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ST.JOE
AMERICAN CORPORATION
2002 NORTH FORBES BOULEVARD
TUCSON, ARIZONA 85705
602-622-4766

Mr. Larry Garside
Nevada Bureau of Mines
University of Nevada-Reno
Reno, Nevada 89557-0088

January 9, 1987

Mr. Garside,

Enclosed is the write-up for the Montgomery-Shoshone property we had discussed on January 6th.

Because of revisions, additions and specific directions from my superiors, I'm afaid it's a bit more lengthy than I had originally anticipated.

A black-line print and a sepia mylar of both figures is included for your ease of reproduction.

Please feel free to contact me if there any problems with the report.

Sincerely,

Doug Jorgensen
Project Geologist

GEOLOGY OF THE MONTGOMERY-SHOSHONE GOLD DEPOSIT

NYE COUNTY, NEVADA

By: Douglas K. Jorgensen
St. Joe American Corporation
2002 N. Forbes Blvd.
Tucson, AZ 85745

INTRODUCTION

In 1904, Bob Montgomery located and staked the Montgomery-Shoshone property in southern Nye County approximately 2.5 air-miles from Beatty, Nevada. In 1905, the property was sold to a Pittsburgh steel interest who consolidated the surrounding claims, including the Polaris mine, into the Montgomery-Shoshone Consolidated Mining Company. By the end of 1906, the Montgomery-Shoshone Mine was developed to the 700-foot level. The mine closed in 1911 after yielding more than 130,000 tons of ore at an 0.520 oz./T equivalent gold grade.

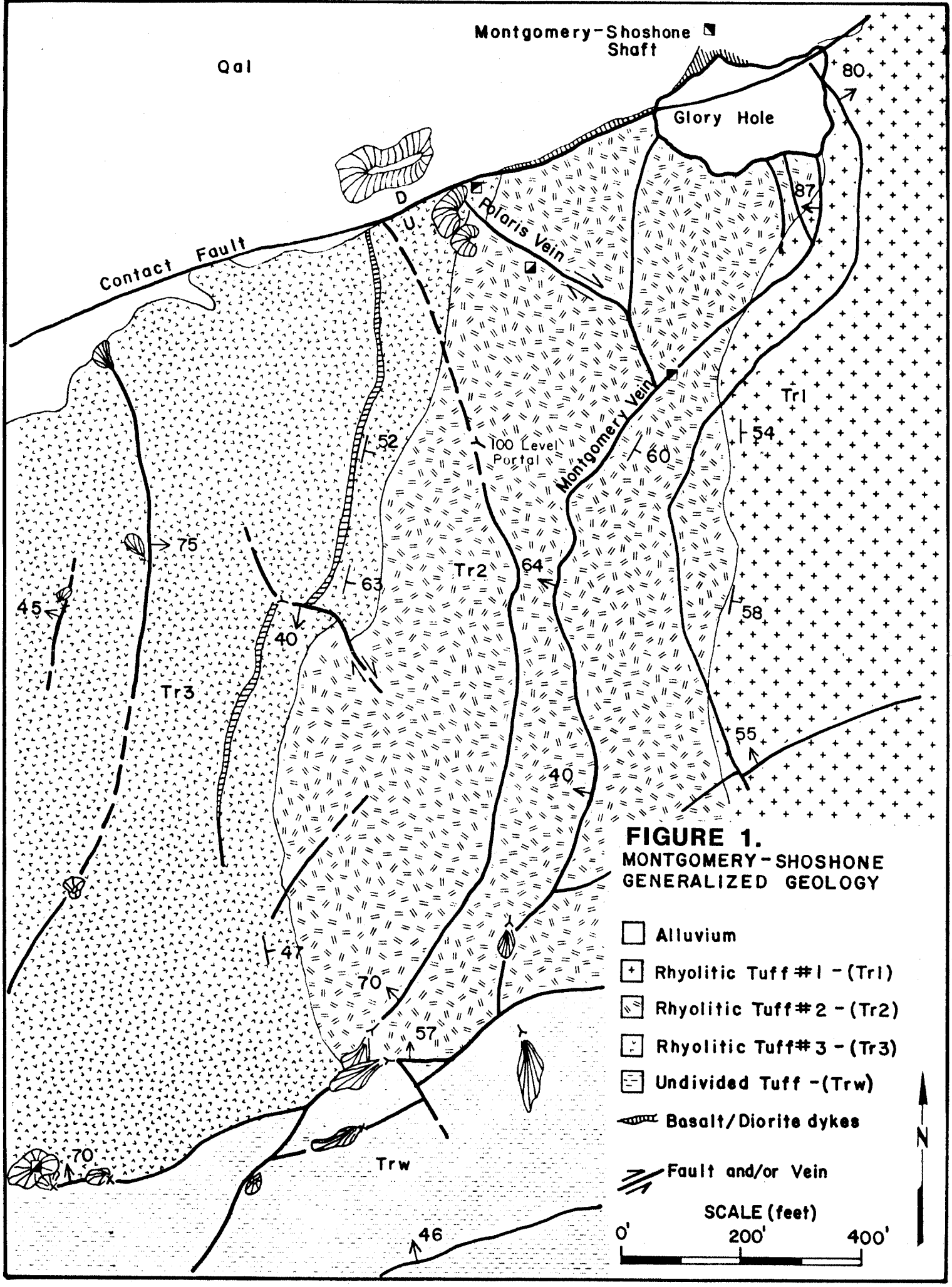
St. Joe American initially examined the Montgomery-Shoshone prospect in May, 1982. Detailed surface and underground mapping and sampling commenced through March 1985. Drilling continued from September 1983 to October 1986. A total of 60 holes were drilled on the property. To date, evaluation of mineral inventory is ongoing.

