PROSPECT MOUNTAIN PROJECT

EUREKA MINING DISTRICT

EUREKA COUNTY

NEVADA

TABLE OF CONTENTS

ATTACHMENTS

PREFACE

The following report is based on the writers personal experience in the Nevada gold fields and on the scrutiny of an exhaustive wealth of data from geological - mining - and production records on the subject property.

No property visit was undertaken as the mine workings and surface exposures were inaccessible due to snow cover at the time of writing and the ample documentation of pertinent data permitted a qualifying evaluation.

The assistance of Mssrs. Einar C. Erickson and Steve Ransom and M. Dickemore of North American Exploration Inc. is gratefully acknowledged.

EUROPEAN AMERICAN RESOURCES, INC. commissioned the writer to undertake this work for the purpose of producing a "Qualifying Report", which is herewith respectfully submitted.

SUMMARY

The Eureka Mining District contains numerous historic and recent gold/silver mines. Since its discovery in 1864, over two million tons of high grade precious metal ore were produced. Approximately thirty percent of this total come from the mines in the Prospect Mountain Project area alone.

Most of this production had been achieved before 1906 and was mined from massive replacement deposits as well as veins, manto- and pipe-like bodies.

The principal ore host is carbonate rock, mainly dolomite and limestones of Cambrian and Ordovician age.

At the Prospect Mountain Project mineralized bodies occur over a vertical range of 1,300 feet (394 m) within an area measuring at least 8,000 feet (2.4 km) long by 2,800 feet (0.85 km) wide.

While it is difficult to ascribe a total ore potential to the project area, it is a fair estimate that less than ten percent of all the possible ore has been mined. This leaves a realistic expectation that several tens of millions of ore containing well in excess of one million ounces gold and a multiple of this in silver remain in the ground to be explored and developed.

One has to be mindful of the fact that the Eureka Mining District is part of a gold mining province which is rapidly approaching a volume of gold production comparable to the goldfields in the Witwatersrand of South Africa.

In the first exploration pass, several "fences" of closely spaced rotary air blast holes should be drilled to test for gold and silver mineralisation that is amenable to low cost open pit mining (Tagebau) and recovery by heap leaching (Haldenlugung).

INTRODUCTION

Location and Access

The Prospect Mountain Project is located in the Eureka Mining District, Eureka County, Central East Nevada (Fig 1) Range 53 East, Township 19 North, Sections 27, 28, 33, 34 and Township 18 North, Sections 2, 3, 4, 10 (Fig 1)

Access is by State Highways 55 and 278 to Eureka and hence by allweather paved and gravel road about 5 miles (8 km) to the Diamond Mine Tunnel (Fig 1, 2, Foto East Slope).

Physiography And Climate

The area is hilly to mountainous with the valley floor at 6,800 feet (2121 m), the Silver Connor Tunnel at 7,200 feet (2182 M) and the highest peak at 9571 feet (2900 m).

The region is part of the Basin and Range physiographic province in Nevada (Fig. 2) with dry, hot summers and dry, cold, winters with below freezing temperatures for most of the time. Spring and Fall are short and pleasant. As for all of Nevada, there is high a incidence of sunny days throughout the year.

The vegetation is semi-desert with sparse grass and sage brush in the valleys and dispersed low-growth conifers at higher elevations.

