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REPORT

On The

FLORIDA MINE, MONACO AND LOST HEEL CLAIMS

Lida Mining District,

Esmeralda County, Nevada, U.S.A.

By

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SUMMARY AND CONCLUSIONS

The Florida and Monaco properties, comprising four patented and ten unpatented contiguous mining claims, straddle Lida Canyon at an average elevation of about 6,000 feet, approximately 22 miles southwest of Goldfield, in the Lida mining district, Esmeralda County, Nevada, U.S.A. The Lost Heel claim is about three quarters of a mile southwest of the Florida mine.

The claims are readily accessible and are traversed by paved State Highway No. 3 and the Valley Electric Association's power line. Abundant water is available at shallow depths from Lida Canyon.

From its discovery in 1871, until about 1910, the Florida deposit was intermittently explored and developed by many trenches, cuts, pits and, at least two shafts, three tunnels and a considerable amount of underground workings most of which were backfilled or have subsequently caved. No maps of the mine area or underground workings are currently available. In 1907 the mine was serviced by a three compartment shaft and the ore removed was treated in a 5-stamp mill.

The oxide zone is very shallow - probably not more than 50 feet deep. In those pre-flotation days, this resulted in a limited production of oxide ores from the upper levels of the mine and the leaving of much clearly visible sulphide ore.

Mining probably ceased, therefore, not due to a lack of ore but rather due to a lack of ore that was amenable to treatment at that time.

In 1973 and 1974, a Reno based company, after receiving considerable assay encouragement from preliminary sampling, made several abortive attempts to open up the mine. Lack of capable management and a shortage of funds, resulted in premature abandonment of the project.

Recently, the two lower tunnels were opened up, a preliminary geologic map of the mine area was prepared and an extensive sampling of all available areas within the mine was completed. Samples from two dumps of stockpiled muck removed from the mineralized sections of the Main and Middle tunnels, consisting of caved material from the backs as well as backfill, yielded weighted assay averages of 11.17 and 2.28 ounces of silver per ton, respectively.

The Florida, and other mines on adjacent properties to the west, are located in the foothills of the eastern tip of Magruder Mountain near the nose of a major oroflex. The mines occur in a breccia zone developed along a major east-west, high-angle fault which traverses folded precambrian limestones and shales striking northeast and dipping southeast.

These formations are intruded by small dikes of granite and diorite.

The surface trace of a major mineralized thrust fault. dipping about 45° or less to the south, crosses the claims some 900 feet north of, and parallel to, the high-angle fault. The upper plate, containing the mines, has been thrust over younger formations.

East of the Florida Mine, the fault breccia zone disappears under the gravels of Lida Canyon. Lida Canyon marks the locus of a fault along the apex of an anticlinal fold. This fault may be the eastward continuation of the fault breccia zone. About a mile east of the mine, the anticlinal fault is obliquely intersected by three parallel, northerly dipping, highly mineralized faults, which strike $N60^{\circ}W$. and are spaced about 300 feet apart.

Geophysical methods may be usefully employed to trace the eastward continuation of the fault breccia zone with the view of locating any cross-faulting and to explore and pinpoint the intersections of the three parallel faults and the apex fault.

In the Florida mine area, ore bodies of good grade exist in the steeply dipping fault breccia zone which, in places, is about 30 feet in width. The Ore, consisting of argentiferous galena, argentite, and azurite, and a great deal of pyrite, occurs in quartz and calcite veins and as fracture fillings and impregnations or replacements of the breccia fragments. It is concentrated in, but not limited to, fractures and openings created in the fault breccia zone by tensional drag of a

left-lateral cross-fault. In every known instance of a cross-fault offsetting the fault breccia zone, ore has been formed. Detailed geologic mapping and exploration of the area immediately east and north of the known ore bodies in the Florida mine will almost certainly reveal the existence of more cross-faulting and offsetting of the fault breccia zone with the attendant creation of further favorable loci for the emplacement of additional ore bodies.

As mentioned above, in the neighboring mines to the west, ore exists in the same fault breccia zone under identical structural conditions. However, in those mines, it occurs in beds some 700 feet lower in the stratigraphic sequence than the ore-bearing strata in the Florida mine. Since all these formations dip towards the Florida, these ore horizons will occur at depth on the Florida property. The plane of intersection of the fault breccia zone and these horizons should provide further favorable locations for the emplacement of additional ore bodies.

In any event, the joint mining and treating of the known ore remaining in the adjacent mines to the west would add substantially to the size and profitability of any operation contemplated on the Florida property.

At the time of the formation of the major oroflex, the sediments were intruded by granite and folded into a broad anticline. Continuing regional pressures caused by the

gradual intrusion of plutons associated with the Sierra Nevada Batholith resulted in local tilting and rupturing of the sediments with the formation of the fault breccia zone, cross-faulting, and finally the thrusting of the block containing the mines over the adjacent plate of younger sediments. The hot, siliceous, mineral-bearing solutions ascending the thrust fault were diverted into the fault breccia zone where they deposited their minerals. The openings and fractures created in the fault breccia zone by the tensional drag of the cross-faults were ideal repositories.

At depth in the Florida mine, the mineralized thrust fault should intersect the fault breccia zone at something less than 900 feet. The plane of intersection of these two faults should be a very favorable location for the development of substantial ore bodies, particularly, where such intersection is coincident with that of one of the cross-faults.

The extensive sampling of the underground workings indicates that over 50,000 tons of immediately mineable ore with a weighted average of \$96.57 per ton are fortuitously located in the mine above the Lower Tunnel level. By converting the Lower Tunnel into a temporary haulageway, the ore may be expeditiously mined by shrink stoping methods employing selective mining techniques insofar as possible.

Metallurgical testing indicates that the ore is readily

amenable to concentration by tabling and flotation and that a recovery of about 90% can be expected,

Markets for the concentrates abound; however, equipment for the reduction of the concentrates to bullion is available at the property.

Utilizing a locally available mill, a highly profitable 25 ton per day interim operation can be initiated almost immediately. Based on an 80% recovery and gold and silver at \$130.00 and \$4.50 per ounce respectively, a preliminary financial forecast indicates that such an operation, if not expanded, would:

- (a) generate a total cash flow before taxes of almost \$2,000,000 in a little over 7 years; and
- (b) enable the property to be paid out and the total investment to be returned in approximately 13 months; and
- (c) produce a net profit of almost \$1,250,000.

The "Probable" and "Possible" Ore estimates ranging from 99,500 to 278,600 tons, respectively, if proved, would require a plant with a capacity of 100 tons per day at an estimated cost of \$1,000,000. Using the same parameters as employed in the preceding calculations, such an operation would, respectively:

- (a) generate before taxes cash flows of \$3,730,000 and \$15,525,000 in 3.3 and 9.3 years; and
- (b) payout the property in 82 days and return the total investment in 1 and 1½ years; and

(c) produce total net profits of \$3,341,000 and \$7,835,000.