GEOLOGY

The regional geology of the Bullfrog Mining District is dominated by shallow gently-dipping Tertiary volcanic flows and air-fall tuffs located along the projection of the Las Vegas shear zone and Walker Lane lineament. In the southern part of this district, these volcanics unconformably overlie strongly faulted Paleozoic sediments and Precambrian basement rock.

Locally, the geology of the Montgomery-Shoshone mine area consists of several flows of welded to non-welded rhyolitic crystal, lithic and vitric tuffs of probable Miocene age. These tuffs strike primarily N-S and dip from 67 to 45 degrees to the east.

Three separate flows have been recognized within the mine area and have been designated as Rhyloties #1, #2 and #3 (Figure 1) and roughly correlate to Rhyolites #8, #9 and #10 as described by the U.S.G.S. (Ransome, 1910). These flows were further delineated and separated into thirteen compound cooling units (Figure 2). Detailed


Montgomery-Shoshone Shaft
Qal
Glory Hole
80
87
D
U
Polaris Vein
Contact Fault
52
100 Level Portal
Montgomery Vein
60
Tr1
54
75
63
Tr2
64
45
40
58
Tr3
55
40
47
70
57
70
Trw
46
FIGURE 1.
MONTGOMERY-SHOSHONE
GENERALIZED GEOLOGY
Alluvium
Rhyolitic Tuff #1 - (Tr1)
Rhyolitic Tuff #2 - (Tr2)
Rhyolitic Tuff #3 - (Tr3)
Undivided Tuff - (Trw)
Basalt/Diorite dykes
Fault and/or Vein
N
SCALE (feet)
0'
200'
400'

mapping of these cooling units enabled St. Joe to determine the best host rock for stockwork mineralization in the volcanic pile and to direct their exploration efforts in accordance.

Approximately 1500 feet south of the Montgomery-Shoshone shaft, Rhyolites 1 thru 3 are displaced by a faulted block of rhyolitic welded tuff (undivided) that appears to strike in an E-W direction and dip to the NW. To the north, all N-S flows are cut off by the Contact Fault.

STRUCTURE

The Montgomery-Shoshone area is dominated by discontinuous shear zones and normal faults striking essentially N-S and bounded by E-W striking fault block to the south and the Contact fault to the north. Many of these structures host basalt or diorite dykes and/or vein mineralization.

At the Montgomery-Shoshone Mine, where several N-S faults nearly coalesce before butting against the Contact fault zone, a richly mineralized zone of quartz, calcite and clay has been deposited.

Additional fracturing of wallrock from periodic movement of these closely spaced N-S faults created open space which was subsequently filled by quartz and calcite. These zones of quartz/calcite stockwork veining appear to be confined to Rhyolite #2 and were originally thought to be lithologically controlled. They now appear to be more a function of shear density and proximity to a major fault zone as well as being lithologically selective.

The Contact fault which terminates all N-S structures and acts as a "dam" for mineralizing fluids, strikes essentially N 65 E and dips from 50 to 85 NW. Surface fault exposure is restricted to road cuts and the Montgomery- Shoshone "glory-hole", however several thousand feet of workings were driven on this contact in the Polaris and Montgomery-Shoshone mines. The hanging wall consists of basalt from 10 to 200 feet thick and quartz veining commonly parallels the fault contact in the footwall.

Structures in the E-W striking fault block in the southern map area are also often intruded by basalt, but thicknesses cannot be accurately determined because of poor exposure and lack of underground workings. This block acts as a southern termination point for all N-S faulting.