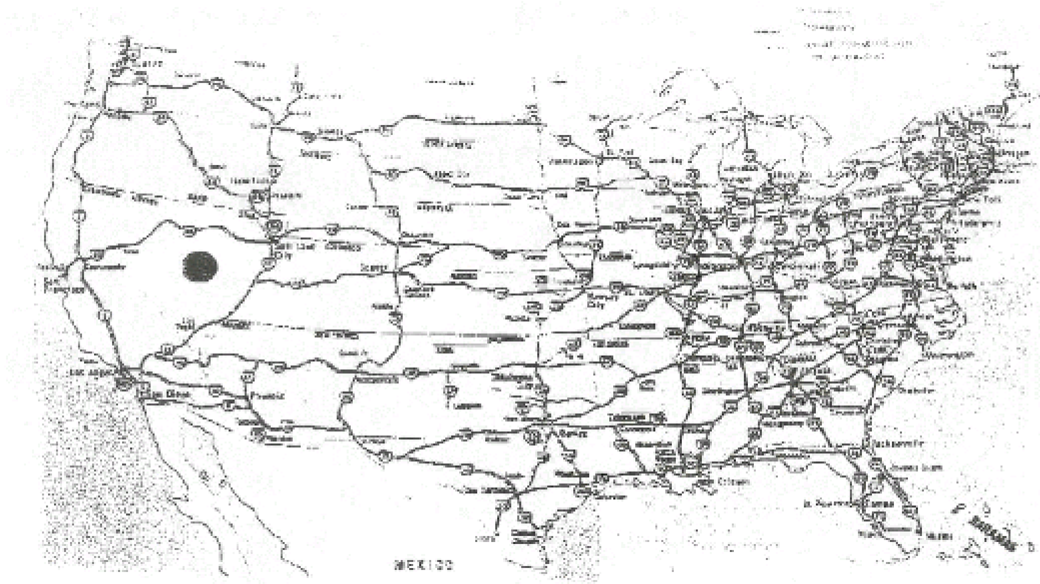
Infrastructure

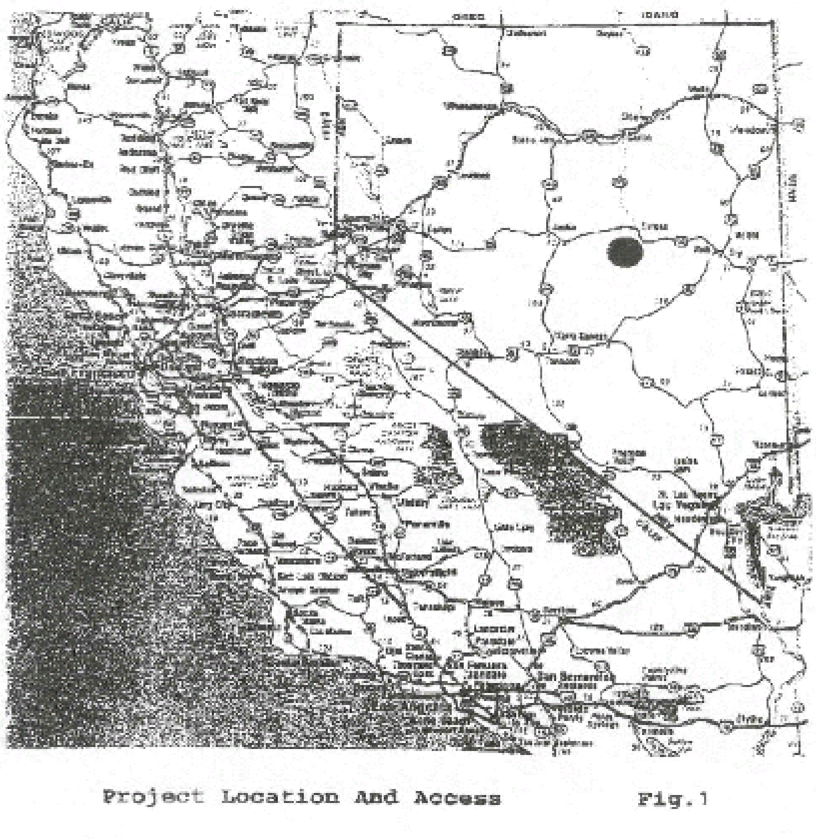
An excellent network of highways and roads connects the property (Fig. 1.2)

The towns of Elko (85 miles/137 km north) and Ely (77 miles/125 km west) are serviced by commercial, scheduled aircraft and railroads. Both towns are major supply and service centers.

