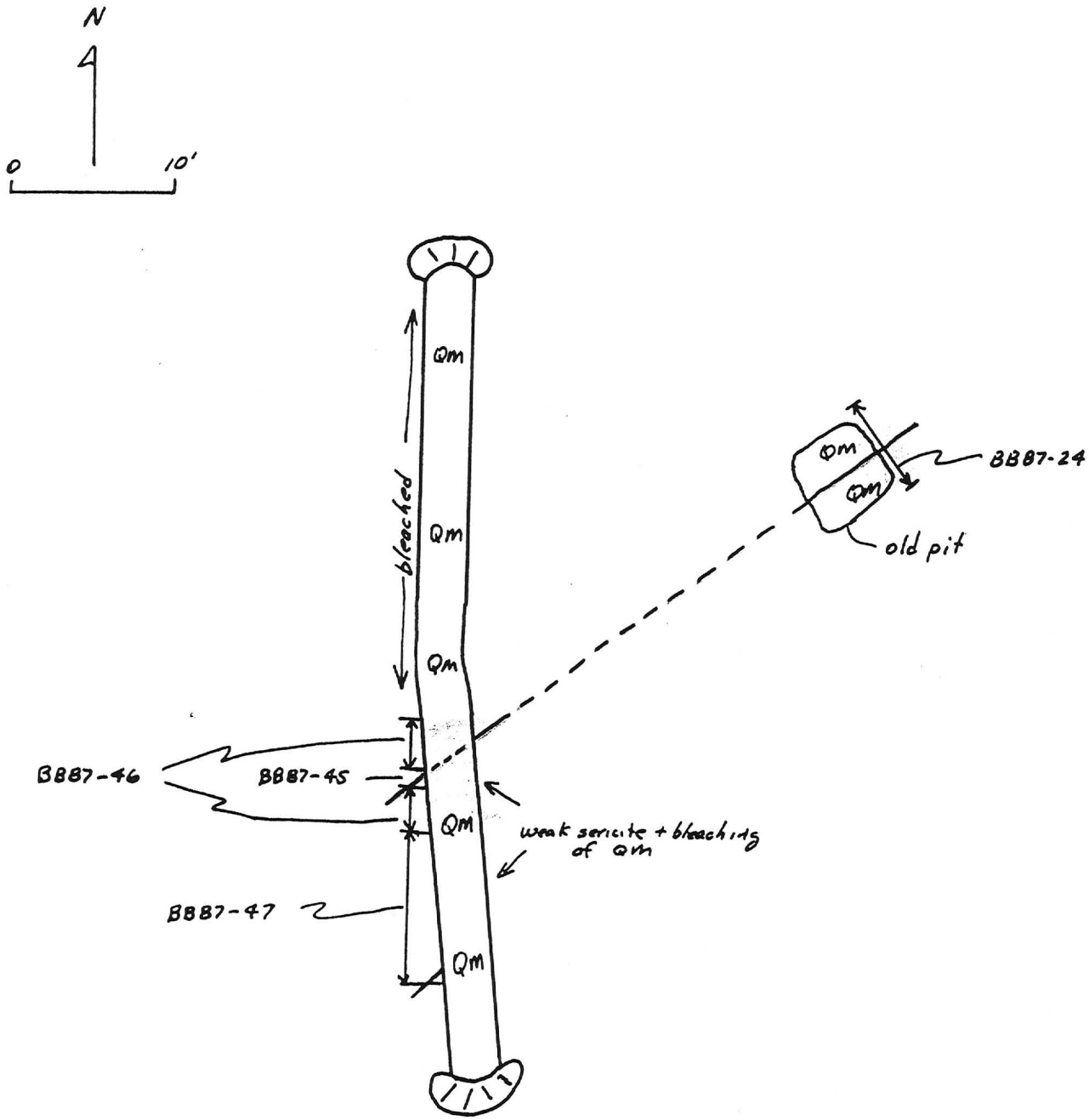
TRENCH BB87-12

SKETCH MAP WITH SAMPLE LOCATIONS
29 AUGUST, 1987 - J. LESSMAN

Samples BB87-24, 45-47

Rhyolite Grid - 2870W, 500N

Fig. 19



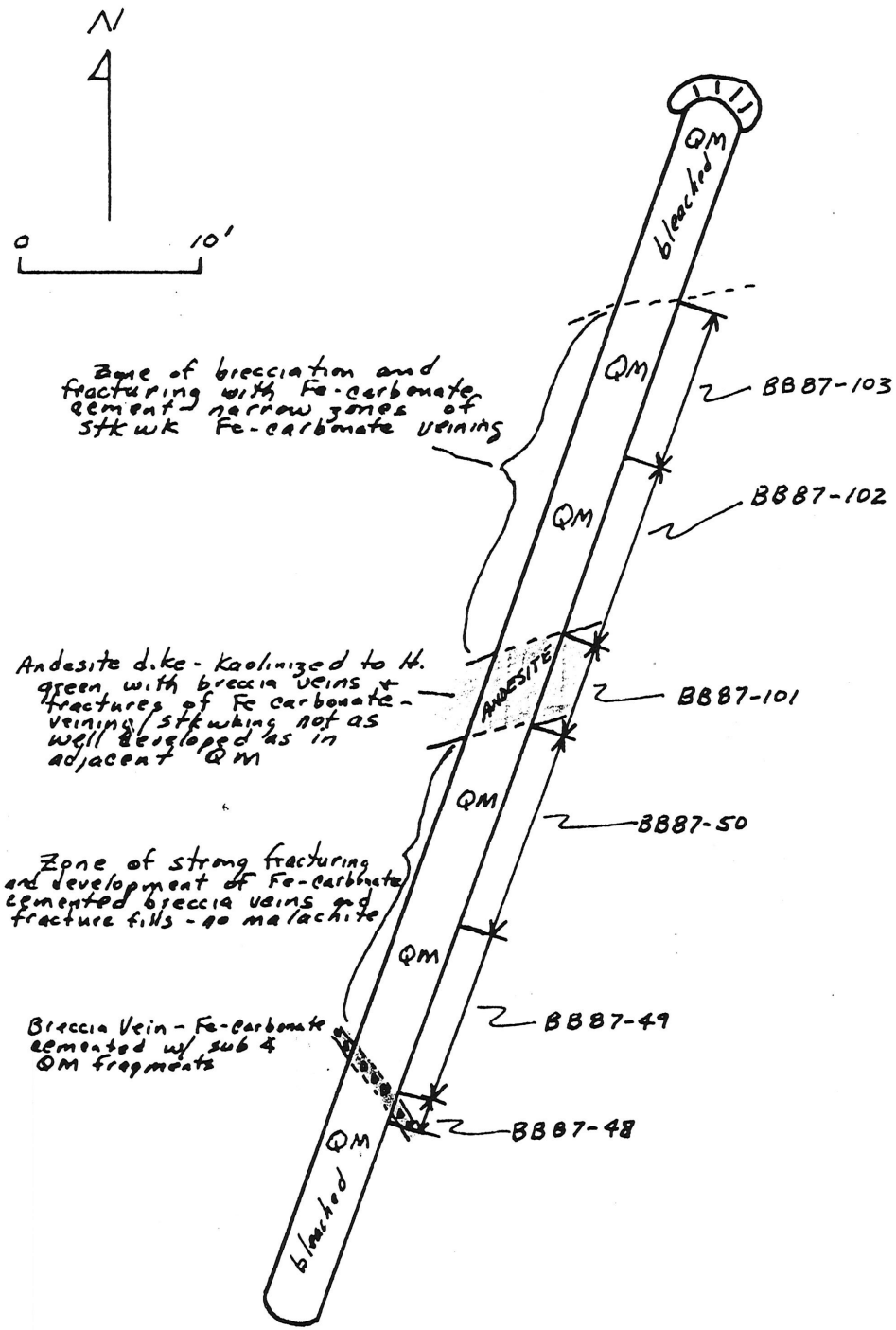
BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

