# Economic Geology and Gold Potential, La Dama de Oro Property, Sidewinder Mountain,

Silver Mountain Mining District, San Bernadino County, California



La Dama de Oro Mine (looking northeast)

by

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## **Executive Summary**

The La Dama de Oro Property consists of 16 contiguous, unpatented mining claims located along the southwest flank of Sidewinder Mountain, 15 miles east-northeast of Victorville, California, in the Silver Mountain Mining District. Underground workings at the La Dama de Oro Mine have penetrated the western margin of a 4.5 foot-thick quartz vein lens. The extent of hangingwall alteration above this lens indicates it may be projected a minimum of 400 feet along strike and 1,000 feet down dip. Past production records indicate a minimum average ore grade of 0.50 opt Au. If 50% of the projected lens at the La Dama de Oro Mine is ore grade, a conservative minimum of 36,000 ounces gold contained in 76,000 tons is available.

At least three additional quartz lenses with similar gold potential are projected along the 6,000-foot east-southeast strike of the La Dama de Oro fault-vein system. This premise is supported by the extensional-oblique genesis for this second-order Helendale Fault structure, by known vein occurrences, and by three additional zones of apparent hangingwall hydrothermal alteration. In my opinion, assuming three additional lenses of mineable widths similar to the original La Dama de Oro lens, conservative minimum geologic potential of the La Dama de Oro mine property is 288,000 tons of ore containing 144,000 ounces of gold.

Geologic mapping, grid geochemical sampling, and geophysical surveys should be completed immediately on the La Dama de Oro property. Once results of these recommended surveys are plotted, strike and dip extensions of the La Dama de Oro vein system should be developed by core drilling, initially at 400-foot intervals along strike and to depths of 1,000 feet through altered hangingwall quartz monzonite and latite porphyry. Additional hangingwall veins should be explored. Rock chip, soil, and drill samples of altered and mineralized rock should be assayed for Au and Ag, and also for Cu, Pb, Zn, and Bi to better delineate ore-grade zones.

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## Introduction

### Purpose

The author examined the La Dama de Oro gold property on 5 November 2003 in company with the owner, Reggie Burleson, to give an opinion of economic geology and precious metal potential. Numerous photographs were taken during this visit. Lithologies, structure, alteration, and mineralization were examined on the surface and underground. The geometries, tonnage, and grade of known veins and the potential for undiscovered veins were considered in context of the economic geology, workings, historic production data (Burton, 1980), recent assay values (Pray, 2001; Long, 2003), and are presented herein.

### Property ownership and location

The La Dama de Oro property consists of sixteen (16) unpatented mining claims owned by the Burleson family. Their mailing address is c/o Reggie Burleson, 14356 Primrose Road, Hesperia, California 92345.

The claims are contiguous and are located in Sections 9-11, 14, and 15, Township 6 North, Range 2 West, San Bernadino Meridian, along the southwest flank of Sidewinder Mountain, 15 miles east-northeast of Victorville, California (Figure 1a). The Fairview Valley USGS 7.5' topographic quadrangle includes all of the La Dama de Oro Property (Figure 2a).



Photograph 2 – Reggie Burleson and Cemex Mine

### Access

Two-wheel vehicles may be used to within one-half mile of the La Dama de Oro portal, beginning with eight paved miles from the Stoddard Wells exit off Interstate 15 north of Victorville to the "Heavy Lift" helicopter base on Johnson Road. The next five miles along the dirt road past the Cemex cement plant (Photograph 2) are graded and well maintained. One final mile of non-maintained dirt road brings the visitor to the La Dama

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de Oro mine buildings and portal. The last half-mile may be gained by determined and careful guidance of a two-wheel vehicle in dry weather. Wet weather may develop numerous washouts of the dirt sections.

### History

#### **District history**

Mining in the Silver Mountain District began in 1872 with the discovery of gold and silver ore at Silver Mountain (Bezore and Shumway, 1994, pages 15 and 31) about 10 miles west-northwest of the La Dama de Oro Property (Figure 1). The district was initially named after Silver Mountain, was changed to the Oro Grande District upon the 1881 discovery of the Oro Grande #1 Mine, but the name "Silver Mountain Mining District" has been used interchangeably in some areas since then, including at the La Dama de Oro Property. Discovery of the Oro Grande #1 mine led to the establishment of a post office and a water-operated ten-stamp mill on the nearby Mojave River. Original sources for milling material were the Oro Grande and Oro Fino mines (Figure 1a), followed by mines at Calico (Bezore and Shumway, 1994, page 13).