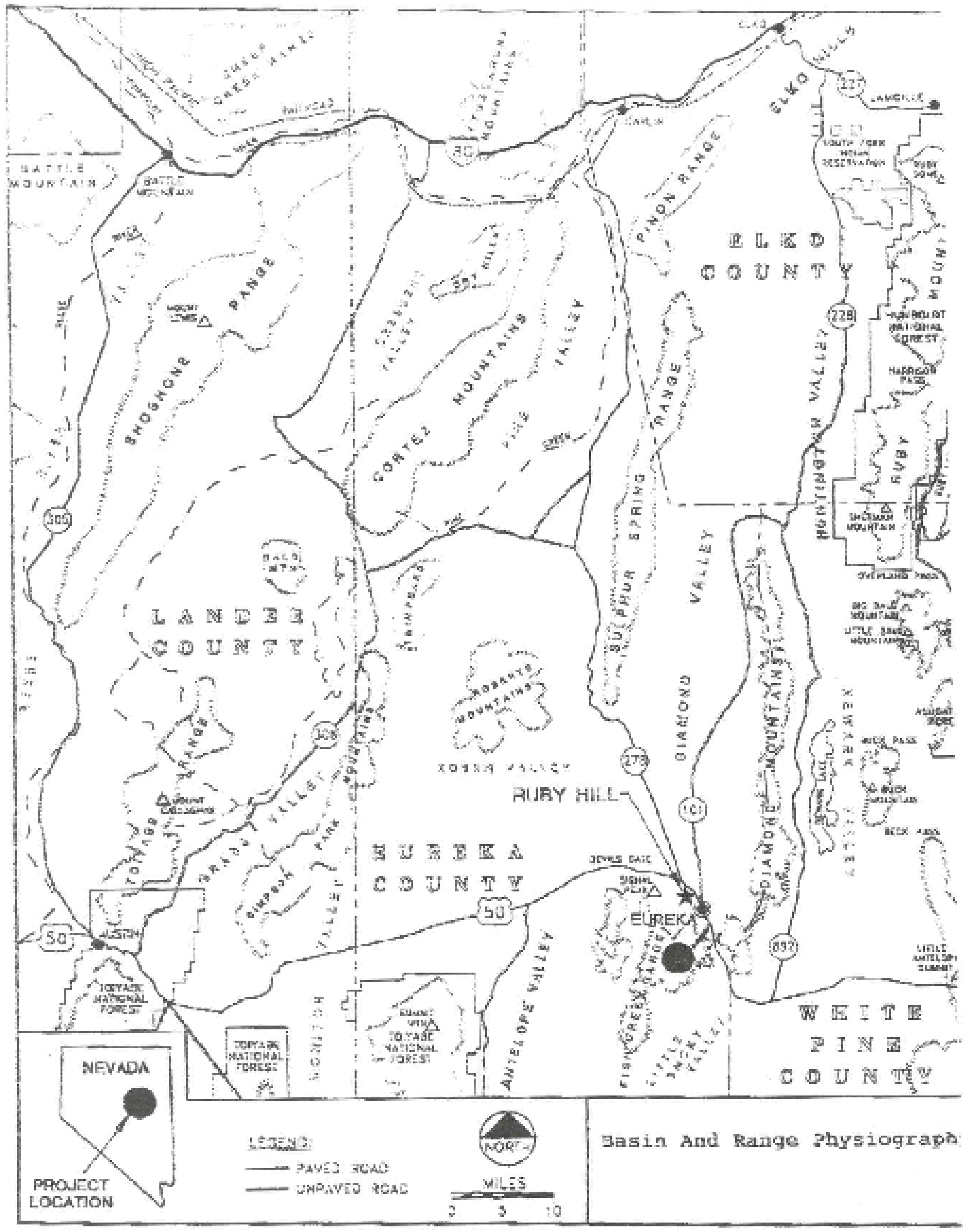
The small town of Eureka offers adequate accommodations - food, fuel supply and medical services.

Electric power and telephone connects to the regional grid. Water supply for the exploration phase is sufficient. Large volume for industrial use has to be developed by drilling from existing aquifers.





Project Location And Access Fig.1



ELKO COUNTY
LANDER COUNTY
EUREKA COUNTY
WHITE PINE COUNTY
BATTLE MOUNTAIN
ELKO HILLS
PINON RANGE
SHOSHONE RANGE
CORTEZ MOUNTAINS
PINE VALLEY
SULPHUR SPRING RANGE
DIAMOND VALLEY
DIAMOND MOUNTAINS
HUNTINGTON VALLEY
ROBERTS MOUNTAINS
KOBEH VALLEY
GRASS VALLEY
SIMPSON PARK
ANTELOPE VALLEY
RUBY HILL
EUREKA
AUSTIN
TOIYABE NATIONAL FOREST
80
228
305
278
50
892
NEVADA
PROJECT LOCATION
LEGEND:
PAVED ROAD
UNPAVED ROAD
NORTH
MILES
Basin And Range Physiograph

Fig.2

Mining and Exploration History

1864 - Discovery of mineralized outcrops on the east slope of what later came to be called Prospect Ridge on Prospect Mountain.
1868 - 1930 Mine production by inter al. Eureka Mining Company from Silver Connor/Wabash and Diamond Mine.
1930 - 1953 Sporadic, minor mining activity.
1953 - Revival of mining and exploration by underground development through Government Funding (Defense Minerals Exploration Administration).
1981 - Silver Viking Corporation, Silver International, Inc. and Gol-Sil-Inc. consolidate the mines on Prospect Mountain conducting limited underground work.
1988 - EPAR leases the property from Silver Viking/Silver Intl. And Gol-Sil, with option to buy.
1992 - 1993 EPAR re-organizes into Merlin Mining Company.
1997 - EPAR, now European American Resources Inc. exercises the option to purchase the property and plans extensive exploration programme.

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

During the entire period, production mining and underground development was the only method of exploration applied. Virtually no exploration by drilling from surface was ever done.

Mining concentrated on the removal of high grade ores only. Gold production before 1902 is difficult to determine because of the practice in the early days of combining production of all metals and reporting it in dollar values. It can be state, however, that a minimum of 1 million ounces of gold was mined from the Eureka district alone up to 1883. From 1884 to 1959 gold production is estimated at 1,230,000 ounces with the bulk coming from the Ruby Hill and Prospect Mountain area (Fig 5).