Since some of the profits generated from such an operation can be advantageously employed taxwise to pay the costs of proving up and exploring the several existing, very attractive possibilities for the discovery of further substantial ore reserves, it must be concluded that the exploration and development of this property should be proceeded with immediately in accordance with the recommendations cited hereunder.

RECOMMENDATIONS

Regarding The Further Exploration For Ore

1. The detailed geological and structural mapping and study of the mine area, particularly to the north and east, should be completed immediately. Valuable assistance in this matter could be rendered by:
 - (a) mucking out the western ends of the backfilled forks of the Upper Tunnel in order to gain additional information in this interesting area; and
 - (b) the judicious use of a bulldozer to clear the rubble, insofar as it would be safe and practical, from the steeply sloping eastern nose of the hill above and to the east and north of the mine workings. in order to expose the surface and, hopefully, the location of the fault breccia zone and its offsets and continuations to the east.

2. The Lower Tunnel should be extended at least 350 feet for the purpose of:
 - (a) exploring the intervening area; and
 - (b) supplying a haulageway for the ore existing in the Main, Upper and Middle Tunnels; and
 - (c) providing potential underground drill sites to explore the downward extensions of the ore zones.
3. A series of rotary drill holes, 50 feet apart, should be drilled along the strike of the breccia zone to the west and east of the Main Tunnel in order to sample and determine the downward and lateral extent of the ore existing in the Main Tunnel - Drill Hole 2 area on the foot wall side of the cross-fault. Fill-in drilling to be done as required.
 - (a) At least one of these holes should be drilled to a depth sufficient to test the intersection of the projection of the ore horizons from the mines adjacent to the west and the intersection of the thrust fault with the fault breccia zone;
 - (b) To the west of the Main Tunnel and starting by re-drilling Hole 2 which bottomed in ore, a maximum of 6 holes would be required to reach the property boundary; however, the number of holes and the depth of each would be dependent on the results obtained from the immediately preceding hole;

- (c) East of the Main Tunnel on strike with the fault breccia zone, the first hole should be drilled 50 feet east of the surface trace of the cross-fault in the Main Tunnel. Because of the increasing amount of dead-drilling required to reach the fault breccia zone in the footwall of the cross-fault and the increasing depths of the hill-wash gravels to be penetrated, the number and depths of these holes should be guided by the results obtained from each preceding hole. A maximum of 5 holes should be drilled at this stage.
- (d) Upon completion of the detailed geologic mapping, further exploratory drilling should be done, both underground and where possible to establish drill sites along the projected offset eastward extensions of the fault breccia zone. (Estimate 5 additional holes.) For instance, the ore showing in the southeast corner of Room 1 in the Middle Tunnel is probably in the foot-wall of the cross-fault. With a small amount of timbering in the Middle Tunnel, Room 1 would provide an excellent underground drill site.
4. A detailed Induced Potential Survey should be carried eastward from the mine area to cover the length of the Monaco claims in order to trace the probable continuation of the fault breccia zone down the valley. The objective

of this survey would be to pinpoint drilling targets such as any cross-faulting and particularly the intersections on the Monaco claims of the three highly mineralized parallel faults and the fault running down the middle of Lida Canyon.

5. On the Lost Heel Claim, the fault breccia zone should be explored by re-opening the eastern end of the presumed tunnel to provide access to the deposit. If the tunnel does not exist, the new drift will provide access for sampling purposes.


Regarding the installation of a plant.

6. Upon completion of the projects cited above, a decision would be possible as to the size of the ultimate plant required to establish a viable operation commensurate with the results obtained. In the interim, the locally available 25 ton per day mill should be purchased and installed in order to create an immediate cash flow.

ESTIMATED COST OF RECOMMENDED PROGRAM

1.	To complete geologic study and mapping of mine area, including mucking out back-filled forks of western end of Upper Tunnel and bulldozing ... 1WK CAT, 2WKS. MAPPING	\$ 1,500.00 5,000
2.	To drive Lower Tunnel 350 feet @ \$40.00 per/ft. 200:	14,000.00 70,000
	Timbering 100 feet @ \$30.00 per/ft. 100	3,000.00 10,000
3.	To rotary drill 16 holes at \$6.00 per/ft	
	900' West of Main Tunnel 6 holes to average depth of 150'	5,400.00
	1100 East of Main Tunnel 5 holes to average depth of 220'	6,600.00
	900 1 hole to 900'	5,400.00
	Exploratory drilling:	
	500 5 holes to average depth of 100'	3,000.00
	Assaying	2,500.00
4.	Induced potential survey	3,000.00
5.	To open tunnel Lost Heel claim and sample +ASSAY	1,000.00 5,000
6.	To purchase and install:	
	25 ton per day mill	5,000.00
	12' X 8' recovery table	3,000.00
	Auxiliary equipment	4,000.00
7.	Engineering and supervision	2,500.00 7,500
8.	Contingency 25%	5,100.00 33,800
	TOTAL	\$65,000.00
	MISC.	15,000

Respectfully submitted, ~ 184,250


Andrew J. Zink,
Registered Mining Engineer

AROUND \$250,000

A REPORT
ON THE
FLORIDA MINE, MONACO AND LOST HEEL CLAIMS
LIDA MINING DISTRICT, ESMERALDA COUNTY,
NEVADA, U.S.A.

INTRODUCTION

Purpose

This report has been prepared at the request of Tri ex Resources Ltd, of Vancouver, B.C.

The information contained herein was obtained during numerous personal visits to the properties during the period 1974 to 1977.

Location and Means of Access

The properties are in the Lida Mining District, Esmeralda County, about 22 miles southwest of Goldfield, Nevada. (Location Map 1.)

The claims comprising these properties are in parts of Sections 5 and 6, T 6 S, R 41 E; Section 31, T 5 S, R 41 E; Section 36, T 5 S, R 40 E; and Section 1, T 6 S, R 40 E; straddling Lida Canyon at an average elevation of about 6,000 feet. (Map 2.)

The claims are readily accessible. The main campsite is situated on one of the Monaco claims on the north side of paved

State Highway No. 3, (Map 2.) and may be reached by proceeding 15 miles south from Goldfield on U. S. Highway No. 95 to Lida Junction and thence westerly for 17 miles on Nevada Highway No. 3. The Florida Mine is located one mile further west along Highway No. 3 about 1,000 feet south of the highway. A well-maintained gravel road leads up the hill to the mine area and other parts of the property.