The Carbonate Mine, discovered in 1890, was the district's most important supplier of ore until 1900 (Bezore and Shumway, 1994). Workings at the Carbonate consisted of at least two shafts on parallel veins (N80°E @ 45°N) to depths of 80 feet and 100 feet (Crossman, 1889, page 234)

The Sidewinder Mine, discovered about 1882, is located on a northwest spur of Sidewinder Mountain (Figure 2a), an area sometimes referred to in the past as the Highland Mountains. Crossman (1890) mentions the "Side Winder" vein crops out for 3,000 feet along strike between a "metamorphic slate" hangingwall and a "syenitic" footwall, and has a reported ore value "between \$25 and \$50" per ton. A ten-stamp mill was erected in Victorville in 1887 to treat the Sidewinder ores, and by 1889, workings consisted of a 100-foot shaft, an 80-foot drift, and open cuts on the surface. Soon after 1889, a crosscut was driven south on the 200-foot level of the Sidewinder Mine, with additional drifts to the northwest and southeast, along with a second shaft. This second shaft is inclined to the south, has 1,000 feet of drifts on the 100-foot level, 1,300 feet of drifts on the 200-foot level (where it connects with the original 200-foot crosscut, more than 400 feet of drifts on the 300-foot level, and 300 feet of drifts on the 400-foot level. Stoping from these drifts connected to the Sidewinder shafts was extensive (Tucker and Sampson, 1930, page 252).

Adjacent to the original Sidewinder Mine, the 200-foot Keyhole Shaft has some 500 feet of drifts and some stoping. Four other shafts are reported near the Keyhole Shaft. The Armstrong Mining Company, in November 1929, employed 16 men sinking a winze below the 510-foot level and a new 700-foot long haulage tunnel. An underground electric hoist powered by a line from Victorville served Armstrong's winze. A cyanide mill was erected in 1928 using water hauled from a well five miles away (Tucker and Sampson, 1930, page 252).

The Sidewinder Mine reportedly produced \$2,000,000 from 1882 through 1941. Last reported production was \$60,000 in gold in 1941.

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Existing large-scale mining in the Silver Mountain District is exclusively for industrial minerals, specifically carbonate rocks and silica for cement and construction materials (Photograph 2).

#### La Dama de Oro Property history

The La Dama de Oro workings were known as the Mojave Girl from 1892 until 1967. Other workings on the property continue to be known as the Mojave Boy and the Tarantula (Photograph 3). Ore taken from these three mines between 1934 and 1941 was trucked to the Burton Mill (Table 1) located near the Tropico Mine (oral communication, R. Burleson, 2003), Mojave District, Kern County, California.

#### - Table 1 -

# Ore shipments from Mojave Boy (La Dama de Oro), Mojave Girl, and Tarantula Mines

Year	Tons	<u>Au oz.</u>	<u>Ag oz.</u>	<u>Au opt</u>	<u>Ag opt</u>
1934	124.58	80.15	153.00	0.64	1.91
1935	65.17	56.66	45.00	0.87	0.79
1936	110.37	111.92	237.00	1.01	2.12
1937	(no produ	uction shipp	ed to Burto	n Mill during	j 1937)
1938	21.80	25.59	44.00	1.17	1.72
1939	167.94	115.41	47.00	0.69	0.41
1940	66.32	71.51	81.78	1.08	1.14
<u>1941</u>	<u>14.53</u>	<u>19.59</u>	<u>16.84</u>	<u>1.35</u>	<u>0.86</u>
Total	570.71	480.83	624.62	0.84	1.30

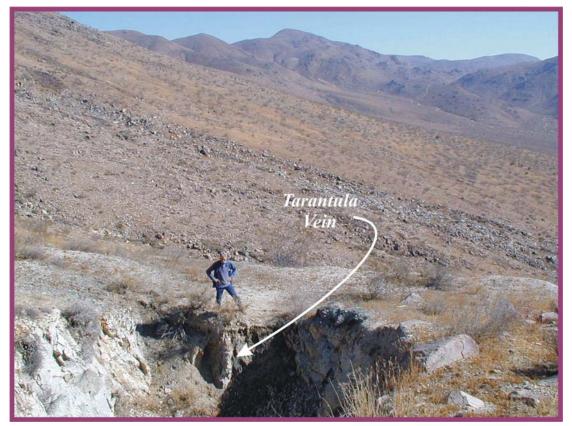
to Burton Mill, 1937 to 1941 (Burton, 1980)

Raymond G. Burleson filed on the La Dama de Oro, formerly the Mojave Girl, in 1967 when the property came open. Proof of labor was performed continually from that time to time of this report. Previous owners developed Stopes #1 through #3. The Burleson family opened up the Ace-In-The-Hole stope between 1967 and 1972, after which Stope #4 was opened up (oral communications, R. Burleson, 2003).