GEOLOGY

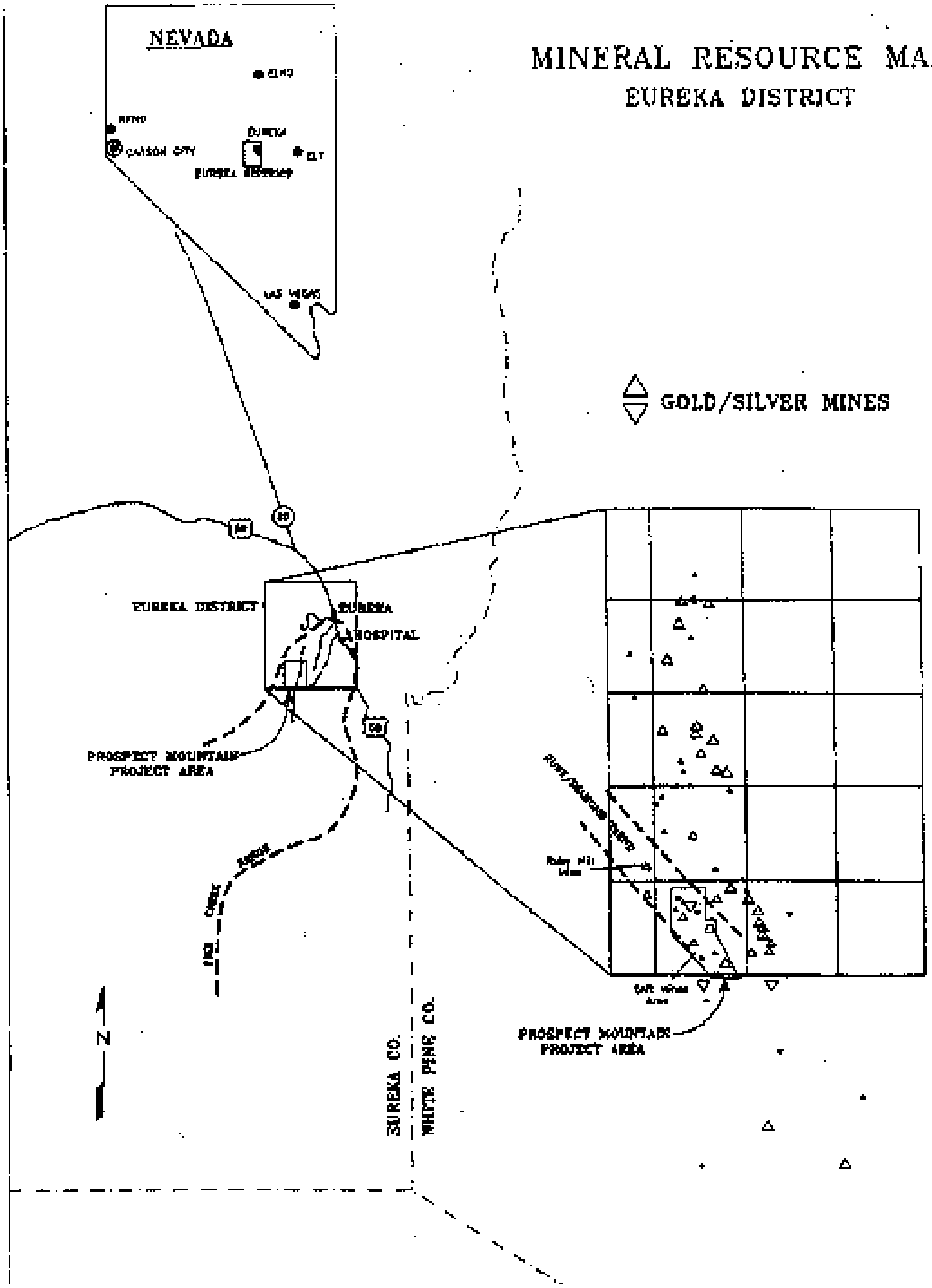
Parts of two of the main linear ranges of the Great Basin occupy the region of the Eureka district. They are the Fish Creek range and the Sulphur Spring Range to the North and Diamond Range to the east. All lie to the east of the major structural feature of central Nevada, the Roberts Mountains Thrust. This thrust, formed in late Devonian times, overrode by tens of miles of eastern rock units which are dissimilar from the overthrusting rocks. The rocks east of the thrust have been deformed and cut by thrust faults. The resulting "thrust plates" have been folded into a series of north-trending synforms and antiforms and involve rocks of Carboniferous and Permian age. In the northern part of the Fish Creek Range four antiforms and four syniforms have been recognized. The rocks in the Prospect Ridge antiform are predominantly of Ordovician age. The largest part of the uppermost Ordovician, the Hanson Creek Formation on the southwest flank of Prospect Peak is thoroughly brecciated (Nolan et al).

Prospect Mountain itself is made up of carbonates and minor interbedded quarzites and siltstones which in descending order reach from the late Ordovician Upper Hanson Formation to the lowermost Cambrian Prospect Mountain quartzite (Plate - 1).