TRENCH BB87-13
SKETCH MAP WITH SAMPLE LOCATIONS
29 AUGUST, 1987 - J. LESSMAN

Samples BB87-48 to 50, 101, 102, 103

Rhyolite Grid - 00N 4250W

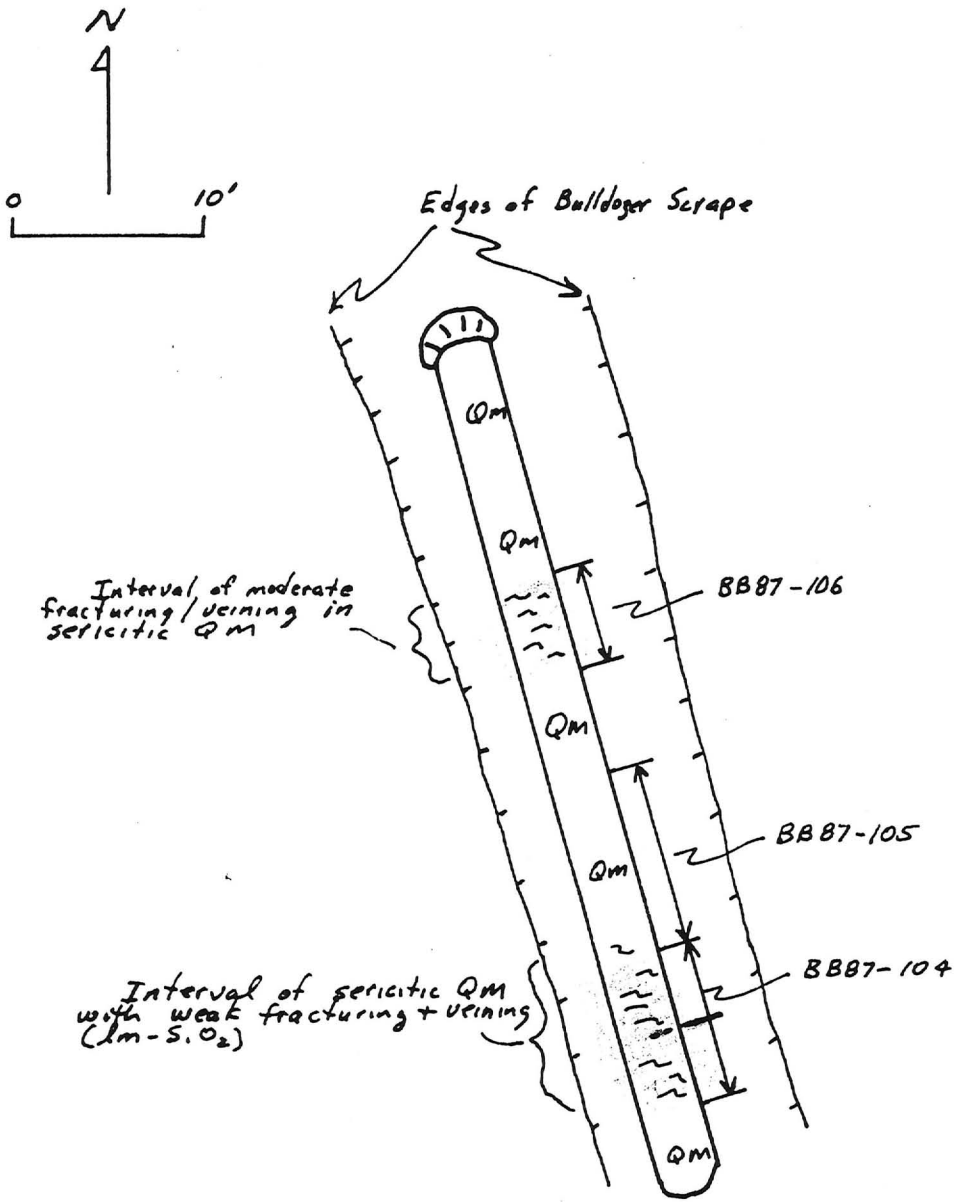
Fig. 20



BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ.

TRENCH BB87-14
SKETCH MAP WITH SAMPLE LOCATIONS
31 AUGUST, 1987 - J. LESSMAN

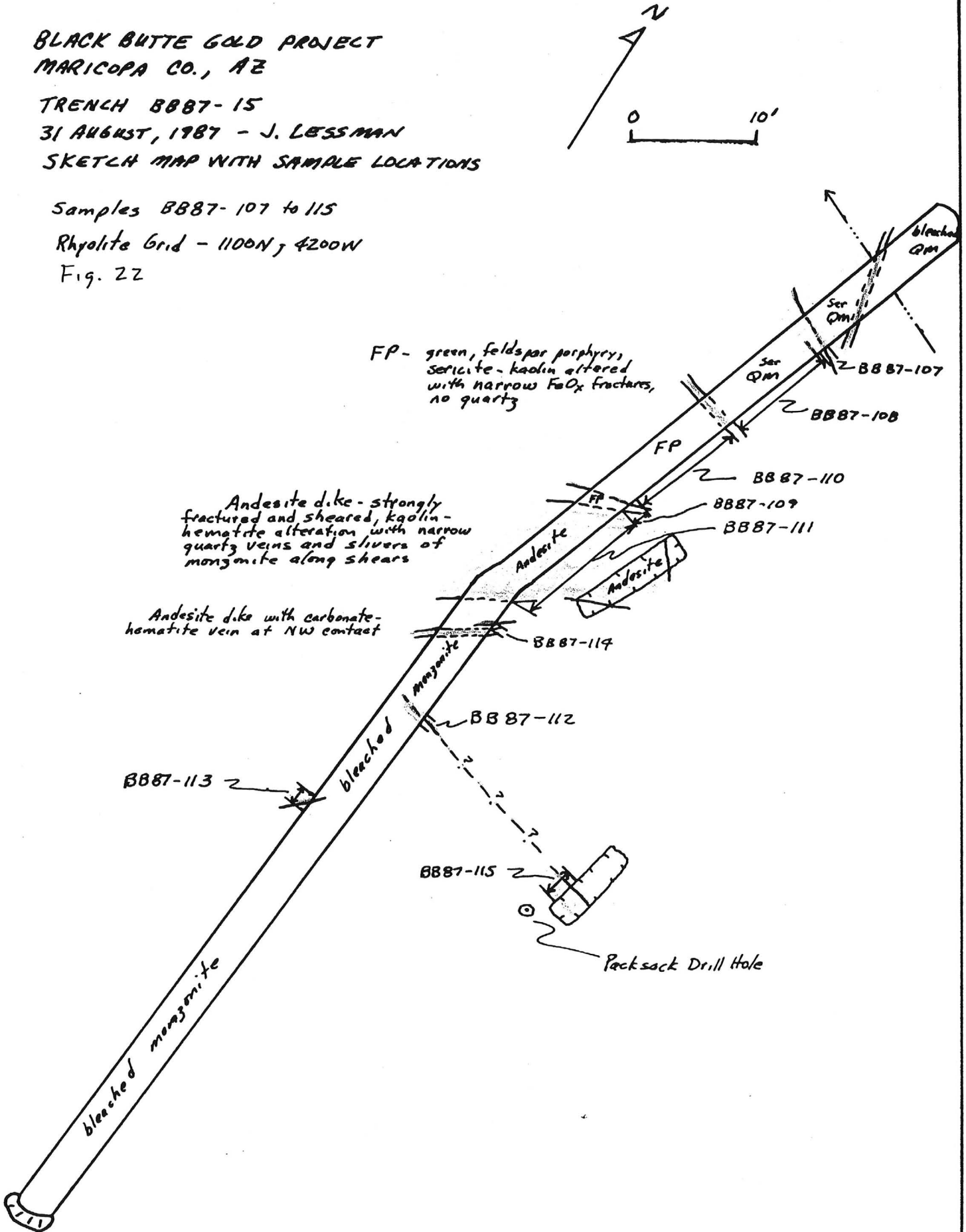
Samples BB87-104 to 106
Rhyolite Grid 950N 4350W
Fig. 21



BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

TRENCH BB87-15
31 AUGUST, 1987 - J. LESSMAN
SKETCH MAP WITH SAMPLE LOCATIONS

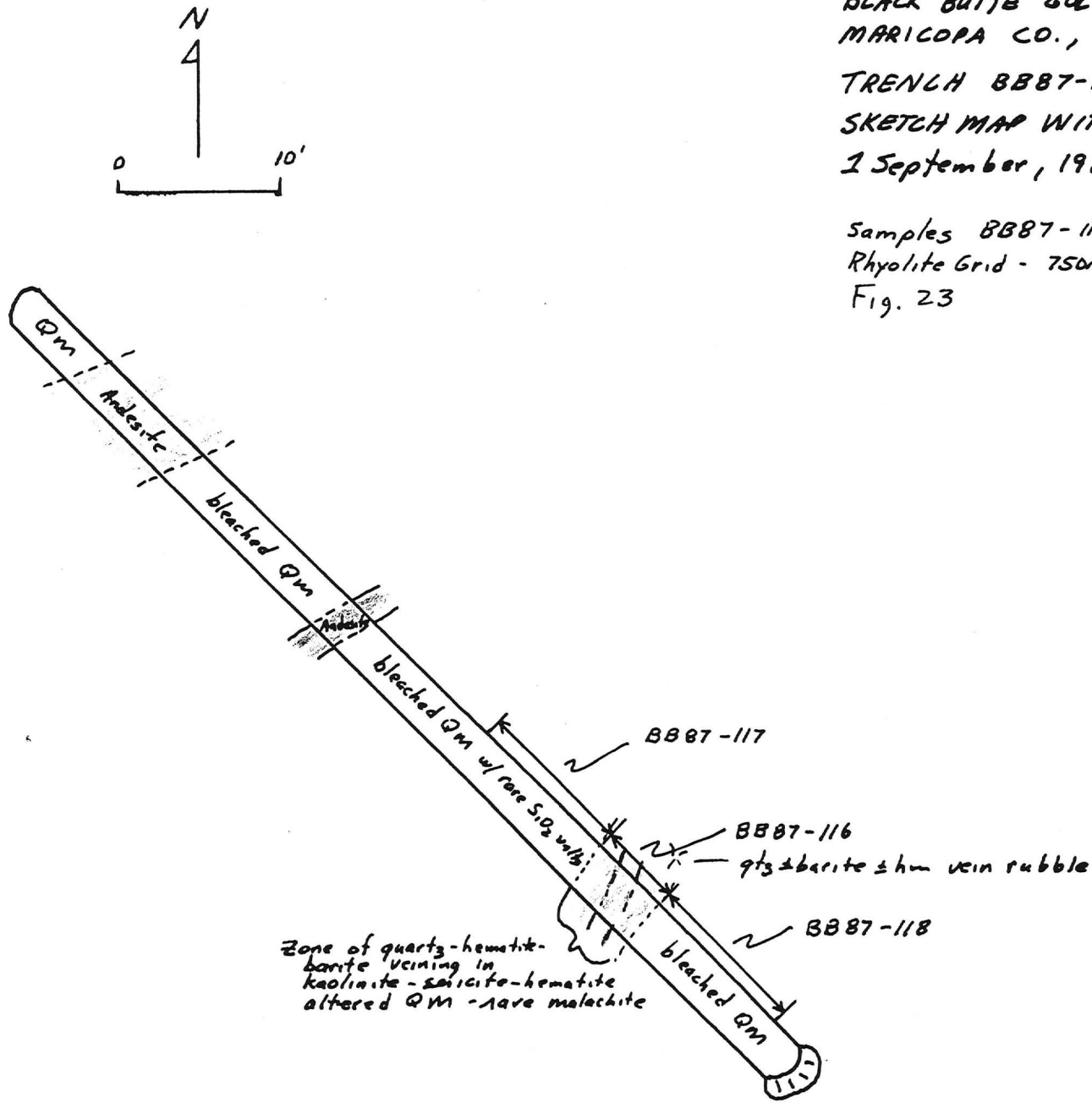
Samples BB87-107 to 115
Rhyolite Grid - 1100N, 4200W
Fig. 22



BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ

TRENCH BB87-16
SKETCH MAP WITH SAMPLE LOCATIONS
1 September, 1987 - J. LESSMAN

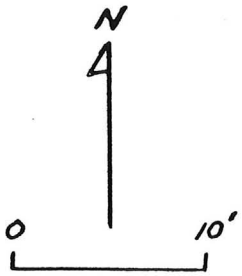
Samples BB87-116 to 118
Rhyolite Grid - 750N, 3700W
Fig. 23

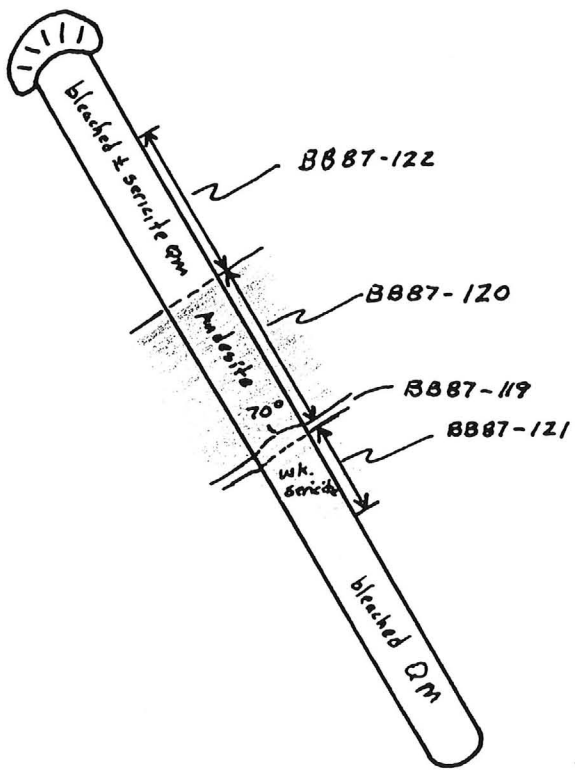


BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-17
SKETCH MAP WITH SAMPLE LOCATIONS
1 SEPTEMBER, 1987 - J. LESSMAN

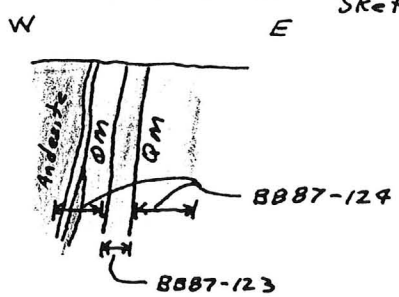
Samples BB87-119 to 124
Rhyolite Grid - 650N, 3835W

Fig. 24





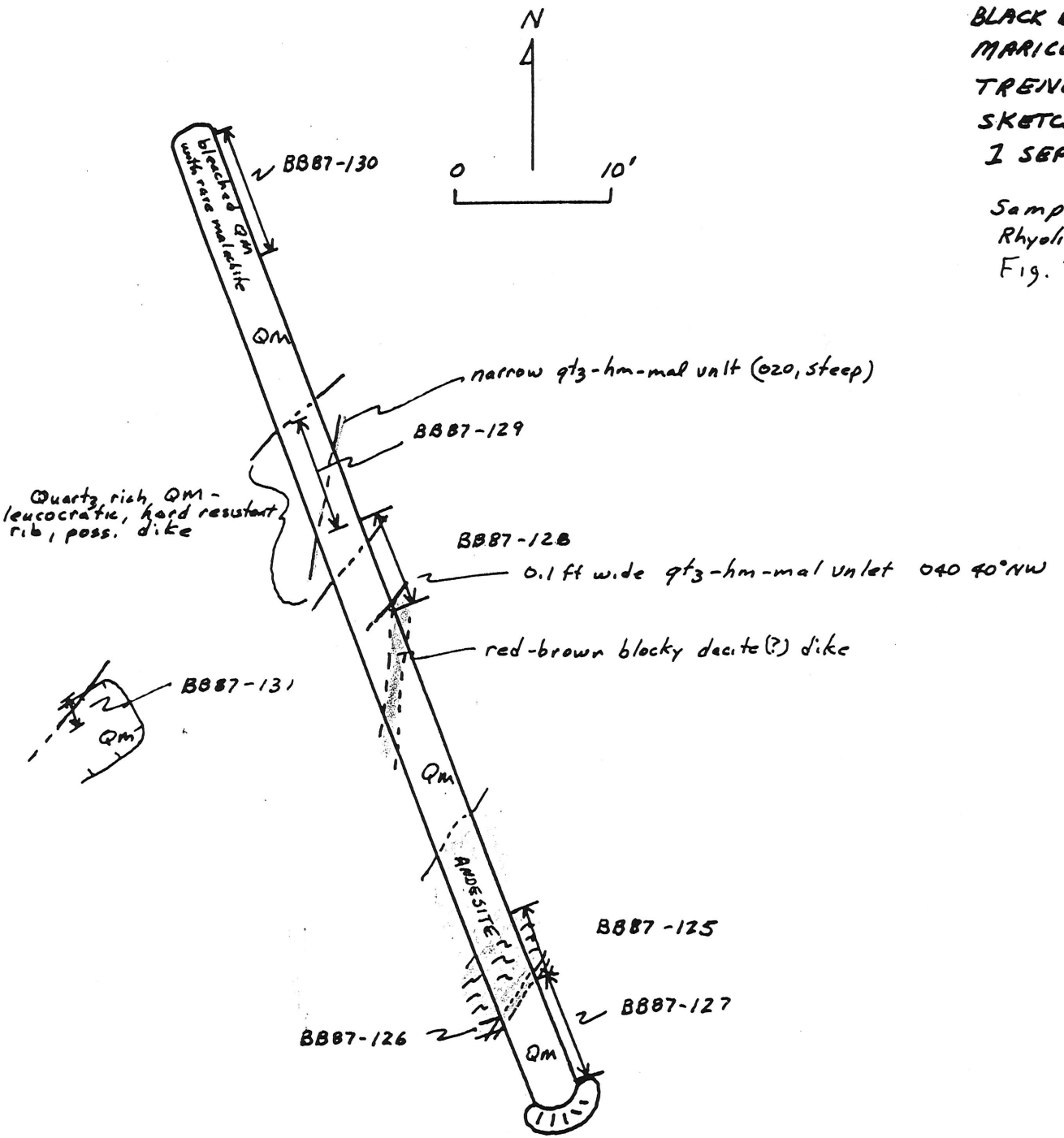
Water Tank Pit - X-Section Sketch



Above sketch of a pit about 100 ft. northeast along strike from TR BB87-17.