Photograph #3 – Surface workings and mine buildings (looking south)

Prospecting by the Burleson family on the eastern portions of the La Dama de Oro Property included a 40-foot shaft near the western end of claim La Dama de Oro #2 and a 20-foot shaft on claim La Dama de Oro #1 (Figure 2a). These two shallow exploration shafts were sunk in 1972. Later catwork through thin alluvium on La Dama de Oro #2 exposed additional vein material 80 feet northwesterly of the still-visible 40-foot shaft. The 20-foot shaft is not visible at present due to weathering and erosional fill (Burleson, 2003, oral communication).



Photograph #4 – Looking east along strike of the La Dama de Oro vein system

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## **Underground Workings**

Two groups of surface workings are developed along two veins outcropping on and around the La Dama de Oro #3 claim (Photograph #4). The La Dama de Oro Vein is developed from a portal opening at approximately 4,180 feet elevation, a few feet behind the mine buildings (cover photo). The La Dama de Oro workings consist of an eastnortheast crosscut from the portal, and a single east-southeasterly drift beginning 225 feet in from the portal and ending just beyond Stope #4, where there may be a blocked passage to workings further east. Four stopes (#1 through #4) develop the vein upwards to the surface from the accessible portions of the 4,180 level, and one small one (Ace-inthe-Hole) downwards (Figure 6). About 500 tons of waste rock is on the dump in front of the portal.



Photograph #5 - Vein exposed in the back of Stope #4

### Surface exploration

The strike and down-dip projections of the La Dama de Oro Vein have not been mapped or subjected to comprehensive geochemical or geophysical surveys, nor have they been tested by drilling. The Burleson family sank two prospect shafts on vein outcrops along strike to the east-southeast of the La Dama de Oro Mine: a 40-foot shaft and a 20-foot shaft (see "History" above), but no other surface work has been accomplished.

## **Regional Economic Geology**

Regional basement rocks around Victorville consist of metamorphosed sedimentary and volcanic rocks intruded by a Mesozoic granitic batholith. Paleozoic protoliths consist of the Precambrian-Cambrian Wood Canyon Formation, the Cambrian Bonanza King Formation, and the Cambrian Carrara Formation. Paleozoic protoliths may include the Cambrian Johnnie, Nopah, and Stirling Quartzite formations, the Devonian Sultan Limestone, and the Mississippian Monte Cristo Formation. Mesozoic protoliths include the Fairview Valley Conglomerate overlain by a thick section of latite volcanic and shallow intrusive rocks (Miller, 1981).

Primary segments of the San Andreas fault system strike northwest through the region. Secondary faults occur between the sub-parallel, primary northwesterly segments San Andreas fault system. These secondary faults may be either compressive or extensional with horizontal to vertical dip attitudes in a spatial arrangement comparable to the Walker Lane strike-slip fault system as recently described by Oldow et al (2003).

## **District Geology**

The eastern portion of the Silver Mountain Mining District (Figure 1a) falls within the Apple Valley 15' quadrangle mapped by Dibblee (1960), and includes the four-mile square area centered on the La Dama de Oro Property (Figure 2a). The following district geologic summary is drawn primarily from Dibblee's (1960) descriptions. All rocks older than Pleistocene within the district are mapped by Dibblee (1960) as late Precambrian, Paleozoic, or Mesozoic. Regional metamorphism has affected all of these rocks to greater or lesser degrees. This regional metamorphic event may therefore be as young as Tertiary. Regional metamorphic grade is therefore not necessarily an indicator of geologic age in this district.

### Metamorphic stratigraphy, district

Dark grey, medium-grained, banded gneiss composed of quartz-plagioclasebiotite +/- hornblende may be the oldest rock, or it may simply be more highly metamorphosed than the other Paleozoic or Mesozoic rocks in the district. Less metamorphosed meta-sedimentary rocks ("ml" in Figures 2b, 3, and 4b) are tentatively assigned a Carboniferous age based on an uncertain correlation by Bowen (1954). These meta-sediments include recrystallized limestones and dolomites, biotite-quartz schists, and quartzites. The carbonates are massively bedded and finely crystalline, schists are bedded and very fine-grained, and quartzites are massive and fine-grained. Carbonates can be coarsely crystalline schists altered to garnet-epidote-diopside tactites adjacent to some of the Mesozoic intrusives.

The Mesozoic Fairview Valley Formation ("fl"), a series of limestone conglomerate with subordinate amounts of argillite, impure limestone, and dolomite conglomerate, occurs above a post-Permian(?) unconformity. Clasts in the Fairview conglomerates are rounded, are predominantly sediments, but also include minor amounts of andesite porphyry and granitic rocks. Conglomerate bedding is crude. The matrix consists of blue-grey limestone and sometimes dark-brown, silicified dolomite (Dibblee, 1960).

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### Igneous rocks, district

#### Intrusives

Oldest intrusive igneous rocks are quartz diorites, hornblende diorites, and gabbros. Younger Mesozoic quartz monzonite, granite, and biotite quartz monzonites are apparently part of a large batholith underlying much of the district. These granitic rocks intrude the older Mesozoic diorites and gabbros and the Precambrian, Paleozoic, and early Mesozoic meta-sedimentary rocks.