A large intrusive plug of diorite and minor sill-like bodies and dikes of quartz porphyry and rhyolite of Cretaceous and Tertiary age invaded the Palaeozoic rock suite. Some mineralisation and alteration types may be ascribed to this igneous activity.

The enormously prolific gold mineralisation in central and east Nevada is explained by these thrust tectonics and "plate" formation, which have been then principle formative and localizing factors for the gold deposits.

MINERAL RESOURCE MAP
EUREKA DISTRICT



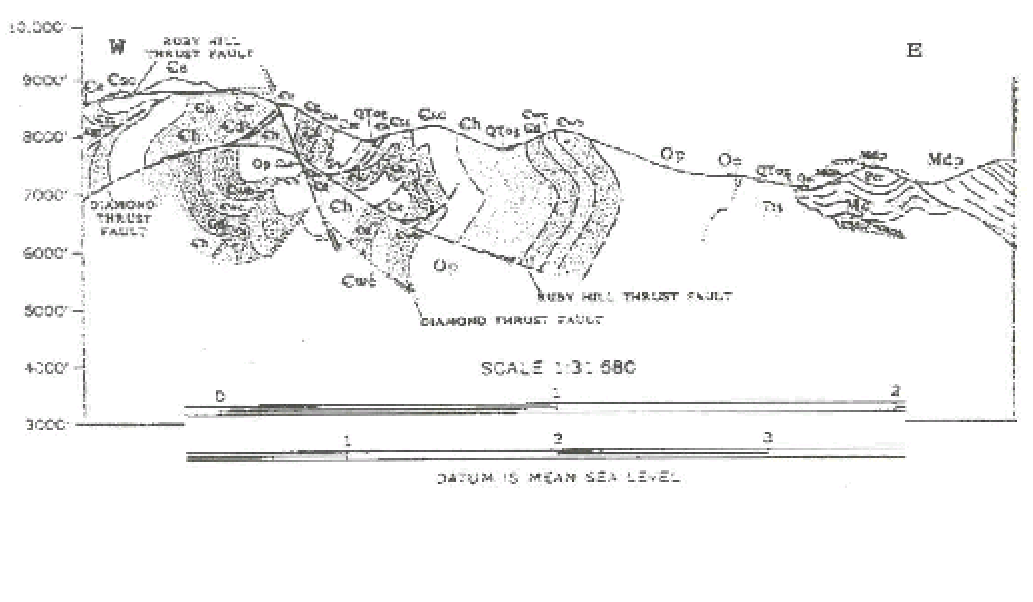
Mine Area Geology And Mineralogy.

Prospect Mountain in the project area comprises a suite of steeply dipping - predominately dolomites and limestones with minor intercalations of clastic rocks ie quartzites and siltstones. They range in age from early Cambrian to late Ordovician (Plate - 1). Intrusive, igneous rocks are not exposed in the area but can be expected to exist at depth.

Structurally, Propect Mountain is part of an antiform with all beds displaying a generally north-south strike with steep westerly dip. The project area was never geologically mapped in any detail. Underground mapping is sporadic and uncomplete. The structural complexity is reflected in Nolan's east-west cross-section looking north (below), which traverses just south of the Diamond Mine Tunnel.

Being in the tectonic influence area of the Roberts Mountains thrust, the entire rock suite is intensely folded, faulted and fractured. The predominant lithostratigraphic units developed in the mine area are the Middle-to Upper Cambrian dolomites and limestones with the 1,000 feet (330m) thick Hamburg Dolomites as the dominating member and chief ore host (EW-Cross Section Map -1).

Prospect Mountain Antiform - EW Cross-Section
Diamond Mine Tunnel Area



Previous mining concentrated on extraordinarily rich "ore shoots"; therefore the miners conventional wisdom dictated to search for and mine only these particular ores. All other types and grade of mineralisation were disregarded and therefore not recorded. Technologically speaking, the axiom "yesterday's waste is todays ore" also holds true in the context of the mineral potential for Prospect Mountain.

In the past, the following types and forms of ore bodies have been described from the Eureka district:

1. Irregular replacement deposits
2. Bedded replacement deposits
3. Fault-zone replacement deposits
4. Disseminated deposits
5. Contact-metasomatic deposits

However, the geometry and configuration of ore shoots mined as it shows in mine plans of the Silver Connor mine (Plate 2) suggest, that other types of deposits may also exist, requiring a change in the entire exploration and mine development approach.

The "disseminated" mineralisation, for instance, has now gained importance and may yet prove the main economic target for the entire project. Too low in grade in the past, through the development of open pit/heap leach technology, this type of mineralisation has become the favorite in gold exploration. In fact, the largest proportion of todays gold mines, especially in Nevada, are in this category. A point in case is Homestake's nearby Ruby Hill project (Fig -2). With 750,000 ounces recoverable gold in reserves, this project is an indication for the potential for the area.