BLACK BUTTE GOLD PROJECT
MARICOPA CO., AZ
TRENCH BB87-1B
SKETCH MAP WITH SAMPLE LOCATIONS
1 SEPTEMBER, 1987 - J. LESSMAN

Samples BB87-125-131
Rhyolite Grid - 600N, 3950W
Fig. 25



BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP, 1987 J. LESSMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
87-1	2400S, 3050W	Grab	Chalcedonic silica veinlets in unaltered andesite, low temperature without alteration												
87-2	2800E, 250S TR BB87-9	Grab	Sideritic - Fe carbonate vein material/rubble in quartz monzonite, quartz rubble nearby												
-3	500E, 200S near Empire Hole	0.6-1.0	Fe-carbonate and hematite cemented breccia vein with altered QM fragments, at dike contact, rare malachite (N20W 65°E)												
-4	2440E, 00N	Composite	dark brown-black carbonate-hematite vein(?) rubble (covers 20 ft² area), in QM without alteration												
-5	100W, 2200S	10	hematitic-kaolinitic-carbonate bearing shear/fault zone in Tertiary andesite volcanics, rare silica vnlts												
-6	500E, 1600S	composite	specularite-barite± carbonate-hematite vein in andesite dike, 0.5' wide, rare malachite, no alteration halo												
-7	570W, 1330S	Grab	barite-Fe carbonate-quartz-malachite vein mullock from filled pit, sericite alt. of peg. QM, vein estimated to be 0.5 to 1.0 ft wide												
-8	00E, 1465S TR BB87-6	0.5	quartz-Fe carbonate ± malachite vein hosted in argillized QM - wk. sericite and hematite on fractures												
-9	00E, 1465S TRBB87-6	4.0	argillized ± sericitic QM above and below -8 sample - rare quartz veinlets and hematitic fractures												
7-10	500E, 1500S near AZ-6	0.5	barite-Fe carbonate ± malachite vein in gouged andesite dike near QM contact.												
-11	500E, 1500S near AZ-6	3.75	andesite dike (0.75 ft below and 3.0 ft above vein sample -10) - variably oxidized and wkly argillized.												
-12	500E, 1500S near AZ-6	4.0	pegmatitic granite/QM altered to sericite-kaolinite-hematite, rare malachite - beneath sample -11.												
-13	500E, 1500S near AZ-6	0.5	barite ± SiO_2 + carbonate + fault gouge veinlet at andesite dike-QM contact - discontinuous vein and narrower than vein at -10.												
-14	1100S 225E	Composite	quartz-Fe carbonate-sericite-hematite ± malachite vein rubble - est. vein width is 1-2 ft., hosted in unaltered QM.												
-15	350E, 1180S	1.1	barite ± carbonate ± malachite vein hosted in weakly sericitic QM - HW of vein is carbonate dominant												
-16	TR BB87-11	Composite	malachite stained, sericite-kaolinite ± quartz altered QM rubble/mullock, visible gold,												
-17	640E, 380S	10	fractured and weakly sericitically altered QM, minor quartz-malachite veinlets, minor hematite												
37-18	650E, 480S	1.0	Silicified ± malachite-hematite shear zone at pegmatitic granite - QM contact, weak sericite and hematite alteration; N80W 85°W												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP 1987 J. LEESMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
3887-19	530E, 530S	2.5	hematitic-carbonate ± SiO_2 stockwork in sericitically altered QM adjacent to sheared-argillized dike contact - hematite on fractures is common												
-20	515OE, 180S	0.7	barite-carbonate breccia vein in a fracture zone in hornblende granodiorite, no wall rock alteration												
-21	245OE, 700S near 88-7, 8	1.5	hematite-carbonate-SiO_2 ± barite-malachite vein(as ft) in chloritic-kaolinitic QM below andesite dike												
-22	318OE, 650N	Composite	quartz vein rubble over 50 ft, highly fractured with limonite-hematite-carbonate on fractures, no alteration seen												
-23	850W, 600N near BB86-7	Grab	fault breccia zone (0.1-0.2 ft wide) - quartz-limonite-hematite-sericite with altered (argillized) andesite fragments - recent/late feature?												
-24	285OW, 570N near TRBB87-12	6.0	sericite-kaolinite-hematite altered QM with a 0.25 ft wide quartz-hematite-carbonate ± malachite vein, vein trends N50E, vertical												
-25	TR BB87-11	0.5	malachite stained, sericite ± quartz ± kaolinite altered sliver of QM, sheared rock caught between andesite dikes, shallow dip (25°)												
-26	TR BB87-11	0.7	same sliver of QM as at -25 but on other side of pit.												
-27	TR BB87-11	3	Sheared sericite-kaolinite-hematite altered QM with narrow (0.1) carbonate veinlets, sheared kaolinitic dike (andesite) adjacent to interval												
-28	TR BB87-11	10	variably sheared, bleached (kaolinized) andesite with hematite on fractures and Fe staining away from fractures												
-29	TR BB87-6	4	andesite-QM contact, sheared, fracturing of dike and QM - bleaching (argillization) of both rock types with hematite - FeO_x on fractures												
3887-30	TR BB87-7	3	fractured pegmatitic granite with weak sericite alteration adjacent to andesite dike contact, biotite-rich QM also included in sample												
-31	TR BB87-7	4	fractured pegmatitic granite and biotite QM above dike contact, interval similar to -30.												
-32	TR BB87-7	3	quartz-sericite vein zone in apple green sericite altered QM, quartz is fractured with hematite coatings												
-33	TR BB87-8	5	sheared and broken, weakly sericite-kaolinite-hematite altered QM with narrow quartz veinlets, adjacent to dike, no malachite												
-34	TR BB87-8	3	andesite dike with sheared, siliceous contacts with host QM, minor hematite.												
-35	TR BB87-8	7	broken, quartz-hematite veinleted QM, moderate kaolinite-sericite-hematite-carbonate alteration, rare barite veinlets.												
3887-36	TR BB87-8	10	fractured and sheared QM with numerous quartz-FeO_x veinlets, wk kaolinite-sericite alteration of QM, flat to south dipping shears common												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP 1987 J. LESSMAN - C. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg	
BB87-37	TR BBB7-8	8	weakly altered (sericite-kaolinite-hematite) biotite QM, rare quartz-FeO_x vnlts.													
-38	TR BBB7-8	10	weakly altered (sericite-kaolinite-hematite QM, rare qtz-hm vnlts and fractures.													
-39	TR BBB7-9	3	weakly kaolinite-sericite-hematite altered coarse grnd. QM, dk brwn/blk FeO_x-hm on fractures													
-40	TR BBB7-9	7	broken-sheared QM with 2 ft. wide strongly argillized andesite dike, hm on fractures													
-41	TR BBB7-9	6.5	moderately argillized-bleached med-cse grnd QM, minor hm coating on fractures and rare qtz-hm vnlts.													
-42	TR BBB7-10	0.3	Fe-carbonate vein hosted in bleached QM, no malachite or quartz													
-43	TR BBB7-10	2	sericitic (apple green) QM with 0.5 ft wide quartz vein with hematitic fractures, vein is discontinuous perhaps due to faulting													
-44	TR BBB7-10	4	moderately sericitized-hematized zone in QM, pale green with 30%-40% sericite, narrow barite veinlets, shallowly dipping shear(?) may control alteration													
-45	TR BBB7-12	0.5	Quartz-hematite-barite-Fe carbonate vein, no malachite, same vein as -24, weak kaolinite-sericite alteration halo - see -46													
-46	TR BBB7-12	6	Kaolinite-sericite altered QM with rare hematitic fractures, interval consists of 3 ft either side of vein in -45													
-47	TR BBB7-12	9	Kaolinized (bleached) and weakly sericitic QM with veinlet (qtz-hm-barite) at south end.													
-48	TR BBB7-13	1.2	Fe-carbonate cemented breccia vein w/ sub & QM fragments, matrix dominant, no alteration or metallic mineralization													
-49	TR BBB7-13	10	Weakly bleached (kaolinized) QM with Fe-carbonate & barite breccia veinlets and fracture fills													
-50	TR BBB7-13	10	Weakly bleached and Fe-carbonate veinleted QM similar to that in -49,													
-51	BUTTE MINE 40N, 20W	1.0	Fracture zone with carbonate cement breccia and carb-qtz veining, malachite staining, at andesite dike contact with QM													
-52	BUTTE MINE 50N, 15W	5.0	broken, fracture zone with carbonate and carbonate breccia veins													
-53	BUTTE MINE 60N, 25E	0.9	Weakly altered andesite with ¼"-2" wide quartz-malachite veins, alteration restricted to fracture-vein zone													
BB87-54	BUTTE MINE 00N, 15W	1.3	Fractured andesite with malachite staining													

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP 1987 J. LEESMAN, G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
BB7-55	BUTTE MINE 30S, 10W	2.2	Sericite altered QM between unaltered andesite, 1/4"-3/4" Qtz-malachite veinlets at contacts												
-56	BUTTE MINE 55S, 60E	1.2	Sericite altered QM with Cu stain hosting 0.8' wide silicified and veined zone, veins are qtz-hm-carb-cpy-bn-cc+malachite (V.G.)												
-57	BUTTE MINE 55S, 60E	1.7	Hanging Wall to vein zone in -56, weakly to moderately sericitized QM, minor Cu stain.												
-58	BUTTE MINE 55S, 60E	3.6	Footwall of vein zone in -56, sericitic QM with secondary Qtz-carb-hm-Cu veinlets												
-59	BUTTE MINE 85S, 45E	5.0	Silicified, sericitic and veinletted QM, irregular units of qtz-hm-mal												
-60	BUTTE MINE 85S, 45E	4.0	West side of -59, sericite altered QM with qtz-hm veinlets, some kaolinite, interval covers alt. QM halo												
-61	BUTTE MINE 85S, 45E	4.0	East side of -59, unaltered QM												
-62	BUTTE MINE 75S, 155W	4.8	Andesite with three broken/fault zones and minor veining, minor Cu stain												
-63	BUTTE MINE 75S, 155W	2.7	Broken, sheared, weakly sericitic QM west of andesite dike contact which marked by Cu stn. adjacent to -62.												
-64	BUTTE MINE 95S, 165W	1.1	Copper stained zone at andesite-QM contact, sample includes 0.7ft of QM and 0.3ft andesite plus narrow qtz. vein												
BB7-65	BUTTE MINE 125S, 45E	1.1	Sheared, silicified and sericitic QM with several qtz-hm-cc-mal units												
-66	BUTTE MINE 125S, 45E	2.1	Sericitic QM on HW to zone in -65, taken to cover alteration halo												
-67	BUTTE MINE 125S, 45E	1.7	Sericitic QM with weak but common Cu stain, covers moderately altered zone.												
-68	BUTTE MINE 350S, 200E	Composite 23	Sericite-hematite altered QM, alteration intensity is variable, specularite common.												
-69	BUTTE MINE 435S, 140E	Composite 5.0	Moderately to strongly ser-hm altered QM with thin carbonate br zones and units.												
-70	BUTTE MINE 400S, 145E	1.3	Pegmatite and adjacent weakly altered dike-andesite, fracturing at one contact												
-71	BUTTE MINE 140S, 85W	1.1	Fracture/Contact with Qtz-hm±mal vein between broken QM and altered andesite, alteration restricted to fracture zone.												
	BUTTE MINE	1.7	Fracture/Vein zone at QM-andesite contact,												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP, 1987 J. LESSMAN-G. CLEVELAND

AMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
B87-73	BUTTE MINE 150S, 10W	5.2	Altered andesite with two veins (0.3' and 0.2'), carbonate alteration with sericite near the qtz-hem-mal-carbonate veins												
-74	BUTTE MINE 150S, 10W	3.7	Altered andesite below sample -73, interval covers andesite to contact with QM, carbonate-mal ± qtz vnlts with sericite alt. halo												
-75	BUTTE MINE 150S, 10W	1.7	Sericite altered QM adj. to andesite in -74, QM becomes fresher away from andesite.												
-76	BUTTE MINE 150S, 10W	3.3	Broken-faulted(?) carbonate altered andesite, without carb. vnlts and ser. alt as in -77.												
-77	BUTTE MINE 150S, 10W	4.0	Pinkish red carbonate altered andesite, adj. to -76 and cover dike to contact with QM no carb. vnlts or ser. alt.												
-78	BUTTE MINE 230S, 80W	1.6	Weakly fractured QM with narrow (1/2") qtz-hm-mal vnlts, includes sericite alteration envelope - fresh QM either side of sample.												
-79	BUTTE MINE 240S, 85W	1.1	Quartz vein with minor FeOx + Cu stain, sericite-altered QM either side - sample covers whole of altered width -												
B87-80	BUTTE MINE 245N, 90E	4.2	Altered andesite with one Cu-bearing Qtz vein, pumenly carbonate ± sericitic altn.												
-81	BUTTE MINE 245N, 90E	4.5	Altered andesite adjacent to -80, andesite carbonated ± sericite altered, one quartz vein zone (2"-3" wide) - QM contact near by.												
-82	BUTTE MINE 215N, 215E	0.6	Fracture zone consisting of subparallel carbonate vnlts in QM, no alteration, silica, no copper.												
-83	BUTTE MINE 160N, 105E	3.4	Andesite-QM contact which includes several Cu stnd qtz vnlts and two 1" veins, includes 1.1 ft of sericite altered QM												
-84	BUTTE MINE 160N, 105E	2.1	QM-andesite contact, sericite alteration common, adjacent to -83, includes 1.1' of QM and 1.0' of andesite, no mineralization												
-85	BUTTE MINE 160N, 105E	4.6	Sericite altered QM west of contact in -83, hm vnlt and qtz vnlt included in sample, alt. zone extends beyond sample.												
-86	BUTTE MINE 125N, 75E	1.0	Sericite altered QM with 0.4 ft wide vein zone, alteration extends to east, see -87 for continuation.												
-87	BUTTE MINE 125N, 75E	4.7	Sericite altered QM adjacent to -86, covers all QM, to andesite contact which includes 0.1' wide qtz-cc-mal vein.												
-88	BUTTE MINE 125N, 75E	5.0	Sericite altered andesite with three Qtz-mal veins (1" each), covers most of alteration envelope.												
-89	BUTTE MINE 100N, 70E	2.0	Sericite altered QM hosting a 0.4' wide qtz-hm-Cu vein and qtz vein (pegmatitic?).												
[illegible]-90	BUTTE MINE	2.0	Sericite altered QM between vein zone in -89 and andesite dike contact. few carb-qtz												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP 1987 J. LESSMAN - G. CLEVELAND

AMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
BB7-91	BUTTE MINE 100N, 70E	6.7	Hematite-sericite-carbonate altered andesite from QM contact to vein in -92, strong sericite alt. (overprint) associated with carbonate vnlts.												
-92	BUTTE MINE 100N, 70E	COMPOSITE 1.0	Qtz-hm-mala vein (0.1'-0.3') and adjacent altered wall rock, mainly andesite but some QM.												
-93	BUTTE MINE 100N, 70E	2.0	Altered andesite on HW of vein in -92, hm-ser-carb with strong ser ± SiO_2(?) overprint.												
-94	BUTTE MINE 100N, 70E	0.4	Flat fault zone with carbonate veinlets in andesite												
-95	BUTTE MINE 75N, 60E	3.5	Fractured and veinletted (carb) andesite dike including both QM contacts - narrow carb vein included.												
-96	BUTTE MINE 85N, 120E	2.2	Fracture zone in QM with qtz vnlts and minor Cu stain, weak ser. alt. envelope.												
-97	BUTTE MINE 85N, 120E	1.4	Andesite-QM contact including 0.3-0.5 ft wide qtz vein (pegmatitic?), strong sericite alteration of QM and andesite												
-98	BUTTE MINE 265N, 105W	7.8	Complex zone of andesite, QM + peg. qtz with flat lying structures, carbonate and qtz vnlts common, adj. to -99.												
-99	BUTTE MINE 265N, 105W	2.6	Vein qtz at andesite-complex zone in -98, massive white qtz, probably pegmatitic.												
BB7.-100	TRBB87-1	2.1	Fracture zone in andesite with 1" thick qtz-carb-mod az vein and several vnlts.												
-101	TRBB87-13	8	Kaolinized-carbonatic andesite dike with carbonate veinlets and breccia veins, also includes 1.5 ft of bleached QM												
-102	TRBB87-13	10	Weakly kaolinized QM with Fe-carbonate veinlefing, competent rock not grussy, silicification of grd mass(?).												
-103	TRBB87-13	8	Fractured, weakly veined and veinleted (Fe-carbonate) QM, veining less common to north away from dike.												
-104	TRBB87-14	8	Moderately sericitized QM with 2-3 limonite coated fractures/ft, several 0.1 ft quartz ± barite-rare malachite veins, most intensely fractured zone in trench												
-105	TRBB87-14	10	Moderately sericitized QM with few lm-hm fractures, no qtz veinlets												
-106	TRBB87-14	5	Moderately to strongly sericitic QM (30% ser) with weak hm fracturing and rare quartz-veinlets												
-107	TRBB87-15	0.3	Malachite stained sericitic QM with 0.1 ft wide quartz-malachite-hematite vein, old pit area												
		9.5	Weakly to moderately sericitic QM with orange-brown FeOx on fractures, more sericite near,												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP 1987 J. LESSMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
B87-109	TRBB87-15	1.2	Quartz ± malachite ± chalcocite ± hematite vein, trend E-W, steep dip												
-110	TRBB87-15	9	broken, moderately argillized and sericitized feldspar porphyry, some hematitic fractures no quartz veins, adjacent to -109												
-111	TRBB87-15	10.5	Variably sheared, argillized and hematized andesite dike, rare quartz veinlets and slivers of granitic rock.												
-112	TRBB87-15	0.4	Strongly fractured and argillized monzonite with malachite-hematite-quartz vein/zone, same vein/structure as in pit to east, see -115.												
-113	TRBB87-15	1.25	Quartz - Fe carbonate - hematite - malachite vein in strongly bleached monzonite, trend unknown												
-114	TRBB87-15	0.5	Fe-carbonate - specularite vein at andesite dike contact, no malachite nor quartz												
-115	TRBB87-15	2.7	Bleached-argillized monzonite with a 0.4 ft quartz-hematite-Fe-carbonate ± malachite vein, malachite staining to 1.5 ft from vein.												
-116	TRBB87-16	5	Sericite-kaolinite-hematite altered QM with narrow quartz-hematite-barite veinlets, rare malachite												
-117	TRBB87-16	10	Kaolinite ± sericite altered QM with narrow quartz-hematite fractures and veinlets, abundant calcite over western 1.5 ft.												
-118	TRBB87-16	10	bleached, kaolinized QM, hematitic fractures, no quartz veinlets												
-119	TRBB87-17	0.5	Quartz-hematite ± barite ± malachite vein/structure at sheared andesite dike contact												
B87-120	TRBB87-17	10	Fractured and sheared argillized and hematitic andesite dike, rare quartz-hematite fractures												
-121	TRBB87-17	5	Greenish-sericite-kaolinite-hematite altered QM, fractures near vein (-119) have bright orange coating.												
-122	TRBB87-17	8	Weakly to moderately argillized-sericitic-hematitic QM, rare quartz-hematite fractures												
-123	pit near TRBB87-17	0.8	Quartz ± barite - hematite - malachite vein in sericitic QM about 1 ft. from andesite dike contact.												
-124	pit near TRBB87-17	5	Sericitic QM to east of (-123) and between (-123 vein and dike), also 0.5' of andesite dike with barite veinlet (4.5 of QM, 0.5 andesite)												
-125	TRBB87-18	4.8	Sheared, argillized and hematitic andesite dike with narrow (0.2ft) quartz-specularite vein at contact.												
-126	TRBB87-18	0.8	Quartz - hematite vein - same as veinlet in (-125) but other side of trench.												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP, 1987 J. LESSMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
B87-127	TRBB87-18	8	Bleached-argillized QM with rare quartz-hematite fractures and veinlets												
-128	TRBB87-18	6	Argillized and hematitic QM with narrow quartz-hematite-malachite veinlet, includes dacite and quartz rich QM material.												
-129	TRBB87-18	8	Quartz rich (silicified?) QM with narrow quartz-hematite ± malachite veinlets - resistant rib - sampled from Ct of trench.												
-130	TRBB87-18	8.5	Argillized QM with rare malachite stained fractures and quartz-hematite vnlts.												
-131	pit near TRBB87-18	3	Fracture zone in QM with narrow quartz-hematite-barite-malachite veinlets, zone trends N20E 40°NW.												
-132	2800S, 3500W	10	Greenish tuff (Mid-Tertiary) outcrop SW of Black Butte - numerous slicks/shears, no evidence of veining, pyrite or metallics.												
-133	TRBB87-1	11	Sliver of sericite-carbonate altered andesite, adjacent to -100,												
-134	TRBB87-1	3.7	Altered andesite hosting two 1"-2" qtz-Cu carb ± sulfide veins, sliver of QM in shear zone with easterly vein.												
-135	TRBB87-1	9.2	Sericite altered andesite or dacite, no veins but well altered.												
-136	TRBB87-1	3.2	Sheared quartz monzonite, sliver caught between two dikes.												
-137	TRBB87-1	8.0	Strongly sericite-carbonate altered andesite, well sheared on eastern contact												
-138	TRBB87-1	4.3	Sericite-carbonate altered andesite at contact with QM												
-139	TRBB87-1	7.1	Sericite altered QM hosting NE trending qtz veins and one NW trending Qtz-hm-mal vein.												
B87-140	TRBB87-2	18	Sericitic-carbonate altered andesite or dacite, includes 2 ft. of sericitic QM												
-141	TRBB87-2	4.9	Sericitic QM sliver caught between andesite dikes, includes contacts.												
-142	TRBB87-2	5.4	Sheared, sericitic QM and andesite, vein with trace malachite												
-143	TRBB87-2	7.3	Weakly sericitic dacite and contact zone with andesite, no veins.												
		10.6	Weakly sericitic dacite, no veins												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP, 1987 J. LESSMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
BB7-145	TRBBB7-1	25	Quartz monzonite - weakly sericitic near contact with andesite at eastern end of interval, includes 6' of andesite												
-146	TRBBB7-1	24.4	Fracture zone with thin carbonate veins, includes sericitic QM, andesite and sheared andesite, adj to -100.												
-147	TRBBB7-1	9.5	Andesite and sheared-sericitic andesite adjacent to vein zone (-134), no alteration, no veins.												
-148	TRBBB7-1	14.8	Andesite and weakly altered andesite, no veins, shearing associated with ser-carb alteration.												
-149	TRBBB7-1	26.5	Andesite and weakly to moderately sericite altered pegmatite, includes dacite dike, rare malachite.												
-150	TRBBB7-1	25.5	Weakly sericitic pegmatite, QM and andesite, no veins												
-151	TRBBB7-1	18.2	Quartz monzonite, patchy sericite, includes a 6.0 QM dike/body.												
-152	TRBBB7-3	8.5	QM - andesite with two narrow carbonate veins, minor shearing, v. weak alteration												
-153	TRBBB7-3	6.0	QM, sheared and sericitic at eastern end at contact with andesite												
-154	TRBBB7-3	10.5	Weakly altered (carbonate-hm ± ser) andesite												
BB7-155	TRBBB7-3	6.0	Sericite-carbonate-hematite altered andesite adjacent to sericitic QM zone.												
-156	TRBBB7-3	7.5	Sericite altered QM and andesite with narrow carbonate veins.												
-157	TRBBB7-3	14.5	Sericite altered QM with narrow sericitic andesite dikes, carb-qtz veinlets.												
-158	TRBBB7-4	1.0	sericitic andesite - QM contact with a steep, 1"-4" qtz-hm-mal vein.												
-159	TRBBB7-4	8.0	Variably altered (sericite) QM and andesite with narrow qtz-copper vein (-158).												
-160	TRBBB7-4	13.0	Sericitic QM and dacite, indistinct contact due to alteration?												
-161	TRBBB7-4	13.5	Sericite altered andesite and QM, flat lying dike, locally strong sericite.												
[illegible]	[illegible]	10.8	Sericitic QM, includes sheared, broken zone (fault?)												