Diorites and gabbros are black, medium to coarse, and "inequigranular", composed of 80% hornblende, 15% diopside and olivine, and about 5% labradorite plagioclase. The quartz diorite is dark grey, massive, medium grained and composed of plagioclase, quartz, hornblende, biotite, and orthoclase in decreasing abundances.

The biotite quartz monzonite and the granite are gradational into quartz monzonite, and are therefore labeled "qm" in Figures 2 through 5. Biotite quartz monzonite is consistently medium to coarse. Granite and quartz monzonites are texturally variable, and appear to be in part the plutonic facies of the Mesozoic latite extrusives (Dibblee, 1960).

#### Extrusives

Mesozoic extrusives in the district are grouped by Dibblee (1960) under "latite porphyry", and are designated by "lp" in Figures 2 through 5. This large and heterogenous group of volcanics and meta-volcanics consists of "massive to locally schistose porphyritic" latite and andesite with subordinate dacite and quartz latite. Mapped as Triassic(?) by Bowen (1954), the latite porphyry unit (lp) -is predominantly a massive, shallow, intrusive/extrusive, occasionally spherulitic, and with subordinate subvolcanic porphyry breccia, coarse volcanic flow-breccia, and occasional bodies of meta-tuff and meta-andesite porphyry (Dibblee, 1960). The latite porphyry unit (lp) is also known as the Sidewinder Volcanic Series (Bezore and Shumway, 1994).

#### Structure, district

The northwest-striking Helendale Fault, a primary San Andreas segment, passes through the center of the district and bifurcates 1.8 miles southwest of the La Dama de Oro Property (Figure 1b). Numerous parallel secondary, or second-order, faults associated with the San Andreas system strike north-south and east-west. Third-order faults are also mapped by Dibblee (1960), for example on the western flanks of Fairview Mountain four miles southwest of La Dama de Oro and on Sidewinder Mountain, including the Sidewinder and La Dama de Oro faults (Figure 2b). Many of these thirdorder faults are extensional and have localized productive quartz veins.

#### Vein mineralization, district

Areas with productive veins in the Silver Mountain Mining District include Quartzite Mountain, Black Mountain, Silver Mountain, Turtle Mountain, North Black Mountain, the Sidewinder Mine area, and Stoddard Mountain (Bezore and Shumway, 1994, page 31 to 33). Veins in the Quartzite Mountain and Black Mountain areas were developed along faults in meta-sedimentary rocks or between meta-sedimentary and granitic rocks, but proved to be fairly shallow mines.

Veins in at Silver Mountain, Turtle Mountain, North Black Mountain, Sidewinder Mine, and Stoddard Mountain are hosted by in the Sidewinder Volcanic Series and adjacent meta-intrusives. Some shoots mined from these meta-volcanic rocks were known to carry ore-grade values to greater depths than those associated with the meta-sedimentary rocks. An excellent example is the 1,500-foot shaft at the Oro Grande #1 mine, where ores were known to run better than \$88/ton prior to 1941 (Bezore and Shumway, 1994, page A12).

The "largest underground gold mine" in the district was the Sidewinder Mine, opened in 1880 and ordered closed in 1942. Workings were on a vein-fault between the Sidewinder Volcanic Series ("lp" in Figure 2b) and the quartz monzonite intrusive series ("qm"). Deepest known shaft was 508 feet, as described by Bowen (1954), but several were collapsed and apparently inaccessible at that time (Bezore and Shumway, 1994, page A14).

The "Side Winder" vein crops out for 3,000 feet along strike. Ore was reported "between \$25 and \$50" per ton (Crossman, 1890, page 226). In 1929, Tucker and Sampson (1930, page 252) described the Sidewinder vein as 2.5 feet of iron-stained quartz and 2.5 feet pyritic talcose schist with estimated values at \$7 per ton based on previous operations. This latter, rather low, estimate did not account for the nearly continuous, 52-year operation of the Sidewinder Mine. The actual, long-term grade of Sidewinder production were likely somewhere between the 1890 estimate and the 1929 estimate.

## Economic Geology, La Dama de Oro Property

### Lithologies, property

The Mesozoic meta-latite porphyry (Sidewinder Mine Volcanic Series) forms the footwall of the La Dama de Oro vein-fault and the entire slope of the mountain for about 550 vertical feet behind and north of the mine portal (see cover photo and Figure 4b). Quartz monzonite is the hangingwall. Dibblee (1960) mapped a small amount of altered meta-latite in the very updip extremity of the hangingwall block with all downdip hangingwall outcrop below as quartz monzonite (Figure 5).