With regard to the ore mineralogy of the Prospect Mountain gold deposits, it is recorded that apart from the gold recovered, the principal minerals were lead and silver, the latter presumably in form of specific silver minerals, but most likely, for the major part, reporting to the lead mineral(s).

A host of secondary oxides and hydroxides, derived from primary sulphides is also reported, yet the gold occurs as free gold, sometimes together with, but not occluded, in the arsenopyrite. In the disseminated deposits, gold is reported to occur as the only metallic mineral besides iron-oxides. This latter feature is especially important as discussed later.

AGE		TIME (MyA)	NAME	THICKNESS (feet)	LITHOLOGIC CHARACTER
CENOZOIC	Quaternary		Alluvium	0–500±	Stream and slope alluvium, terrace gravels, and mine and smelter dumps
			Unconformity		
	Late Tertiary or Quaternary		Pyroxene andesite and basalt	700+	Lava flows; a few dikes and small plugs.
			Intrusive contact and unconformity		
	Oligocene or Miocene		Rhyolite tuff	400±	White, layered tuff.
			Rhyolite	100± of flows exp.	Chiefly intrusive plug, dikes, and breccia pipes; vitrophyre sill; and local lava flows.
	Eocene	65	Hornblende andesite	300± of flows exp.	Dike and lava flows.
MESOZOIC	Late Cretaceous		Quartz porphyry	--------	Sills and dikes
			Quartz diorite	--------	Intrusive plug south of Ruby Hill.
			Intrusive contact		
	Early Cretaceous	225	Newark Canyon Formation	200±	Fresh-water conglomerate, sandstone grit, shale, and limestone
			Unconformity		
	Permian		Carbon Ridge Formation	1,000±	Thin-bedded sandy and silty limestone; some included sandstone and dark shale.
			Unconformity-Ely Limestone absent		
	Late Mississippian		Diamond Peak Formation	0–300	Conglomerate, limestone, and sandstone.
			Chainman Shale	500± exp.	Black shale with thin interbedded sandstone
			Break in section		
	Middle and Late Devonian		Devils Gate Limestone	500± exposed	Thick-bedded limestone, locally dolomitized.
			Break in section-Nevada, Lone Mountain, and Roberts Mountains Formations not recognized in mapped area		
PALEOZOIC	Late Ordovician		Hanson Creek Formation	300± exp.	Dark-gray to black dolomite.
			Unconformity?		
	Middle to Late (?) Ordovician		Eureka Quartzite	300±	Thick-bedded vitreous quartzite.
			Unconformity		
	Early and Middle Ordovician		Pogonip Group	1,600–1,830	Chiefly cherty thick-bedded limestone at top and bottom; thinner bedded shaly limestone in middle.
Project Mountain Area Lithostratigraphies	Late Cambrian		Windfall Formation: Bullwhacker Member	400	Thin-bedded sandy limestone.
			Windfall Formation: Catlin Member	250	Interbedded massive limestone, some cherty, and thin sandy limestone.
			Dunderberg Shale	265	Fissle brown shale with interbedded thin nodular limestone.
	Middle and Late Cambrian		Hamburg Dolomite	1,000	Massively bedded dolomite; some limestone at base.
	Middle Cambrian		Secret Canyon Shale: Clarks Spring Member	425–450	Thin-bedded platy and silty limestone with yellow or red argillaceous parting
			Secret Canyon Shale: Lower Shale Member	200–225	Fissle shale at surface; green siltstone underground.
			Geddes Limestone	330	Dark-blue to black limestone; beds 3–12 in. thick; some black chert.
			Eldorado Dolomite	2,500±	Massive gray to dark dolomite, some limestone at or near base.
	Early Cambrian		Pioche Shale	400–500	Micaceous khaki-colored shale, some interbedded sandstone and limestone
		570	Prospect Mountain Quartzite (base not exposed)	1,700+	Fractured gray quartzite weathering pink or brown; a few thin interbeds of shale

European American Resources Inc.

(SOURCE: NOLAN 1962)

PLATE - 1

STRATIGRAPHIC COLUMN
EUREKA MINING DISTRICT

Alteration type and patterns are difficult to establish as there is little reference in the sources studied. It appears that the most widespread alteration is supergene oxidation which extends from surface to the deepest levels of mine workings, well over 1,300 feet (349 m). The supergene oxidation most likely overprints the primary alteration and was therefore not very recognizable to most workers who concentrated on the reddish staining by iron-oxides and iron-hydroxides as a lead to sulphides and hence to gold. The widespread and pervasive oxide staining that is visible in the attached foto panels of the Prospect Mountain area on both sides of the ridge, underscores the potentially extensive mineralisation.