BLACK BUTTE GOLD PROJECT SAMPLE DESCRIPTIONS AUG-SEP, 1987 J. LESSMAN - G. CLEVELAND

SAMPLE NUMBER	LOCATION	LENGTH (ft)	DESCRIPTION	Au	Cu	Pb	Zn	Ag	As	Mo	Sb	Bi	Cd	Se	Hg
B87-163	TRBB87-4	12.5	Sheared and sericitic QM with narrow qtz vein, includes 6 ft. of ser-kaol alt. dacite												
B87-164	TRBB87-4	8.0	Sericite altered QM and dacite, rare carbonate veins.												
			BUCHANAN CLAIM BLOCK												
BUC 87-1		Grab	Dark to light green f.g. mineral in fractures in andesite, hot Cu carbonate												
UC 87-2		Composite	crusty, vuggy quartz veinlets in dacite, no alteration envelope												
UC 87-3		Grab	milky white quartz veinlets in sandy qtz-feldspar-bio tuff												
UC 87-4		Grab	red-brown, massive, aspheroidal silica float.												
UC 87-5		Composite	quartz-calcite veinlets in latitic volcaniclastic.												
UC 87-6		Composite	Chalcedonic vein (2"-3" thick) in same host as -5.												
UC 87-7		Composite	hematitic-kaolinitic shear/fault gouge												
UC 87-8		Stream Silt	wash draining NW of Claim Block												
UC 87-9		Pan Concentrate	same location as -8.												
UC 87-10		Composite	stkwk, chalcedonic veining in andesite, (20'x50' area).												
			DIXIE PROSPECT												
DX 87-1		0.8	shear/fault vein zone exposed in top of inclined shaft, mal-az-hm qtz vn on FW of fazo - 0.3' ia gouge												
DX 87-2		Composite	Sericite, FeOx altered volcanic breccia rubble/mullock from deep shaft above (-1). altered zone 6+ ft thick, pyrite 2-3%												
DX 87-3		10.5	sericite-kaolinite ± FeOx altered volcanic bx, west wall of pit on N side of prospect, alt. zone extends beyond sample interval												
DX 87-4		Grab	unaltered volcanic breccia (qtz frags in												

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212 BROOKSBANK AVE., NORTH VANCOUVER,
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PHONE (604) 984-0221

To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : BLACK BUTE
Comments: ATTN: L. DEIGHTON

SEP 0 8 1987

Page No. : 1-A
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Invoice # : I-8720784
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CERTIFICATE OF ANALYSIS A8720784

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Al %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
BB-87-01	205	238	< 5	0.10	0.4	5	250	< 0.5	< 2	8.52	2.5	9	56	11	1.24	< 10	< 1	0.02	< 10	0.90	1525

CERTIFICATION : _____

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Project : BLACK BUTE
Comments: ATTN: J. DEIGHTON

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Invoice # : I-8720783
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CERTIFICATE OF ANALYSIS A8720783

SAMPLE DESCRIPTION	PREP CODE		Au ppb RUSHRUSH FA	Au oz/T RUSHRUSH FA	Al %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
BB87-2	236	238	< 5	< 0.003	0.11	2.6	35	1760	< 0.5	6	>15.00	< 0.5	16	< 1	41	7.40	< 10	1	0.07	< 10	0.30

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Project : BLACK BUTE
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SEP 09 1987

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CERTIFICATE OF ANALYSIS A8721058

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T	Al %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
BERT 87-1 CLOTH	207	238	< 0.003	0.19	0.2	15	3770	< 0.5	2	>15.00	0.5	39	< 1	2140	2.38	< 10	1	0.10	< 10	0.12	5080
BERT 87-3 CLOTH	207	238	0.006	0.12	7.6	10	420	< 0.5	312	1.52	1.0	8	28	52	10.75	< 10	< 1	0.03	< 10	0.10	218
BERT 87-3 PLAST	207	238	0.054	0.04	6.8	5	4500	< 0.5	396	1.33	< 0.5	7	3	3110	1.78	< 10	< 1	0.01	< 10	0.06	1445

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JOHN D.

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V6C 2X8
Project : UPG-BB
Comments: ATTN: JOHN PEIGHTON

SEP 23 1987

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CERTIFICATE OF ANALYSIS A8721752

SAMPLE DESCRIPTION	PREP CODE		Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm	Au ppb FA+AA		
BB87-03	205	—	1.8	25	3.5	2.0	4200	22	570	5	0.2	0.3	242	275		
BB87-04	205	—	1.6	14	0.8	0.1	111	13	200	4	0.2	0.1	65	15		
BB87-05	205	—	1.0	11	0.3	0.1	85	22	50	2	0.2	0.1	126	< 5		
BB87-06	205	—	0.8	50	0.3	0.1	600	3	100	7	0.2	0.1	39	185		
BB87-07	205	—	1.0	9	2.6	0.1	6650	1	50	5	0.2	0.1	18	1900		
BB87-08	205	—	0.5	11	1.0	0.1	5350	1	10	3	0.2	0.1	27	75		
BB87-09	205	—	1.2	4	0.1	0.1	390	2	10	5	0.2	0.1	18	25		
BB87-10	205	—	2.4	6	0.8	0.1	>10000	1	150	2	0.2	0.1	16	7870		
BB87-11	205	—	0.2	6	0.2	0.1	2020	1	20	1	0.2	0.1	38	475		
BB87-12	205	—	0.3	6	0.1	0.1	530	3	10	1	0.2	0.1	22	80		
BB87-13	205	—	3.6	11	1.3	0.1	>10000	1	30	3	0.2	0.1	28	>10000	-	ASSAY
BB87-14	205	—	0.8	16	4.0	0.1	>10000	12	60	3	0.2	0.1	38	555		
BB87-15	205	—	0.6	10	1.2	0.1	870	1	30	4	0.2	1.4	22	1800		
BB87-16	205	—	1.2	4	1.5	0.1	>10000	1	10	3	0.2	0.1	10	>10000		- ASSAY
BB87-17	205	—	1.4	5	0.3	0.1	1880	2	30	5	0.2	0.1	13	2100		
BB87-18	205	—	0.8	6	0.8	0.1	8800	1	10	5	0.2	0.1	15	440		
BB87-19	205	—	1.0	11	0.3	0.1	510	1	60	11	0.2	0.1	26	55		
BB87-20	205	—	0.4	24	1.0	0.1	78	1	70	6	0.2	0.1	52	5		
BB87-21	205	—	0.6	14	2.8	0.1	5000	1	20	6	0.2	0.1	16	420		
BB87-22	205	—	0.4	9	0.2	0.1	130	1	10	3	0.2	0.1	24	5		
BB87-23	205	—	0.5	23	1.5	0.1	1100	1	50	5	0.2	0.1	45	525		
BB87-24	205	—	0.2	6	0.5	0.1	2200	1	10	3	0.2	0.1	16	640		
BB87-25	205	—	1.0	6	1.5	0.1	>10000	1	10	5	0.2	0.1	17	4340		
BB87-26	205	—	0.6	7	2.3	0.1	9000	1	10	2	0.2	0.4	17	4140		
BB87-27	205	—	0.5	7	1.3	0.1	510	2	70	6	0.2	0.1	42	65		
BB87-28	205	—	0.8	10	0.2	0.1	172	2	10	2	0.2	0.1	49	75		
BB87-29	205	—	0.2	3	0.3	0.1	310	1	10	3	0.2	0.1	17	5		
BB87-30	205	—	0.2	5	0.2	0.1	191	1	30	2	0.2	0.1	30	< 5		
BB87-31	205	—	0.2	6	0.1	0.1	20	1	10	3	0.2	0.1	28	< 5		
BB87-32	205	—	0.1	6	0.3	0.1	132	2	10	1	0.2	0.1	14	5		
BB87-33	205	—	0.5	4	0.4	0.1	48	6	50	6	0.2	0.1	44	20		
BB87-34	205	—	0.4	7	0.6	0.1	44	3	160	7	0.2	0.1	82	20		
BB87-35	205	—	0.6	7	2.0	0.1	222	20	50	5	0.2	0.1	58	15		
BB87-36	205	—	0.4	10	0.7	0.1	250	23	50	3	0.2	0.1	63	15		
BB87-37	205	—	0.4	5	0.2	0.1	30	2	30	3	0.2	0.1	42	5		
BB87-38	205	—	0.5	5	0.3	0.1	50	6	50	1	0.2	0.1	60	< 5		
BB87-39	205	—	0.4	14	0.1	0.1	22	1	10	6	0.2	0.1	38	< 5		
BB87-40	205	—	0.4	7	0.3	0.1	60	3	10	1	0.2	0.1	32	< 5		
BB87-41	205	—	0.5	15	0.2	0.1	37	2	10	5	0.2	0.1	43	5		
BB87-42	205	—	0.6	32	0.1	0.1	10	1	10	6	0.2	0.1	35	< 5		