### Structure, property

The La Dama de Oro vein-fault structure is intermittently traceable for 6,000 feet along strike to the east-southeast (Figure 2b). Bezore and Shumway (1994, page A11) describe this vein system as striking N70°W and dipping 50° South. Jessey (2002) maps variabilities in the strike from N50°W at the west end of the workings to N90°W with a 45° South dip at the east end of the workings. Local vein dips vary appreciably in the workings. Projections to the east-southeast of a shallow-dipping La Dama de Oro Vein coincide with the vein workings described by Bezore and Shumway (1994, page A11) as located on the Fairview Valley USGS 7.5' topographic map. The applicable portion of this USGS topographic map is the base for Figure 2b.

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## Alteration, property

Hydrothermal alteration associated with the La Dama de Oro Vein has been described by Jessey and Beltzer (2002) as an inner envelope of chlorite and clay with some adularia (Figure 6). This inner alteration envelope is up to 10 feet wide and is mapped everywhere the vein is present underground. Disseminated chlorite-sericite with some quartz veinlets forms an outer, hangingwall alteration halo around the vein. Jessey and Beltzer (2002) map this outer halo up to 150' horizontally into the hangingwall quartz monzonite. This author observed occasional chlorite-sericite-quartz veinlet hangingwall alteration on the surface up to 750' horizontal from the vein (Figure 5).

Outcrop weathering patterns in the hangingwall quartz monzonite suggest this hangingwall alteration is slightly more resistant than unaltered quartz monzonite. Color air photos with one-meter resolution seem to support this observation. Similar outcrop patterns are apparent along the east-southeast projection of the La Dama de Oro vein system (Figure 2b).

### Mineralization, property

In outcrop and in the shallow workings, the La Dama de Oro Vein appears to be mesothermal, consisting of coarsely crystalline quartz with abundant limonite clots and fracture coatings. Coarse subhedra of limonite after pyrite were occasionally observed in the workings. Copper oxides are present, but rare. Vugs and banding in vein exposures are also rare (Photograph 5). Ore removed from the Ace-In-The-Hole substope was reportedly high in copper oxides (Burleson, 2003).

Long (2003) describes the La Dama de Oro Vein as "...a classic...multistage...mesothermal quartz-base metal-gold vein..." thickening at fracture intersections "with varying widths of hangingwall and footwall alteration", ...greater vertical extent (and)...more regular in its (gold) mineralization...than an epithermal vein". The quartz vein itself consists of "sheeted mesothermal quartz, which is white to clear, has iron oxide and manganese oxide, is red-brown-yellow-black, has oxidized pyrite cubes, visible galena".

The La Dama de Oro Vein also appears to thicken where vein attitude changes (Figure 6). The increase in thickness from 18 inches at the west end of the workings (strike N50°W) to 4.5 feet at the east end (strike N90°W) supports this premise.

### Geochemistry, property

Raymond Burleson submitted five samples for fire assay to W.R. Jones (Silverton, CO) in 1987. These samples are taken from La Dama de Oro, but exact locations are not noted on the assay sheet. Assay results ranged from 0.037 opt Au to 1.199 opt Au with a maximum silver value of 2.71 opt Ag (Jones, 1987). Average gold value was 0.492 opt Au. Highest silver values occurred with the highest gold values.

Raymond Burleson submitted a second group of seven samples for fire assay to Union Assay Office, Inc. (Salt Lake City, UT) in 1990. These were surface samples from the vicinity of the La Dama de Oro Mine, on La Dama de Oro Claim #3 (Figure 2a). Assay results ranged from trace Au to 2.560 opt Au with a maximum silver value of 7.2

opt Ag (Union Assay, 1990). Average gold value was 0.774 opt Au. Highest silver values also occurred with the highest gold values in this second group of samples.

The third set of geochemical results made available to this author stems from a March, 2003 property visit by a geologic consultant from Placer Dome Exploration, Inc. (Long, 2003). Three samples were taken: two underground and one at the surface. Assays were conducted for 36 elements, including Au and Ag. Long's (2003) #23786 sample from Number 4 stope registered the highest values at 4.31 ppm Au, 65.9 ppm Ag, 538 ppm Cu, and 1,845 ppm Pb. The two other samples, including one from the Ace-in-the-Hole stope, ran slightly more than one ppm Au. Long (2003) says that his results "are not useful for assessing value of the vein, these are too few samples for a gold vein, and the samples were meant....only to determine its general character".

No other geochemistry is available for the La Dama de Oro Property (R. Burleson, 2003, oral communication).

## Discussion

The geology of the La Dama de Oro Vein is very similar to several other formerly productive veins in the Silver Mountain District, including the Oro Grande #1 and the Sidewinder mines. Vein widths in these two former producers apparently averaged less than five feet, but good gold grades seems to have carried them during their productive periods.