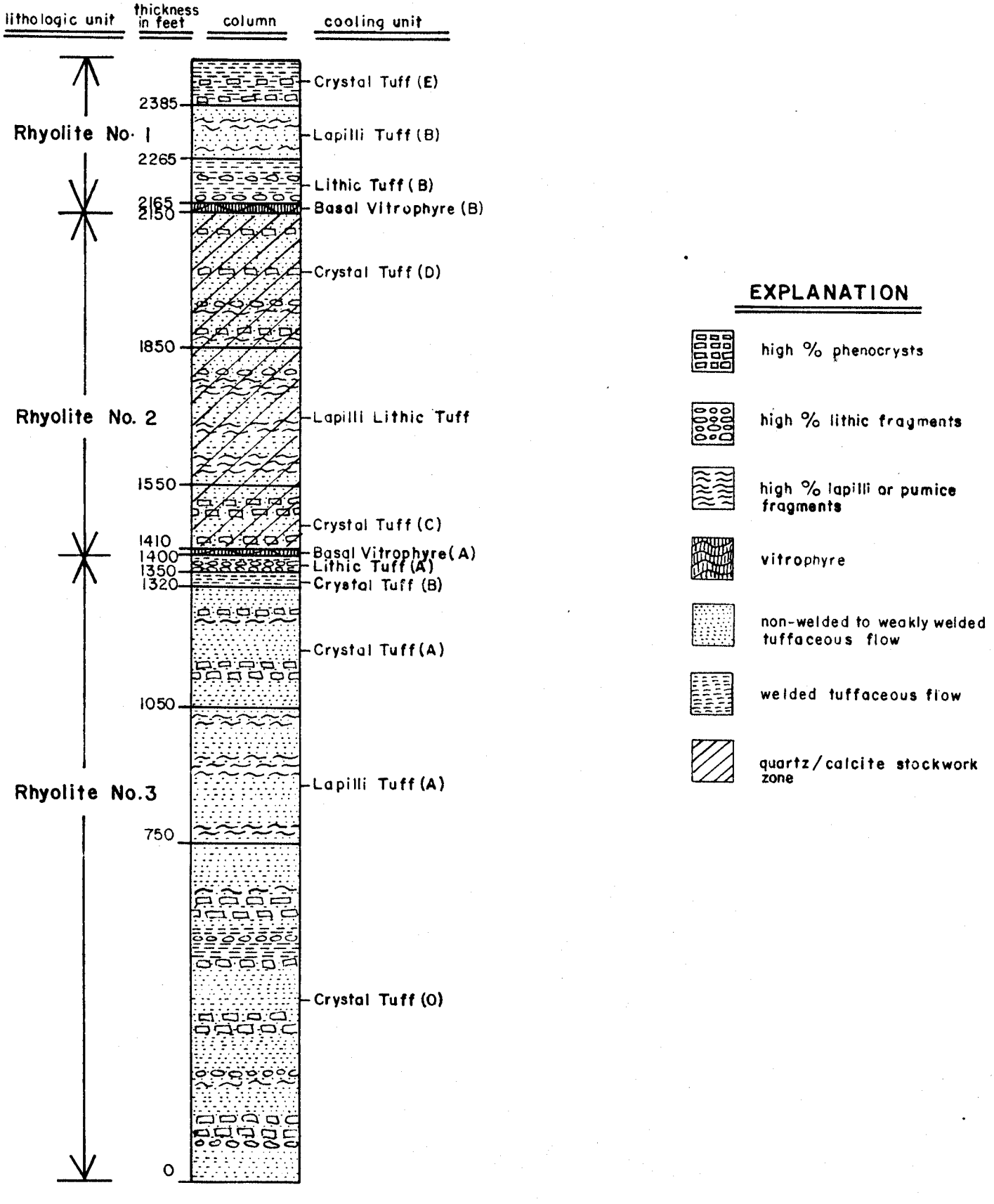


FIGURE 2. Columnar section of Rhyolites No. 1, 2 and 3 in the Montgomery-Shoshone Mine area.

ALTERATION

Alteration of rocks in the Montgomery-Shoshone area is typified by localized strong silicification and/or argillic alteration in strongly sheared areas, but otherwise it is relatively weak in all other outlying areas.

Silicification is the dominant form of alteration, primarily as silica flooding of rhyolitic tuffs creating quartz stockworks and whole rock replacement. Argillic alteration is more localized and is restricted to intense development of clays and alunite along major faults, shears, and veins; to weak and spotty alteration of pumice-rich country rock.

MINERALIZATION

Mineralization in the area is characterized by open and vuggy quartz and quartz-calcite veins of varying thicknesses, quartz veinlets and stockworks, and clay shears all in deeply oxidized rhyolitic tuffs.

The mineralogy of the ore consists of fine-grained hydrothermal quartz and quartz-calcite coating altered rhyolites. In places, quartz appears to replace calcite or fill interstices between calcite laths, although most of the fine calcite was probably co-precipitated with quartz. Quartz and calcite appear to be deposited from hot, very dilute fluids and at least three stages of quartz deposition have been recognized.

From electron microscope and microprobe studies, gold was found to occur both as the native metal and as electrum. Most of the gold and electrum particles observed have been less than 1 micron in size, the largest has been about 10 microns,and appear to be associated with arsenical iron oxides after pyrite. Silver minerals, in addition to electrum, include a variety of Ag-S minerals and silver-bearing oxides. Minor amount of Hg, Se and F are present in the ore and little or no base metal mineralizatioin is associated with the precious metals.

CONCLUSION

The Montgomery-Shoshone property is a low-grade, volcanic hosted gold deposit where micron size gold is disseminated in a quartz/calcite stockwork and in vein structures and fault margins of varying dips and thicknesses. St. Joe is continuing its exploration in the area to refine and expand its mineral inventory.

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