The Lost Heel claim is some 4,000 feet southwest of the Florida Mine and may be reached by proceeding west from the campsite 2.2 miles on Highway No. 3 to Lida, then south at the Historic Marker on a dirt road for 0.6 miles to the top of the rise where a trail leads westerly up a steep incline for almost half a mile to the caved portal on the Lost Heel claim. (Map 2.)

Climate and Vegetation

The climate of the region is arid.

Annual precipitation averages about 5 inches most of which is received as snow during the winter and early spring months. In the summertime, surface run-off from the brief, but occasionally intense thunder storms, reaches flash-flood proportions on very rare occasions.

Temperatures are somewhat extreme and may infrequently exceed 100° F in the summer and have been reported to go as

low as 0° F, or slightly below, in the winter; however long term average temperatures range from about 70° in July to about 32° in January. Year round operations present no problems.

Vegetation is sparse except for sagebrush, and consists of a few scattered desert plants and an occasional joshua tree; pinion and juniper; willows grow along the wash.

Water and Power

Water, an extremely rare commodity in this part of the state, is readily available in abundance at shallow depths from Lida Canyon. Two wells are present on the claims. The main well, located close to the northwest corner of Monaco No. 1 claim near the bottom of the wash, about 750 feet north of the mill site, is 60 feet in depth. (Maps 2, 3 and 4.) It is encased in 6-3/4 inch steel pipe throughout and has 35 feet of standing water. Under a recent test with a 1 HP submersible pump, the well produced 11 000 gallons in less than 10 hours while lowering the water level only about 4 feet. Therefore, sufficient water for the operation of a plant of virtually any capacity is readily available.

Tridex applied for and was granted a most valuable water permit by the Water Resources Division of the State of Nevada for the use of 19,000,000 gallons of water annually. This allotment can be increased upon application.

Utilizing a single - to three - phase converter, ample power is available from the single-phase power line of The Valley Electric Association which runs along the north side of Highway No. 3 across the property and to which the main campsite is presently connected, (Map 4.)

Property and Ownership

The Florida group comprises 4 patented mining claims totaling about 60 acres. (Map 3.)

The Monaco group is composed of 8 unpatented mining claims and 2 millsites containing a little over 200 acres. Both groups and all claims are contiguous. (Map 4.)

The Lost Heel claim is approximately 20 acres in size, (Map 5.)

The patented claims are owned by Eleanor M. Loughlin of Lida, Nevada, and are held by Tridex Nevada Inc. by an assignment of a Mining Lease and Option to Purchase Agreement from Hughes Mining Development Corporation of Reno, Nevada.

The Monaco claims and millsites are owned outright by Tridex by transfer from Hughes Mining Development Corporation. The Lost Heel claim is owned by Tridex by purchase and quitclaim deed.

The claims are shown on Maps 3, 4 and 5 and are recorded in the Esmeralda County Recorder's Office in Goldfield Nevada as follows:

PATENTED CLAIMSMINERAL SURVEY NO.

Florida	3281
Mother	3281
Father (Partial)	3281
Lenore	3281

UNPATENTED CLAIMSLOCATION NOTICESCERTIFICATES OF
LOCATION

	<u>Book</u>	<u>Page</u>	<u>Book</u>	<u>Page</u>
Monaco No. 1	9	509	10	284
Monaco No. 2	9	509	10	285
Monaco No. 3	9	510	10	286
Monaco No. 4	9	510	10	287
Monaco No. 5	9	511	10	288
Monaco No. 6	9	511	10	289
Monaco No. 7	9	512	10	290
Monaco No. 8	11	593		
Amended	13	160	13	161
Monaco No. 9	11	593		
Amended	13	162	13	163
Monaco No. 10 Fraction	12	394	13	164
Mill Site Monaco No. 20	11	598		
Mill Site Monaco No. 21	11	599		
Lost Heel No. 1			23	179

Plant and Equipment

Two well-equipped mobile homes, complete with running water, sewer (septic tanks), electrical power, propane heating and cooking facilities, are located at the campsite (See Maps 2 and 4) which provides comfortable living quarters for up to 10 men as well as office space.

A 20' X 10' frame building and a 12' X 10' annex, wired for electricity and with water and sewer connections, houses a partially assembled assay office which is presently used to store the flotation reagents and other supplies and equipment.

Oil, grease, lubricants, carpenter tools, miscellaneous hardware and supplies are stored in a war surplus 10' X 8' canvas shed behind the office trailer.

A 1,000 gallon steel tank, mounted on a steel frame provides gasoline storage.

A drilled well 80 feet deep with 8" casing, equipped with a 5 gallon per minute submersible pump, pressure tank and fittings, supplies an adequate pressurized water service to the trailers for domestic purposes.

Explosives are stored near the mine site in an old drift which has been remodelled to meet the rigid requirements of State and Federal laws.

Equipment owned by the company is listed in Appendix "A". A pilot plant, with 5 tons per day capacity, has been

assembled near the Florida Mine on the side of a steep ridge in order to provide gravity flow throughout. (See Maps 4 and 6.) The plant consists of an 8 ton ore hopper with 3" grizzly and gate feed, a 6" X 8" jaw crusher powered by a 5 HP electric motor, a 17 ton conical ore storage bin, a syntron feeder, an 8" conveyor belt, a Wheeler ball mill powered by a 7½ HP electric motor, an 8' X 4' Immco fiberglass concentrating table equipped with a ½ HP electric motor, a 1,000 gallon conditioning tank, a bank of two Denver Sub A flotation rougher cells and a 2 cell No. 8 Denver flotation cleaner machine, all with appropriate electric motors, completes the circuit.

Water for the operation is pumped by a 1 HP electric powered pump from the well, north of the mill site, through 750 feet of buried 1½" plastic hose into a 12,000 gallon storage tank installed just above the Pilot Plant.

Power to run the Pilot Plant is supplied by a 30KW portable Caterpillar diesel D310 generating plant. By conversion alternative power is available from the power line that follows State Highway No. 3.

History and Production

According to the Nevada Bureau of Mines and Geology, Bulletin 78, published in 1972, entitled "Geology and Mineral

Deposits of Esmeralda County, Nevada," by J. P. Albers and J. H. Stewart¹, and U.S.G.S. Bulletin No. 308 by S. H. Ball² published in 1907, the Lida district was discovered in 1871. By the 1880's the easily mined, enriched and near surface gold and silver oxide ores had been largely exhausted and mining activity diminished; however, some gold and silver were mined at intervals during the 1880's and 1890's in the Lida district. In 1904 and 1905, sparked by the discovery of the fabled gold ores at near-by Goldfield, the old mines were re-opened and new discoveries made at Lida. Except for sporadic "high-grading" operations on neighboring properties, it is reported that since 1910 there has been virtually no mining activity in the district.