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BB 87-2 missing.

To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
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Project : UPG-BB
Comments: ATTN: JOHN PEIGHTON

SEP 1 2 '87

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CERTIFICATE OF ANALYSIS A8721752

SAMPLE DESCRIPTION	PREP CODE		Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm	Au ppb FA+AA		
BB87-43	205	—	0.2	32	0.1	0.1	48	72	10	4	0.2	2.6	22	< 5		
BB87-44	205	—	0.1	15	0.1	0.1	47	1	10	1	0.2	0.1	18	< 5		
BB87-45	205	—	0.1	14	6.5	0.1	630	1	20	6	0.2	0.1	26	35		
BB87-46	205	—	0.1	6	0.2	0.1	280	1	10	2	0.2	0.1	16	75		
BB87-47	205	—	0.1	5	0.2	0.1	115	1	10	3	0.2	0.1	15	15		
BB87-51	205	—	0.8	29	7.0	2.0	10000	12	70	5	0.2	0.1	153	765		
BB87-52	205	—	0.1	14	0.3	0.1	90	1	30	5	0.2	0.1	30	15		
BB87-53	205	—	0.1	10	0.7	0.1	5000	1	70	1	0.2	0.1	28	1000		
BB87-54	205	—	0.1	9	0.1	0.1	7600	5	not/ss	3	0.2	0.1	48	35		
BB87-55	205	—	1.0	11	3.1	1.1	>10000	172	120	2	0.2	1.0	165	3270	3.29	
BB87-56	205	—	1.8	24	27.0	0.4	>10000	185	810	7	0.2	0.8	260	>10000		
BB87-57	205	—	0.3	5	0.6	0.1	770	5	40	1	0.2	0.1	26	95		
BB87-58	205	—	0.1	5	0.6	0.3	2560	52	40	7	0.2	0.1	42	125		
BB87-59	205	—	0.1	5	0.7	0.1	4230	9	100	3	0.2	0.1	32	135		
BB87-60	205	—	0.4	6	0.6	0.1	710	12	20	8	0.2	0.1	28	20		
BB87-61	205	—	0.1	3	0.1	0.1	98	4	30	1	0.2	0.1	13	15		
BB87-62	205	—	0.4	14	2.6	0.1	2030	4	60	3	0.2	0.1	96	765		
BB87-63	205	—	0.1	11	0.3	0.1	273	1	20	2	0.2	0.1	24	20		
BB87-64	205	—	0.2	20	0.8	0.1	2950	1	20	6	0.2	0.1	26	1135		
BB87-65	205	—	0.8	17	3.3	0.1	>10000	18	150	3	0.2	0.1	76	515		
BB87-66	205	—	0.2	6	0.6	0.3	700	13	70	6	0.2	0.1	33	55		
BB87-67	205	—	0.2	6	0.3	0.1	4200	1	50	2	0.2	0.1	26	165		
BB87-68	205	—	0.1	3	0.1	0.1	104	2	10	4	0.2	0.1	10	25		
BB87-69	205	—	0.2	5	0.1	0.1	58	1	20	2	0.2	0.1	17	45		
BB87-70	205	—	0.6	3	0.1	0.1	72	2	10	4	0.2	0.1	38	< 5		
BB87-71	205	—	0.6	12	0.8	0.1	8600	1	40	3	0.2	1.1	22	>10000		
BB87-72	205	—	0.4	7	3.1	0.1	8200	2	40	6	0.2	0.2	24	2200		
BUC87-03	205	—	0.1	15	0.1	0.1	210	3	10	4	0.2	0.1	17	155		
BUC87-04	205	—	0.2	2	0.1	0.1	122	1	10	11	0.2	0.1	6	20		
BUC87-05	205	—	0.1	2	0.1	0.1	82	1	20	4	0.2	0.1	16	5		
BUC87-06	205	—	0.2	2	0.1	0.1	57	4	30	4	0.2	0.1	14	5		
BUC87-07	205	—	0.1	4	0.1	0.1	98	2	10	1	0.2	0.1	57	15		
BUC87-10	205	—	0.2	2	0.1	0.1	25	1	10	15	0.2	0.1	22	5		
DX87-01	205	—	0.8	10	2.7	0.1	>10000	22	10	20	1.0	0.1	460	240		
DX87-02	205	—	0.2	24	1.1	0.1	191	3	10	6	0.2	0.1	37	20		
DX87-03	205	—	0.2	11	1.2	0.1	272	2	10	3	0.2	0.1	30	15		
DX87-04	205	—	0.4	4	0.1	0.1	120	1	10	5	0.2	0.1	34	20		

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CERTIFICATION : Hans Büchler

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2000 - 666 BURRARD ST.
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Project : UPG-BB
Comments: ATTN: J. DEIGHTON

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SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm		
BB-87 048	205	—	< 5	0.1	53	0.1	0.1	32	1	60	2	0.2	0.1	58		
BB-87 049	205	—	< 5	0.1	17	0.1	0.1	38	1	40	1	0.2	0.1	31		
BB-87 050	205	—	< 5	0.1	14	0.1	0.1	26	1	30	1	0.2	0.1	31		
BB-87 073	205	—	1100	0.6	11	1.4	0.1	>10000	1	260	1	0.2	0.1	57		
BB-87 074	205	—	580	0.1	12	1.4	0.4	2050	1	140	1	0.2	0.1	82		
BB-87 075	205	—	75	0.1	15	1.5	0.6	1000	29	170	1	0.2	0.1	92		
BB-87 076	205	—	35	0.1	6	0.1	0.1	171	21	70	1	0.2	0.1	30		
BB-87 077	205	—	< 5	0.1	3	0.1	0.1	14	1	30	1	0.2	0.1	32		
BB-87 078	205	—	55	0.1	5	1.1	0.1	1200	2	20	1	0.2	0.1	18		
BB-87 079	205	—	160	0.1	6	1.1	0.1	2250	2	30	1	0.2	0.1	19		
BB-87 080	205	—	440	0.1	5	0.5	0.1	2400	1	110	1	0.2	0.1	21		
BB-87 081	205	—	95	0.1	7	0.5	0.1	955	1	70	1	0.2	0.1	38		
BB-87 082	205	—	15	0.4	6	0.1	0.1	28	6	60	2	0.2	0.1	77		
BB-87 083	205	—	3470	0.4	29	8.0	0.9	>1000	31	570	1	0.2	0.1	140		
BB-87 084	205	—	100	0.1	19	1.1	0.3	520	8	160	1	0.2	0.1	50		
BB-87 085	205	—	55	0.1	17	17.0	0.1	265	9	130	10	0.4	0.1	46		
BB-87 086	205	—	1465	0.2	19	5.0	0.1	>10000	45	340	5	0.2	0.1	65		
BB-87 087	205	—	445	0.1	9	0.4	0.1	2680	1	120	4	0.2	0.1	19		
BB-87 088	205	—	3270	0.6	15	0.4	0.1	>10000	1	80	1	0.2	0.1	39		
BB-87 089	205	—	135	0.1	9	12.0	0.1	4900	29	110	4	0.2	0.1	50		
BB-87 090	205	—	80	0.2	15	2.5	0.3	900	8	190	7	0.2	0.1	58		
BB-87 091	205	—	5	0.2	4	0.1	0.1	69	1	90	1	0.4	0.1	35		
BB-87 092	205	—	180	0.1	14	2.2	0.1	1560	4	150	3	0.2	0.1	70		
BB-87 093	205	—	5	0.1	15	0.2	0.1	70	1	100	3	0.2	0.1	37		
BB-87 094	205	—	20	0.1	14	0.1	0.1	58	1	90	1	0.2	0.1	35		
BB-87 095	205	—	15	0.1	9	0.1	0.1	150	2	70	1	0.2	0.1	38		
BB-87 096	205	—	320	0.1	11	2.4	0.1	3170	8	50	1	0.4	0.1	45		
BB-87 097	205	—	60	0.1	5	2.8	0.1	130	15	120	1	0.2	0.1	33		
BB-87 098	205	—	45	0.1	30	0.2	0.1	15	2	40	2	0.2	0.1	34		
BB-87 099	205	—	5	0.1	6	0.1	0.1	8	1	20	1	0.2	0.1	13		
BB-87 100	205	—	80	0.1	25	1.4	0.1	2160	2	50	1	0.2	0.1	47		
BB-87 101	205	—	165	1.0	16	0.1	0.1	28	10	30	1	0.2	0.1	111		
BB-87 102	205	—	< 5	0.1	16	0.1	0.1	14	1	20	1	0.2	0.1	20		
BB-87 103	205	—	< 5	0.1	11	0.1	0.1	9	2	20	1	0.2	0.1	21		
BB-87 104	205	—	40	0.1	4	2.6	0.1	880	1	20	1	0.2	0.1	21		
BB-87 105	205	—	5	0.1	4	0.1	0.1	120	1	10	1	0.2	0.1	20		
BB-87 106	205	—	35	0.1	4	0.1	0.1	54	1	10	1	0.2	0.1	23		
BB-87 107	205	—	6200	0.2	15	2.6	0.1	>10000	1	40	1	0.2	0.1	15		
BB-87 108	205	—	75	0.1	6	0.8	0.1	690	1	20	1	0.2	0.1	12		
BB-87 109	205	—	6140	0.8	15	7.0	0.1	>10000	1	5400	3	1.0	1.8	23		