The La Dama de Oro Vein is widest (4.5 feet) at the east end of the existing drift, and remains open to exploration and development in that direction. Hangingwall alteration above the vein suggests the La Dama de Oro lens may extend at least another 400 feet along strike and 1,000 feet down dip. The best values recovered by the Burleson family were reportedly from the shallow Ace-in-the-Hole stope below the vein outcrop. Dip and strike extensions away from the Ace-in-the-Hole stope are completely untested. Although the potential grade of the La Dama de Oro Vein is definitely open for discussion, the Jones (1987) and Union (1990) results obtained by Ray Burleson seem to indicate economic portions of the vein could grade between 0.50 opt Au and 0.75 opt Au. Higher grade historical production from the geologically similar and nearby Sidewinder Vein (Figures 2b and 5) provide added impetus to developing the La Dama de Oro Vein.

Topography and hangingwall alteration suggest at least three additional lenses similar to the La Dama de Oro lens occur along the 6,000-foot, east-southeast strike projection of the La Dama de Oro vein system (Figure 2b). This projected strike remains untested by drilling.

## Conclusions

The present La Dama de Oro workings have penetrated the western margin of a 4.5 foot-thick lens that could measure 400 feet along strike and 1,000 feet down dip. If 50% of this postulated lens grades a conservative 0.50 opt Au, there are approximately 72,000 tons available containing 36,000 ounces gold. The hangingwall alteration visible on the surface is a positive indicator for this postulated mineralization.

At least three additional quartz lenses with similar gold potential are indicated along the 6,000-foot east-southeast strike of the La Dama de Oro fault-vein system. This premise is supported by the extensional-oblique genesis for the Helendale Fault structure, by known vein occurrences, and by three additional quartz lenses indicated by hangingwall hydrothermal alteration. In my opinion, assuming three additional lenses of mineable widths similar to the original La Dama de Oro lens, conservative minimum geologic potential of the La Dama de Oro mine property is 288,000 tons of ore containing 144,000 ounces of gold.

## **Recommendations**

Geologic mapping, grid geochemical sampling, and geophysical surveys are the next recommended steps for development of the La Dama de Oro property. Once structural attitudes and geologic details are documented, the strike and dip extensions of the La Dama de Oro vein system should be thoroughly tested by core drilling, initially at 400-foot intervals along strike and to depths of 1,000 feet through altered hangingwall quartz monzonite. Rock chip, soil, and drill samples of altered and mineralized rock should be assayed for Au, Ag, Te, and other elements to better delineate ore-grade zones and add value.

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## **Certificate of author**

- I, Donald G. Strachan, residing at 952 Qadosh Road, P.O. Box 2940, Gardnerville, Nevada 89410, USA, do hereby certify that:
- 1. I am a Consulting Geologist.
- 2. I am a graduate of the New Mexico Institute of Mining and Technology, having received a Masters of Science in Geology in 1976. I also graduated in 1973 from California State University, Fresno with a Bachelors of Arts in Geology.
- 3. I am a Certified Professional Geologist (CPG-10376) under the auspices of the American Institute of Professional Geologists. I am also a Fellow of the Geologic Association of Canada, a Member of the Society of Economic Geologists, and a Member of the Geological Society of Nevada.
- 4. I fulfill the requirements of a Qualified Person by reason of experience and education to give an opinion as a geologist for further understanding of the La Dama de Oro gold project.
- 5. This report has been prepared in accordance with generally accepted mining industry practice, is a statement of material facts and opinion, and may be used by Mohave Gold Mining and Exploration Inc. (MGMEI) and its advisors in support of their evaluation of the La Dama de Oro Property.
- 6. As of the date of this certificate, I am not aware of any changes in fact or circumstances as regards the subject matter of this report that materially affects the content of the report or the conclusions reached. I reviewed essential information related to the La Dama de Oro Property in November and December of 2003, and January 2004, and inspected the geology of the La Dama de Oro Property on 5 November, 2003.
- 7. I have no interest, direct or indirect, nor do I expect to receive any interest, direct or indirect, in the property or its owners as described in this report, or in MGMEI or any of its associates or affiliates.
- 8. I consent to and authorize the use of the attached report and my name to a statement of material facts and my opinion.