While no accurate records were kept, production is reported to have been something less than \$1,000,000. Judging by the old workings, the Florida and the Wisconsin mine, owned by the Hughes Tool Company's Summa Corporation on the same structure and adjoining the Florida to the west, contributed substantially to this production. (The Wisconsin property has recently been sold by Summa to Houston Oils and Minerals.)

Ball² states:"some rich pockets of horn silver and silver-bearing galena were removed. The ore, probably picked, ran \$500 to \$1,000 per ton. It is said the values decreased at depths of 200 to 300 feet....The Florida-Goldfield Mining Company's shaft....150 feet deep, was filled with water within 80 feet of the surface....the water level....in the Lida district, is comparatively near the surface....the oxidized zone is, for a desert country, very shallow....In the early days....considerable bunches of oxidized ore were hauled to Austin (175 miles) and Belmont (110 miles). It is scarcely probable that all these pockets have been found...Much of the ore already taken

out is refractory and would require milling and smelting."

Previous Work

During the early period many cuts were made, short prospect tunnels driven and shallow pits excavated on the claims. Several shafts were sunk and a considerable amount of underground mining was done. Unfortunately, other than the survey plot for patent purposes, no maps of any description whatsoever, of either the mine area or the underground workings, are currently available.

Of the shafts, the most important appear to have been what are herein referred to as the East and West Shafts, (Map 6.)

The 3 compartment, 12' X 6' East Shaft was apparently the main entry to the mine. In 1907, according to the patent survey plot, it was serviced by an engine and hoist and the material extracted was treated in a 5 stamp mill. At the present time, although all the timbers have been removed, the walls are in excellent condition and the shaft is open to a depth of 125 feet where a bulkhead prevents further access. Ball² states that this shaft was 150 feet deep in 1905.

The West Shaft was sunk to an unknown depth. About 30' feet below the collar, it was intersected by an east-west drift which appeared to be the upper part of a narrow stope that had been filled to provide the floor for the drift.

A few feet west of the shaft, the drift opened into a stope some 20 feet high, 15 feet wide and 55 feet long. The back of this stope comes within 10 feet of the surface. About 10 feet east of the shaft, the drift opened into a steep-walled glory hole about 20 feet in diameter. This area is hereinafter referred to as the Main Tunnel. (Map 6.)

The deposit was further explored by three tunnels spaced down the hill eastward from the West Shaft, each of which was successively offset to the north and are hereinafter referred to as the Upper, Middle and Lower Tunnels, respectively. (Map 6.)

Of these, only the Upper Tunnel (3' X 5') was accessible for 160 feet. Near its western end a raise zig-zags to the surface. Several short drifts or stopes were run from various levels up the raise. Just at the raise, the tunnel forks and each fork is completely back-filled.

The Middle Tunnel was caved and/or backfilled to the portal.

The adit to the Lower Tunnel, which had been driven through 200 feet of clay before reaching the solid rock, was completely caved and buried beneath talus. A small flow of water seeped from the mud covering the portal and flowed across the dump and down the hill.

Recent Work

In 1973 and early 1974, the Hughes Mining Development

Corporation of Reno, Nevada, cut 50 feet of channel samples in the stope just west of the West Shaft in the Main Tunnel area. The samples are reported to have assayed from 500 to 1200 ounces of silver per ton. In an effort to get at this ore, Hughes employed the equivalent of a D8 bulldozer in a futile attempt to terrace and remove the dangerous and poorly consolidated clay covering the portal to the Lower Tunnel. It was hoped, according to the stories of fairly reliable local Old-Timers, that this would lead to a point beneath the ore in the Main Tunnel area. When far greater thicknesses of clay covering than originally estimated were encountered, this effort was abandoned.

The Upper Tunnel was then opened for 100 feet by expanding the little 3' X 5' tunnel into a 10' X 8' drift in order to accommodate the loader being used. Failure of the operator to provide adequate support for the treacherous ground encountered resulted in the condemnation and abandonment of this drift at that point.

Finally, an almost horizontal open cut was started at a slight angle, because of the topography, to the strike of the ore zone, at a point about 150 feet east and downhill from the West Shaft and slightly lower in elevation than the floor of the drift 30 feet below the shaft collar. This large, open cut was carried for 135 feet to and through the Gloryhole and the West Shaft, terminating in the large open stope.

Neglect to adequately terrace this cut to provide safe entry resulted in its condemnation.

The muck removed from the mineralized section of this cut was stockpiled near the portal in 10 separate piles, the locations of which are shown on Map 6.

In mid 1974, with its funds exhausted, Hughes sought outside assistance from a consortium of Canadian companies which culminated in the formation of Tridex Nevada Inc., a Nevada corporation. Tridex was incorporated by the consortium for the purpose of acquiring, among other things, the above-mentioned Lease and Option to Purchase Agreement covering the claims.

Joint Venture

Being otherwise and elsewhere committed in late 1974, Tridex entered into a Joint Venture Agreement with an experienced miner and millman (and such others as they might require) for the purpose of developing the property and bringing it into production. Tridex, however, carefully supervised all sampling and assaying.

Main Tunnel and Pilot Plant

The floor of the Main Tunnel was cleaned off, washed and channel-sampled in detail. This sampling revealed the existence of several "high-grade" sections. (Assay Plan 1)

In early 1974, Hughes had had several metallurgical tests performed on the ore which demonstrated that a gravity-flotation circuit would produce an excellent concentrate. In late 1974 these conclusions were confirmed by D. C. Linton. Reports on the results of these tests are appended hereto. (Appendix "B")

These laboratory tests, conducted by three independent laboratories, indicate a recovery of 85% to 90% of the silver and a ratio of concentration which will average about 20 to 1. The gold recovery varied from 60% to 80% with a ratio of concentration ranging from 25 to 1 up to 30 to 1.

In accordance with the recommendations contained in these metallurgical reports, the 5 ton Pilot Plant was assembled to:

- (a) test the amenability of the ore to treatment; and
- (b) determine, if possible, the economics of a viable operation; and
- (c) provide a small but immediate cash flow by mining and treating the "high-grade" showing in the Main Tunnel.

To test the plant, separate trial runs were made on bulk samples consisting of one loader bucket of approximately 1,750 pounds, taken from each of the ten 1974 stockpiles.