A ratio of gold to silver could not be established as silver content varies too widely from mine to mine and stope to stope. It appears, however, that silver, with the exception in "disseminated deposits" almost always exceeds gold content by more than 20 times if associated with base metals. It is noteworthy that the nearby Homestake-Ruby Hill operation relies entirely on the carbon adsorption method for gold recover, which indicated a low gold:silver ratio in their ore.

As for the formation of the gold deposits, there is too varied a mode of gold mineralisation in the district to simplistically categorize it as hydrothermal - epigenetic and invoke an unobserved, deep-seated intrusive. Mineralisation in a cabonate dominated geological environment has never been a simple process. Recent research on similarily hosted mineralisation has shown that a multitude of processes at different times, from penecontemporaneous to the depostition of the host rocks, to almost recent, supergene processes, are responsible for ore formation. Emplacement of mineralisation is as much a consequence of structural and fabric preparation as of geochemically reactive components of the host rocks.

For all practical purposes only empirically established and extrapolatable aspects of ore localization shall here be applied to attach a value to the property as it exists and to design an exploration programme to locate additional, and in all likelihood, significantly greater resources.

Economic Geology.

As already pointed out, the gold in the Prospect Mountain Project area occurs in several different geological modes. Judging by its spatial distribution, a primary structural preparation together with synsedimentary porous facies development in the host carbonate rock, which is also chemically very reactive, would provide the most obvious plumbing system for invading and circulating mineralizing fluids.

Because of their relative high solubility in a chemically conductive environment, carbonates are predisposed to form solution cavities, usually in a system of communicating caves and tubes, a phenomenon known as karsting (Plate 2).

Whether the mineralizing, aurifous solutions originated in a magmatic source or contain remobilized gold and reconcentrated it; whether the solutions that created the karst are of supergene or hypogene, or even of mixed origin, is academic at this point.

The fact remains that over horizontal dimensions of 8,000 ft (2.4 km) by 2,080 ft (0.85 km) and a vertical distance of at least 1,300 ft (0.39 km) a series of interconnected mines testify to the potential volume of mineralized rock (Map 1, Plate 2).

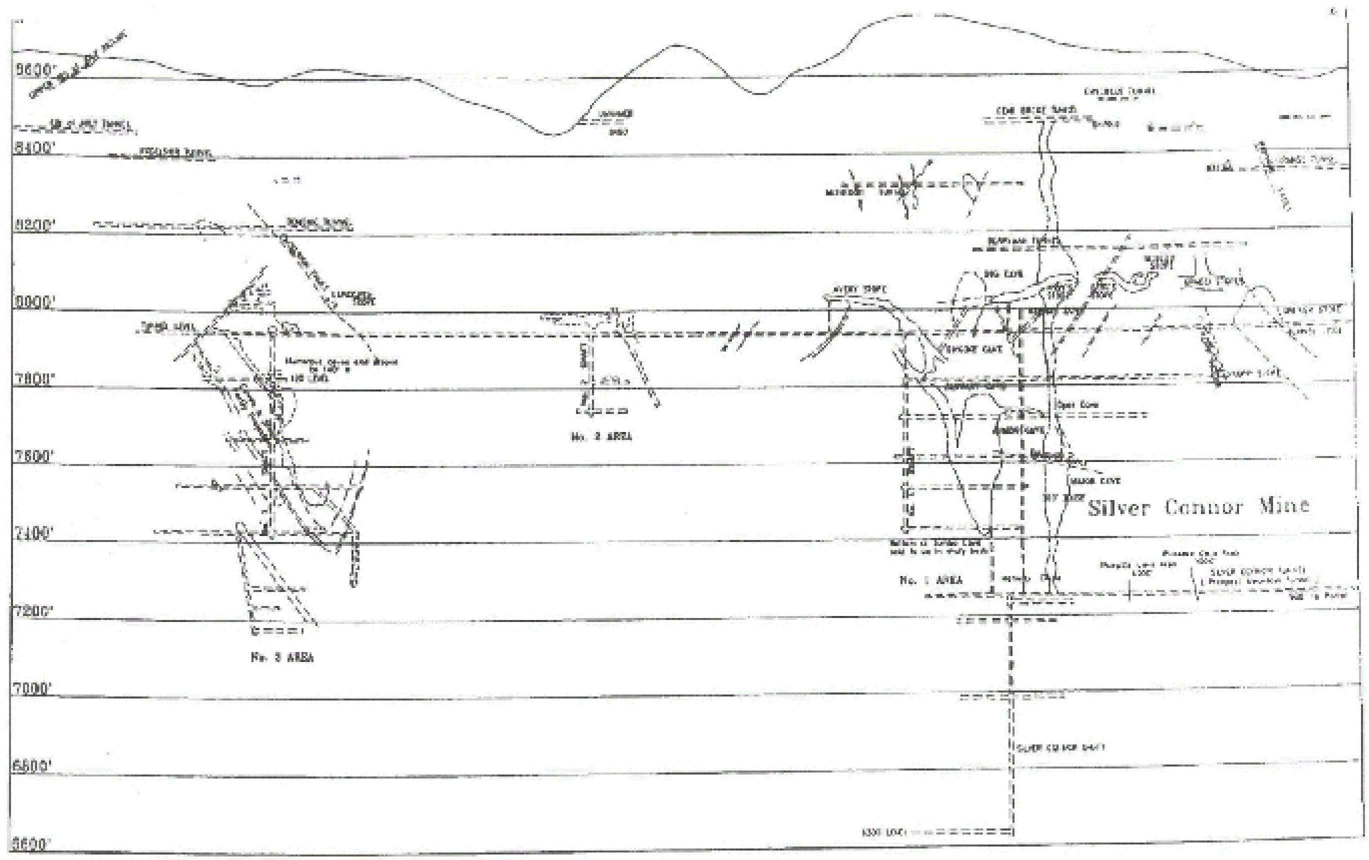
By current industry standards regarding the economics of disseminated gold mineralisation, gold contents in the range from as low as 0.03 to 0.09 ounces per ton, given favourable mineralogy, are of interest for heap leach recovery.