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : Ian Bucher

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PHONE (604) 984-0221

To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : UPG-BB
Comments: ATTN: J. DEIGHTON

Date : 29-SEP-87
Invoice # : I-8721958
P.O. # :

CERTIFICATE OF ANALYSIS A8721958

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm		
BB-87 110	205	—	40	0.1	5	0.1	0.1	640	1	80	1	0.2	0.1	19		
BB-87 111	205	—	5	0.1	9	0.1	0.1	145	1	50	1	0.2	0.1	31		
BB-87 112	205	—	75	0.4	14	1.6	0.1	>10000	1	50	1	0.4	0.1	18		
BB-87 113	205	—	275	0.1	12	0.1	0.1	6200	1	80	1	0.2	0.1	18		
BB-87 114	205	—	60	0.1	15	0.2	0.1	172	1	50	2	0.2	0.1	44		
BB-87 115	205	—	440	0.4	16	3.0	0.1	>10000	1	280	6	0.2	0.1	22		
BB-87 116	205	—	40	0.1	9	1.0	0.1	900	1	60	4	0.2	0.1	25		
BB-87 117	205	—	5	0.1	5	0.1	0.1	31	1	30	1	0.2	0.1	16		
BB-87 118	205	—	20	0.1	6	0.2	0.1	56	1	30	1	0.2	0.1	20		
BB-87 119	205	—	6200	1.4	17	>200	0.1	>10000	7	80	2	0.2	0.1	59		
BB-87 120	205	—	85	0.2	24	7.0	0.1	460	3	30	1	0.2	0.1	77		
BB-87 121	205	—	40	0.1	9	2.3	0.1	200	1	20	2	0.2	0.1	25		
BB-87 122	205	—	< 5	0.1	9	0.1	0.1	70	1	20	1	0.2	0.1	25		
BB-87 123	205	—	2970	0.4	11	>200	0.1	6200	5	150	3	0.2	2.8	38		
BB-87 124	205	—	585	0.1	7	6.5	0.1	735	1	30	1	0.2	0.3	21		
BB-87 125	205	—	20	0.1	33	4.4	0.1	1685	1	50	2	0.2	0.1	65		
BB-87 126	205	—	25	1.2	32	2.0	0.1	3850	1	70	6	0.2	0.1	62		
BB-87 127	205	—	< 5	0.1	9	0.5	0.1	405	1	20	1	0.2	0.1	34		
BB-87 128	205	—	365	0.1	6	0.6	0.1	2350	1	30	1	0.2	0.1	19		
BB-87 129	205	—	1840	0.1	5	0.7	0.1	1600	1	20	1	0.2	0.1	10		
BB-87 130	205	—	205	0.1	9	0.5	0.1	640	1	50	2	0.2	0.1	18		
BB-87 131	205	—	3000	0.1	9	14.0	0.1	4250	1	40	2	0.2	0.1	18		
BB-87 132	205	—	< 10	0.1	3	0.1	0.1	32	2	30	1	0.2	0.1	33		
BB-87 133	205	—	5	0.1	19	0.1	0.1	172	3	40	1	0.2	0.1	42		
BB-87 134	205	—	765	0.2	19	5.3	0.3	5800	16	80	1	0.2	0.1	83		
BB-87 135	205	—	15	0.1	12	0.2	0.1	92	2	40	1	0.2	0.1	23		
BB-87 136	205	—	20	0.1	9	0.5	0.1	195	5	40	1	0.2	0.1	27		
BB-87 137	205	—	< 10	0.1	12	0.1	0.1	316	3	40	1	0.2	0.1	35		
BB-87 138	205	—	< 10	0.1	12	0.5	0.1	172	17	60	1	0.2	0.1	63		
BB-87 139	205	—	800	0.1	19	0.7	0.1	170	8	50	1	0.2	0.1	30		
BB-87 140	205	—	< 5	0.1	24	0.2	0.1	34	1	30	1	0.2	0.1	19		
BB-87 141	205	—	15	0.1	14	0.1	0.1	145	3	50	1	0.2	0.1	42		
BB-87 142	205	—	20	0.1	9	0.2	0.1	150	1	30	1	0.2	0.1	20		
BB-87 143	205	—	155	0.1	12	0.1	0.1	20	1	20	1	0.2	0.1	36		
BB-87 144	205	—	40	0.1	9	0.6	0.1	252	1	20	2	0.2	0.1	26		
BB-87 145	205	—	< 5	0.2	17	0.2	0.1	15	1	20	1	0.2	0.1	25		
BB-87 146	205	—	< 5	0.1	29	0.3	0.1	70	1	40	2	0.2	0.1	40		
BB-87 147	205	—	40	0.4	24	0.2	0.1	195	6	50	1	0.2	0.1	56		
BB-87 148	205	—	15	0.2	17	0.1	0.1	16	2	40	2	0.2	0.1	30		
BB-87 149	205	—	105	0.2	6	0.3	0.1	1400	8	40	1	0.2	0.1	24		

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CERTIFICATION : Stewart Bechler

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To: CITY RESOURCES (CANADA) LIMITED
2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8
Project : UPG-BB
Comments: ATTN: J. DEIGHTON

Date : 29-SEP-87
Invoice # : I-8721958
P.O. # :

CERTIFICATE OF ANALYSIS A8721958

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm		
BB-87 150	205	—	20	0.1	5	1.1	0.1	162	7	50	1	0.2	0.1	24		
BB-87 151	205	—	30	0.1	9	0.5	0.2	300	23	50	1	0.2	0.1	48		
BB-87 152	205	—	5	0.1	9	0.2	0.1	17	3	50	6	0.2	0.1	46		
BB-87 153	205	—	< 5	0.1	7	0.1	0.1	13	1	40	1	0.2	0.1	16		
BB-87 154	205	—	< 5	0.1	7	0.1	0.1	6	2	30	1	0.2	0.1	25		
BB-87 155	205	—	5	0.1	6	0.1	0.1	12	2	20	1	0.2	0.1	21		
BB-87 156	205	—	50	0.1	15	0.9	0.1	103	5	40	2	0.2	0.1	29		
BB-87 157	205	—	20	0.1	6	0.2	0.1	30	2	30	1	0.2	0.1	26		
BB-87 158	205	—	1900	0.4	33	7.0	0.1	>10000	5	390	1	0.2	0.1	90		
BB-87 159	205	—	< 5	0.1	15	0.5	0.1	386	4	80	1	0.2	0.1	44		
BB-87 160	205	—	< 5	0.1	14	0.2	0.1	116	1	100	1	0.2	0.1	24		
BB-87 161	205	—	5	0.1	15	0.1	0.1	42	1	80	1	0.2	0.1	33		
BB-87 162	205	—	5	0.1	12	1.2	0.1	56	1	30	1	0.2	0.1	15		
BB-87 163	205	—	< 5	0.1	7	0.4	0.1	27	1	20	1	0.2	0.1	16		
BB-87 164	205	—	< 5	0.1	14	0.1	0.1	17	2	40	1	0.2	0.1	33		
BUC-87 01	205	—	< 10	0.1	7	0.1	0.1	18	2	50	1	0.2	0.1	74		
BUC-87 02	205	—	< 5	0.2	5	0.1	0.1	12	4	40	1	0.2	0.1	48		

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CERTIFICATION : Ian R. Buchler

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To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : UPG-BB
Comments: ATTN: JOHN PEIGHTON

SEP 28 87

Page No. : 1
Tot. Pages: 1
Date : 23-SEP-87
Invoice # : I-8721753
P.O. # :

CERTIFICATE OF ANALYSIS A8721753

SAMPLE DESCRIPTION	PREP CODE		Sb ppm	As ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Hg ppb	Mo ppm	Se ppm	Ag ppm	Zn ppm	Au ppb FA+AA		
BUC87-8	201	—	0.3	9	0.1	0.1	40	6	50	1	0.2	0.1	70	< 5		

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CERTIFICATION : Jan Buchler

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To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

Project : UPG-BB
Comments: ATTN: JOHN PEIGHTON

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Date : 9-SEP-87
Invoice # : I-8721754
P.O. # :

CERTIFICATE OF ANALYSIS A8721754

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA									
BUC87-9	235	--	< 15									

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CERTIFICATION : Ian R. Bickell