The ore was crushed to $-3/4"$. Two pound head samples were taken at 15 minute intervals from the feeder belt. The ball mill ground the ore to -30 mesh and the discharge was fed to the concentrating table. The table tailings were conditioned by the addition of the proper amounts of standard flotation reagents, Xanthate 350 and Aerofloat 31 in the conditioner. The conditioner discharge was fed into the flotation circuit where more reagents in the proper proportions were added. The results of the tests are listed in the following tabular summary:

STOCKPILES

	1	2	3	4	5	6	7	8	9	10
--	---	---	---	---	---	---	---	---	---	----

GOLD

Ozs/Ton	Tr.	Tr.	0.034	0.058	Tr.	Tr.	Tr.	Tr.	0.054	Tr.
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SILVER

Ozs/Ton	4.458	1.553	9.440	22.842	6.216	0.962	10.64	19.10	15.406	6.62
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Average head sample assay

Au 0.015; Ag 9.72

Number of pounds of ore treated

17,500 or 8.75 tons

Number of pounds of table concentrates produced

600 = 66.67%

Number of pounds of cell concentrates produced

300 = 33.33%

Total pounds of concentrates

900 = 100%

Ratio of concentration

19.5 to 1

Average assay of table concentrates

Au 0.6724 Ag 156.67

Average assay of cell concentrates

0.3100 189.41

Weighted average assay of concentrates

0.5516 167.58

Calculated recovery of silver = 88.67%

Both concentrates contain a large percentage of pyrite. Preliminary test work indicates that the pyrite does not contain any gold or silver and that additional regrinding and depression of the pyrite may increase the grade of the concentrate.

Upon completion of the mill tests, the adit to the Main Tunnel was timbered and a 15° decline started, designed to intersect the above-mentioned ore-shoots to yield at least 15 feet of backs. Bad ground necessitated the use of numerous roof-bolts.

The muck from the decline, totalling about 260 tons consisting mostly of backfill was stockpiled in an elongated dump near the portal burying the 1974 stockpiles 6, 7, 8 and 10. (Map 6.)

As the decline progressed, the mineralized zone was revealed to be at least 30 feet in width; however, a strong mud-filled fracture dipping about 80° to the north and striking at a very slight angle to the fault breccia zone was encountered along the north wall of the zone which, together with the southerly sloping south wall of the stope, created a hazardous inverted wedge overhanging the decline. In March of 1976 the Atomic Energy Commission exploded their last underground nuclear blast which severely jolted the mine area causing wide cracks to form along both walls of the above-mentioned inverted wedge resulting in the hasty

abandonment of the decline. The Joint Venture was dissolved.

Upper Tunnel

Because of the dangerous ground conditions only the western 75 feet of the Upper Tunnel could be safely sampled. Up to 12 inches of sloughed material covered the floor of the more or less undisturbed western 50 feet of the tunnel. Two continuous channel samples, each 25 feet long, were cut from this material. (Assay Plan 2)

Lower Tunnel

The Lower Tunnel was cleaned out after arduously timbering and spiling through the large mass of clay covering its entrance. Unfortunately, it terminated about 250 and 120 feet short of the downward projections of the ore existing in the Main and Middle Tunnels respectively. (Map 6.)

Middle Tunnel

The inconspicuous and unimpressive Middle Tunnel upon being slightly widened and cleaned out amazingly revealed over 400 feet of underground workings. (Assay Plan 3.) A large caved or stoped area, about 20 feet in all dimensions,

herein referred to as Room No. 1, occurs 130 feet from the portal in a mineralized area intruded by bleached granite on the hanging wall side of a cross-fault striking northeast and dipping about 45° to the southeast. After crossing the room and the fault, the tunnel continues westerly 70 feet and opens into another room, (Room No. 2) about 15 feet in all dimensions. The muck from Rooms 1 and 2 and the connecting tunnel was stockpiled near the portal and sampled. (Map 6.) The muck from the caving and widening of two crosscuts (CC1N and CC2N), about 25 feet apart, running northwesterly for 35 and 80 feet from the north wall of the connecting tunnel and Room 2, respectively, was added to the stockpile and sampled separately. This material also includes spall from two raises which connect with the Upper Tunnel from points 30 and 40 feet from the entrances to the crosscuts respectively. Beyond Room 2 the tunnel continues for another 45 feet and this muck was also added to the dump but not sampled.

Drilling

As an experiment with a converted diamond drill rig, which was temporarily available, two 3 inch holes were drilled in the fault breccia zone in the vicinity of the Main Tunnel using a tricone rotary bit and employing a compressor to blow the cuttings from the hole. The cuttings were caught in a plastic bag at 5 foot intervals.

Hole 1, located in the cut leading into the Main Tunnel, was abandoned at 22 feet where the bit became stuck in a wet mud seam in the cross-fault. Hole 2, 150 feet west of the West Shaft, was abandoned in ore at a depth of 42 feet when it proved impractical to further attempt to fish the pieces of the rotary bit which had disintegrated, from the hole. Except for the failure of the bit, the drilling procedures and the samples recovered were quite satisfactory. The locations of these holes are shown on Map 6.

GEOLOGY

GENERAL GEOLOGY OF THE AREA

Sedimentary formations range in age from Precambrian, through Cambrian to Ordovician. Exposures of many large, coarse-grained intrusive granitic plutons of Jurassic and Tertiary age suggest the possibility that they are subjacent and underlie the entire area at relatively shallow depths, being the eastward continuation of the Sierra Nevada Batholith.

Numerous porphyritic granite and felsitic aphanitic rhyolite dikes and, to a lesser extent, dioritic and andesitic dikes of Jurassic and/or early Tertiary age intrude the sedimentary formations.

Early Pleistocene or late Pliocene basalts unconformably overlie the older rock and cap some of the hills.

The stratigraphy is summarized in the following table of formations:

<u>Period</u>	<u>Formation</u>	<u>Description</u>
Jurassic/ Tertiary	Granite	
Ordovician	Palmetto	Dominantly black shales; locally contains abundant chert, limestone and quartzite.
Cambrian	Emigrant	Mostly claystone in lower part, overlain by thin-bedded limestone with cherty layers.
Cambrian	Harkless	Dominantly green siltstone.

Table of formations (Continued)

<u>Period</u>	<u>Formation</u>	<u>Description</u>
Cambrian	Poleta	Mostly thick-bedded carbonate in lower part, overlain by green siltstone with limestone and quartzite interbeds.
Precambrian	Deep Springs	Dominantly well-bedded limestone and dolomite; subordinate dark quartzite.