E-mail: dgstrachan@nanosecond.com

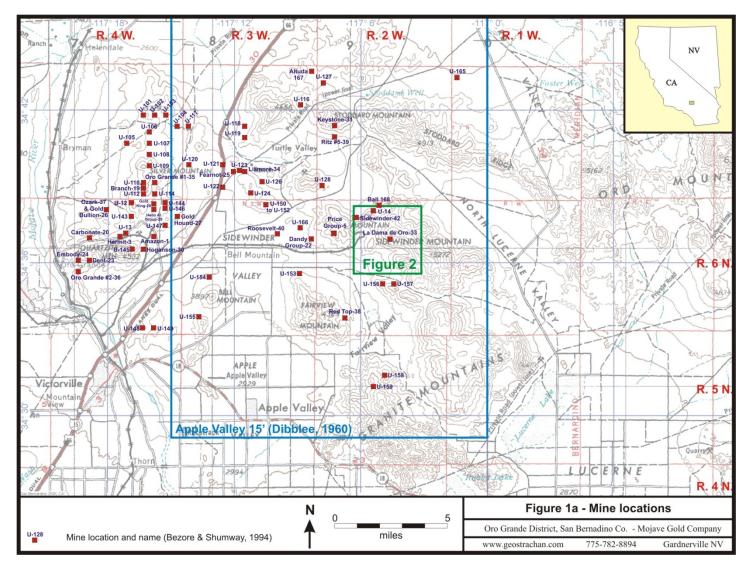
Website: <u>www.geostrachan.com</u>

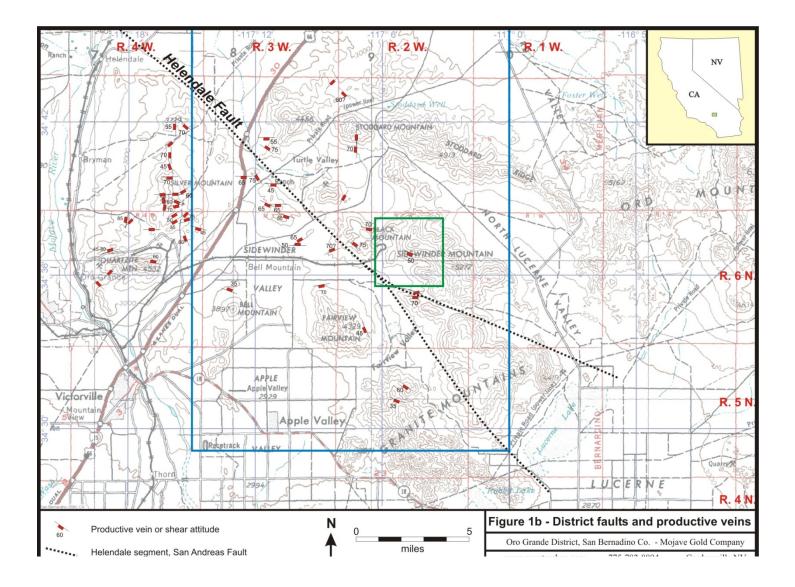
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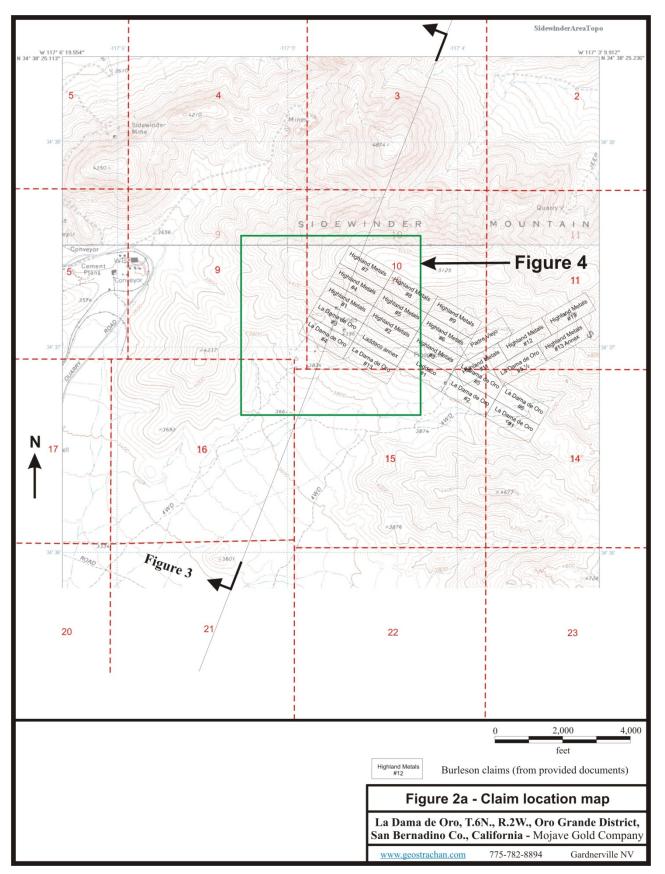