At this point at the Prospect Mountain project a large proportion of rock enveloping the high grade ore shoots and intervening rock volumes between the individual mine workings by be mineralized and therefore must be targeted for exploration (Map 1, Plate 2).

Considering the haphazard underground exploration in the past and serendipitous success in finding high grade ore shoots, the ratio of explored to unexplored ground in the project area is in the order of 1:5. This would be in keeping with the estimates of precious workers (Nolan et al)., that the total past production of the Eureka District amounts to about 20% of its potential.

To arrive at a concept of ore grades to be expected at Prospect Mountain, documentation on production from county assessors records, smelter receipts, ore car assays and underground sampling were examined. It showed that ore shipped from mines on Prospect Mountain in the period from 1875 to 1883 averaged 1.58 ounces/ton gold and 38.73 ounces/ton silver. Ore shipments from the Diamond mine in the period of 1873 to 1939 for 85,000 tons averaged 0.751 opt.gold and 39.70 opt.silver. Sampling of faces in E Cave returned 0.19 opt. Gold and 3.90 opt .silver.

Fourth of July workings samples returned 0.45 opt.gold and 21 opt.silver and 0.20 opt.gold and 22./0 opt.silver respectively. Ore car assays from the Diamond mine in 1981 assayed an average of 0.509 opt.gold and more than 110 opt.silver for 36 cars.



N

PROSPECT MOUNTAIN PROJECT
COMPOSITE X–SECTION A–B

0 400'

Plate - 2

The gradual decline of grade form 1.5 opt.gold and about 30.0 opt.silver to 0.75 opt.gold and 20.0 opt.silver during the period 1870 to 1907 and further to 30.0 opt.gold and about 5.0 opt.silver by the early eighties, is a historical gradient in keeping with the evolution of more sophisticated mining and extractive metallurgy technology. With todays low cost bulk mining/heap leach technology, gold grades in the range of 0.03 to 0.09 are making profitable mines. The undoubtedly still existing high grade blocks of ore serve as welcome "sweeteners".

On this premise, grade blocks are tentatively defined, which should serve as targets for the initial exploratory phase.

Conclusions and Recommendations

At first glance, the Prospect Mountain property is largely unexplored and definitely underdrilled considering the extensive indications of economic gold mineralisation.

While it is surprising that an area of the size and potential of more than one million ounce gold production should still be available and unexplored in one of the most prolific gold belts in the world, it can probably only be explained by the fact that it has a history of silver and base metal production with gold credits. It is possible that the bulk minin/heap leas aspect has been overlooked until recently. On the basis of existing data and geological setting, the Prospect Mountain is an advanced exploration project with a high level of probability for the development of major gold deposits.

Because of the lower water levels, the entire mining area is apparently dry to the deepest level developed. This will allow low cost pneumatic rotary drilling technology to be applied to explore for and delineate mineralisation.

The developed four miles of underground workings can readily be mapped and sampled to reach a better understanding for ore controls and grade distribution.

There appear to exist significant volumes of partially developed ore of sufficient grade to extract by underground mining. In the alternative, on proving lower grade ore blocks enveloping the higher grade, these blocks can be extracted concurrently with open pit mining.

It is recommended that:

- An initial drilling programme consisting of seven fences of rotary air blast (RAB) holes be drilled, using a track mounted rig to test for bulk mineable gold mineralisation.

- The permitting processes for drill road and site construction is initiated before operations commence.

- Concurrent sampling of all accessible underground workings be carried our to better define gold grade distribution.

Dr. Bernard Free
Denver, February 1997