The claims are located close to the nose of the so-called Silver Peak - Palmetto - Montezuma oroflex* near the eastern tip of Magruder Mountain which is essentially a southward dipping homocline cut by two groups of northwest and northeast trending high-angle faults. In contrast, Palmetto Mountain, just across the valley, is an area of complex thrusting. One of these major thrusts crosses the valley and cuts through the northern part of the claims group. (See Map 3)

GEOLOGY OF THE FLORIDA CLAIMS GROUP (MAP 3)

The predominant feature of the claims group is an east-west major fault, hereinafter referred to as the Florida Fault which traverses the Precambrian Deep Springs Formation comprising a heterogeneous unit of dolomites, limestones, quartzites, limy sandstones and siltstones or shales. Of the beds exposed

*"Oroflex", as defined by Albers¹ is a mountain range with an arcuate trend that is supposed to result from tectonic bending of the crust.

on the north side of the Florida fault; the lowest member outcropping on the claims is an erosion-resistant, dense, dark-blue weathering, highly-fractured limestone characterized by networks of white calcite and quartz stringers. This layer grades upwards into a series of light-blue to white, finely crystalline, thinly laminated limestones which are occasionally intercalated with coarser crystalline flecked lenses. Overlying this series is a thick stratum of light tan to dark-brown weathering limestone succeeded by alternating beds of grey and brown, highly kaolinized shales. A steep, northerly striking fault with a slight westerly dip, marks the contact between the decomposed shales and the overlying clays, clay conglomerates and muds. (See Map 7.) These clays appear to be faulted, sheared and fractured in much the same manner as the underlying formations and are probably of the same age.

The adjacent members on the south side of the fault are medium-to fine-grained, grey to dark-brown siltstones or shales overlain by a dense, dark-blue, highly fractured limestone which is markedly similar in appearance to the lowest member occurring on the north side of the fault but is probably not correlative with it.

Locally, irregular gossans, as well as areas of chlorite schists have been formed, near the fault.

The formations are intruded by irregular dikes of light colored, medium- to fine-grained, sometimes porphyritic granite, which is usually speckled with numerous pale to dark-brown blebs of limonite. Frequently, it contains numerous tiny disseminated crystals as well as seams and veins of pyrite. In proximity to the fault breccia zone, it is bleached to a white unctuous mass. The contacts of the granite are frequently indurated, usually iron-stained, and sometimes a pyritic zone to to 2 inches in width occurs. In contact with the limestone, black carbonaceous zones, up to two feet in width have been developed. The granite is probably older than the fault breccia zone.

Locally, talus slopes of dark, dense, aphanitic diorite indicate the presence of dikes of this rock. It, too, contains pyrite.

Structures

Folding

North of the Florida fault the sediments are folded into an open assymetrical anticline. The beds on the southwest limb strike $N60^{\circ}E$ and dip 60° to 65° to the southeast while those on the northeast limb strike $N30^{\circ}E$ and dip 50° to 55° to the southeast. The axis of the fold strikes $N25^{\circ}W$ and pitches about 35° to the southeast. The axial plane strikes $N45^{\circ}W$ and dips steeply to the southwest. Drill Hole 2 is located on the nose of this fold.

Faulting

All the above-mentioned formations are not only considerably displaced by the Florida fault but, in addition, they are intensely and extensively shattered by sets of faults and/or fractures of various attitudes. (Map 7.)

At the eastern end of the Main Tunnel, the Florida fault has been offset 70 feet to the north northeast by a cross-fault striking $N22^{\circ}E$ and dipping 55° to the southeast. In the offset segment, as revealed in the raise from the Upper Tunnel to the surface, the dip of the fault breccia zone has been reversed to about 70° to 80° to the north. Although the fault breccia zone is only partly exposed at the eastern end of the Main Tunnel, the north wall also appears to dip to the north. Apparently, therefore, the fault breccia zone has rolled over someplace between the property boundary and the Main Tunnel area. The roll-over appears to wrap itself around the nose of the above-mentioned anticlinal fold.

Drag on the sediments on the north side of the Florida fault in the vicinity of the Main Tunnel suggests that the north side is downdropped which indicates that it is of the reverse type at the western end of the property and is a normal fault east of the roll-over.

About 60 feet east of the cross-fault mentioned above, there appears to be a second cross-fault dipping about 60° to the southeast which has offset the fault breccia zone only about 15 feet to the northeast. In an area complicated by a

large granitic intrusion about 30 feet further east, a third cross-fault dipping about 45° to the southeast occurs. The amount of displacement of the fault breccia zone along this third cross-fault is not known. A fourth fault of similar attitude occurs about another 60 feet further east.

West from the Main Tunnel, the surface trace of the Florida fault is barely visible in several old and caved cuts. It ascends a steep, deep, narrow, steep-walled, talus-filled gulch for 500 feet where it crosses the property boundary into adjacent claims in which the Wisconsin mine was developed on the same structure in the early days by means of a 200 foot shaft and considerable amount of underground and surface workings.

The previously mentioned major thrust fault dipping about 45° to the south is located some 900 feet north of the Florida fault and parallel to it. Here the upper plate, containing the step-faulted Florida and Wisconsin mines in the Precambrian Deep Springs Formation, is thrust over the interbedded black cherts, quartzites, limestones and variegated shales of the Ordovician Palmetto Formation. The continuation of this thrust to the east has been prospected by small cuts and shallow shafts. Malachite and azurite are visible on the dumps. A mineralized grab sample assayed 4.55 ounces of silver and 0.002 ounces of gold. This thrust should intersect the fault breccia zone at about 900 feet.

Just east of the Florida group boundary, a high-angle arcuate fault, trending southerly, cuts through the Monaco claims and marks the eastern boundary of the Deep Springs

Formation. It divides the steeply dipping sediments on the Florida claims from the gently dipping formations on the Monaco claims.

All the formations are intensely shattered by small closely spaced, more or less vertical faults and fractures striking east-west, northeast and northwest.

GEOLOGY OF THE MONACO CLAIMS (MAP 4)

On the Monaco claims, adjoining the Florida group to the east and east of the arcuate fault, the sediments are relatively flat lying but are, nevertheless, folded into a gentle anticline. The apex of this fold is located in the middle of, and is parallel with, the valley. The Harkless Shales of lower Cambrian age outcrop on the south side whereas the dark shales and cherts of the Ordovician Palmetto Formation form the north wall of the valley. The valley floor, therefore, marks the locus of a fault with considerable vertical displacement, the north side of which has been downdropped.

Opposite the campsite, on the south side of the valley, the limestones of the Emigrant Formation of Cambrian age have been thrust over the Harkless Shales. The campsite is located in a small hill-wash embayment in a small semicircular wedge of Poleta Limestones and Shales of lower Cambrian age which are surrounded on all sides by the overthrust Palmetto Formation.

On Monaco Claim 2, numerous angular occasionally mineralized highly shattered, pieces of quartz float are strewn along the south wall of the valley. A grab sample from a large piece assayed 2.98 ounces of silver per ton.

A few hundred yards east of the campsite, on claims adjacent to the Monaco on the south side of the canyon, three parallel, highly mineralized faults, about 300 feet apart, striking N60°W and dipping 45° to 70° to the north, intersect the above-mentioned fault. (See Map 4.) The wall rocks of these faults are intensely hydrothermally altered and bleached for distances of up to 50 feet.