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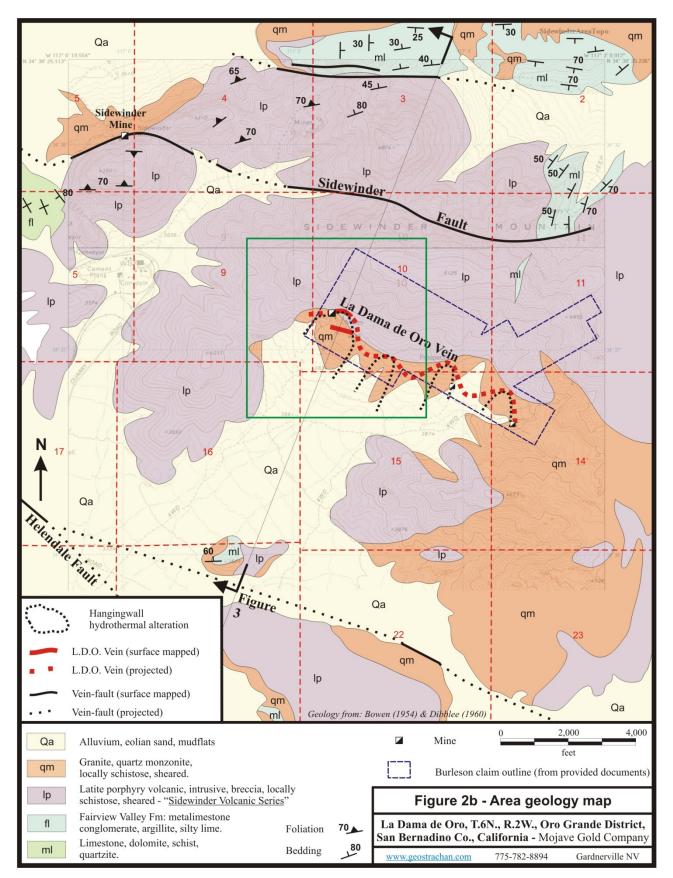
# Appendix



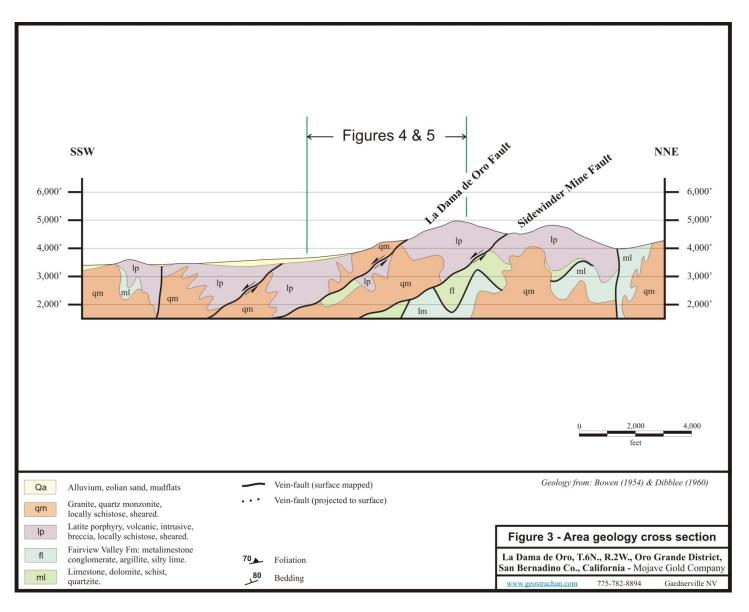


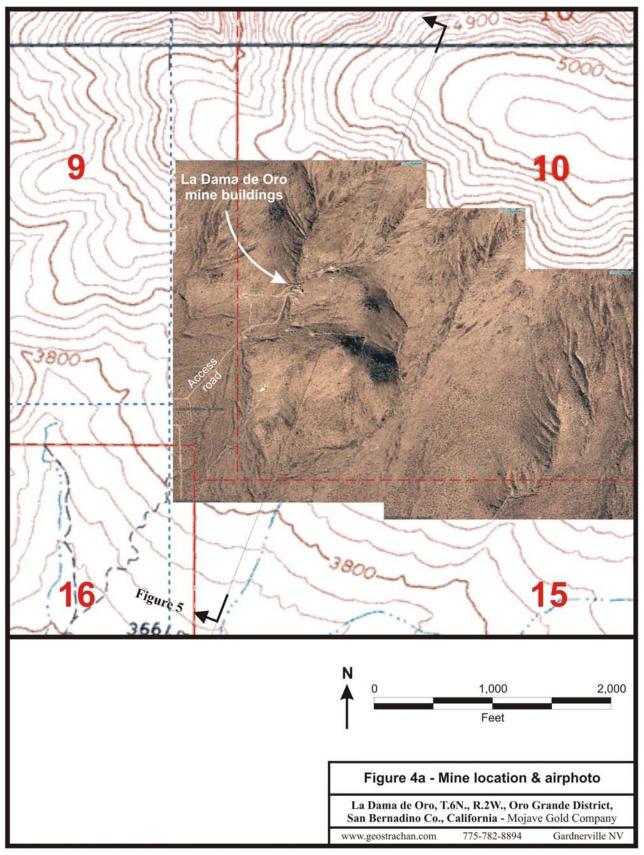


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