The mineralization occurs in quartz veins and consists of arsenopyrite, pyrite, galena, sphalerite, chalcopyrite, covellite, argentite and gold.

These mineralized faults have been explored by means of cuts, trenches, several shafts and considerable underground workings.

Two selected grab samples from mineralized lenses in the middle fault taken by F. L. Croteau assayed as follows:

<u>Gold (Ozs)</u>	<u>Silver (Ozs)</u>	<u>Copper %</u>	<u>Lead %</u>
Not done	Nil	23.75	4.29
0.028	11.25	Not done	25.10

Three channel samples, totalling 36 feet, were cut from a large dump surrounding a shaft sunk on the most easterly of the three

faults and were assayed with the following results:

<u>Gold (Ozs)</u>	<u>Silver (Ozs)</u>
0.112	1.88
0.088	2.13
9.006	0.35

GEOLOGY OF THE LOST HEEL CLAIM (MAP 5)

The Lost Heel claim straddles a fault zone, somewhat similar to the three parallel faults mentioned above, striking N65°W and dipping 70° to the south. The north side has been down-dropped bringing the lower Cambrian Harkless Shales on the north side into contact with the Precambrian Campito Formation on the south side.

The fault is exposed for about 800 feet where it cuts across a steeply sloping, northerly trending knoll, deeply eroded on both sides. Although all the workings are almost completely caved and debris-filled, it would appear that the deposit was explored along its exposed length by a series of surface trenches and cuts and by a tunnel that entered near the bottom of one side of the knoll and emerged near the bottom on the other side. A couple of caved, steep-walled "glory-holes" probably indicate that the stopes occasionally broke through to the surface.

The zone is highly brecciated and intruded by massive, dense, milky white quartz veins which have also been shattered. Mineralization, consisting chiefly of galena with minor amounts of pyrite and argentite as well as azurite, cerargyrite, and

cerrusite, occurs throughout the quartz and as fracture fillings within it.

The wall rocks are intensely altered and locally silicified.

Two continuous chip channel samples, each two feet in length, consisting mostly of the shattered milky white quartz, were assayed with the results listed below in ounces per ton. Sample No. 2 contained much galena. No. 1 had little, if any.

	<u>No. 1</u>	<u>No. 2</u>
Gold	0.010	0.178
Silver	1.13	125.19

FLORIDA MINE GEOLOGY

The Fault Breccia Zone

Although extensive movement along the Florida fault has created a wide breccia zone, only a relatively small portion of it is accessible. An examination of these areas indicates that it is a heterogeneous mixture of lenticular, sometimes contorted and sinuous, fragments of wall rock in which networks and flaser textures are frequently developed. Crush breccia, mylonite, mud and gouge. This mixture is intruded by milky and glassy quartz and calcite veins. Lenses or veins of dark, highly brecciated, dense, tough chalcedonic quartz also intrude the breccia and where shattered is frequently healed with glassy and milky quartz stringers and veinlets. Locally, finely laminated, dark to black, siliceous, pyritic, vertically banded veins or lenses have been developed. Crushed masses of quartz are common. Small to large irregular chambers, lenticular pods, sinuous seams, undulating veins and persistent pipes of a bleached, soft, powdery, crumbly, calcareous material sometimes containing grains of quartz, are of common occurrence.

The breccia zone is highly shattered by faults and fractures. Slickensides are numerous. Locally, large angular horsts of the dark-blue limestone occur. Many of the tight fractures have been impregnated with dark pyritic material.

Substantial flows of water emanate from faults 150 feet from the portal and the western end of the extension to CC2N in the Middle Tunnel and from the western end of the Lower Tunnel.

Mineralization

Mineralization consisting chiefly of pyrite, galena, argentite and azurite occurs in both the quartz and calcite veins and as fissure fillings and impregnations into the crush breccia and fragments. Encrustations of malachite frequently occur along the slickensides and zone walls. The presence of the readily recognizable azurite invariably denotes the presence of high-grade ore. The oxide zone is very shallow - probably less than 50 feet. Minor amounts of Cerargyrite, Cerrusite and Anglesite along with Azurite are restricted to the fracture fillings and to the remnant scabs of the above-mentioned, altered, bleached and powdery material in the pipes, chambers, etc.

The scarcity of these minerals is a tribute to the efficacy of the mining abilities of the Old Timers who apparently sought only the oxide ores. Likewise, the existence of clearly visible veins of high-grade sulphide ore is mute testimony to the fact that such ore in those pre-flotation days, was not amenable to simple treatment.

Although chalcopyrite and sphalerite are reported by Ball (1907)², these minerals have not yet been identified. Doubtless the malachite and azurite were derived from chalcopyrite and the lead carbonates and sulphates from the galena.

Alteration Of The Wall Rocks And Fault Breccia Zone

The wall rocks are frequently silicified and bleached and altered for distances of up to 50 feet from the zone. Banded and parallel structures are highly developed. Locally, the shales have been converted to Chlorite Schist.

The lenses and fragments within the zone are extensively bleached, intensely kaolinized, occasionally silicified, but always stained light tan, buff, mauve, pink, purple, various shades of reds and browns, and black. Fluffy, hair-like skims of alkali and/or sulphate, sometimes a couple of inches thick, cover many of the old exposed tunnel walls. Gypsum occasionally fills minor fractures and occurs as coatings on some of the mud seams, particularly along the walls of the zone. The bleached, powdery calcareous material appears to mark the locations of the main channelways for the supercharged gases, steam and hot waters during mineralization. Judging by the fact that this material has virtually all been mined out, it is concluded that it must have been the chief host of the oxide minerals.

Relationship of Mineralization To Structure

The detailed geological and structural study of this complex area has not been completed but mapping to date reveals that the mineralization apparently occurs only in the fault breccia zone. There has been no dissemination into or replacement of the wall rocks, although a very high-grade sample (G-2) was taken from a fracture cutting the shales. (Assay Plan 3.) The Upper Tunnel also appears to have followed a mineralized fault zone leading into the fault breccia zone.

The mineralization was controlled, or at least the concentration of the mineralization in the fault breccia zone was augmented by the cross-faults. While, with the exception of Drill Hole 2, no information is available on those parts of the fault breccia zone removed from the cross-faults, the mineralization appears to be concentrated in the fault breccia zone on both sides of the cross-faults where as a result of tensional drag, the fault breccia zone has been enlarged and shattered thus providing the numerous openings for the entry of the hot, siliceous, ascending, mineral-bearing solutions. These concentrations were, apparently, further aided and abetted by the damming effects of the cross-faults. Calcite, probably dissolved from the brecciated limestones containing disseminated mineralization, was redeposited in some of the fractures.

Lithologic controls also, probably, exist. In the mines adjacent to the west, the ore is reportedly confined to those

sections of the fault breccia zone which traverse a light tan limestone unit. Likewise, at least some of the ore in the Florida mine area appears to occur in a similar formation; however the ore-bearing strata in the adjacent mines are some 700 feet lower in the stratigraphic sequence than the ore horizons in the Florida mine area.

Sequence Of Events

Probably, contemporaneous with the tectonic bending which resulted in the formation of the so-called Silver Peak - Palmetto - Montezuma oroflex, the sediments were intruded by the granite and folded into a broad anticline. Continuing stresses and uplifting occasioned by the further gradual intrusion of the Sierra Nevada Batholith resulted in the local tilting of the sediments with the arcuate rupturing along the east boundary of the Florida group, the formation of the Florida fault parallel to the elongation of the intruding pluton, the cross-fracturing and displacement of the fault breccia zone, and finally the thrust faulting.

While Albers and Stewart¹ state: "...the thrusts in the county are offset by, and are apparently older than, at least the great majority of high-angle faults." evidence on this property would indicate that the thrust is the younger in that it does not appear to be cross-faulted which should be the case if it were present when the cross-faulting took place.

The mineralization has no apparent association at least

with the early granite. It is post cross-faulting in age but may be contemporaneous with it, since it fills the cavities and openings created in the fault breccia zone by the cross-faulting. In every instance where such cross-faulting of the fault breccia zone has occurred, ore invariably occurs in the fault breccia zone near and in both the hanging and foot wall sides of the cross-faults.

Similar mineralization exists in the eastward extension of the thrust fault at least to a point north of the campsite. Since it is virtually certain that the thrust and the fault breccia zone intersect at depth, it is probable that the ore-bearing solutions ascended the thrust and were diverted into the fault breccia zone along the plane of intersection where they were probably slowed down by the tight cross-faults and deposited their loads in the fractures and openings created in the fault breccia zone by the tensional drag.

ORE RESERVES

METHODS OF SAMPLING AND LIMITS OF ACCURACY

Except for a few grab samples, as listed hereunder, all underground samples were channeled with an air-operated chipping hammer equipped with a moil bit. Every sample was fire-assayed for both gold and silver. To expedite the assay returns, the parted beads of samples from the Upper and Middle Tunnels estimated to contain less than 0.007 ounces of gold were not weighed but were listed as "Traces." The results are shown on Assay Plans 1, 2 and 3.

To check the possibility of disseminations, some of the wall rocks in the vicinity of the fault breccia zone were also channel sampled; however, to avoid cluttering, only those samples which contained any values are shown on the assay plans. Assays for lead, copper or zinc were not done at this time.

Initially, the locations of the underground samples were marked and numbered with spray paint, but this method was soon abandoned because of the difficulty of finding suitable surfaces on which to make legible figures and also of controlling the spray. Thereafter, pieces of streamer tape bearing the sample numbers were nailed to each end of the sampled section. Where contiguous samples were taken, the number appears on the tapes at the right hand end of the sampled section.

Dump Samples (Map 6.)

From the dump at the Main Tunnel, four contiguous horizontal shovel channel samples, each 15 feet long, were taken midway along the side of the dump. Each sample was split down to about 5 pounds. The arithmetic average of the assays is 0.045 and 11.17 ounces of gold and silver, respectively.

To ascertain whether there might be any concentration of values in the fines, a sample from stockpile No. 8 was screened, sampled and assayed with the following results:

Coarse - + 3/4 inch	15.200 ounces of silver
Medium - 3/4-1/4 inch . . .	6.146 ounces of silver
Fine - - 1/4 inch	8.320 ounces of silver

At the Middle Tunnel the dump of the caved and backfilled material removed from Rooms 1 and 2, and the connecting tunnel was shovel-channelled at 5 foot intervals across the top. The weighted average of the 185 feet of channels is 2.35 ounces of silver. Samples of the muck from CC1N which was added to the stockpile, were obtained by taking shovelfull from each of the four buckets of muck removed and averaged 2.22 ounces of silver.

The muck from CC2N, which was composed of spall at the bottom of the raise to the Upper Tunnel and caved material in about equal proportions, was sampled in a similar manner. The 9 samples taken averaged 4.83 ounces of silver.

Three continuous channel samples, each 15 feet in length, were cut from the small dumps surrounding the openings where the raise from the Upper Tunnel breaks through to the surface and assayed with the following results:

	<u>Gold</u>	<u>Silver</u>
East End	0.012	15.88
Middle	Tr.	17.46
West End	Tr.	4.43

Drill Hole

The cuttings from Drill Hole 2 were collected at intervals of 5 feet and reduced by means of a Jones Splitter to approximate 2 pound assay samples. The assay results are shown on Assay Plan 1.

Grab Samples

The above-mentioned grab samples, which were not used in any of the calculations, are listed hereafter:

No.	Location	Description	Silver Ozs.	Gold Ozs.	Total Value Per Ton
G - 1	Middle Tunnel, 140' W. Adit	Copper Stained, Brecciated Limestone	118.0	Tr.	\$ 531.00
G - 2	Middle Tunnel.Extension (Between Crosscuts 2N and 3N)	Fault Gouge	403.4	Tr.	1 815.00
G - 3	Middle Tunnel Sub Drift CC2N	Fracture Filling	106.5	0.72	572.85
G - 4	Middle Tunnel Back CC2N W. Wall, North Edge Raise To Upper Tunnel	Fault Gouge	229.8	0.90	1,151.10
G - 5	Middle Tunnel CC2N Back Near Filled Shaft	Fault Gouge 1' Channel	37.7	1.04	304.85
G - 6	Middle Tunnel CC2N W. Ext. North Wall	Fault Breccia 4.5' Channel		1.00	130.00
G - 7	Middle Tunnel CC2N W. End W. Ext.	In Footwall Of Cross-Fault 2' Channel		0.60	78.00
G - 8	Upper Tunnel Short Decline And Sub-Drift Into S. Wall Opp. Raise From CC2N	Fracture Filling	323.26	0.18	1,478.07
G - 9	Main Tunnel Near Portal South Wall	Fracture Zone Con- taining Copper Stringers, 2' Chip Channel	756.69	2.188	3,689.54

ORE BODIES

Definitions

Immediately Mineable Ore

Because the vertical extensions of the ore existing in the Main, Upper and Middle Tunnels havenot been conclusively determined, calculations of "Proved Ore" are difficult; however, to make a fine distinction, virtually assured ore has herein been designated as "Immediately Mineable Ore" and is more particularly described as the ore calculated to exist between the surface or the top of the known ore in that particular section of the mine and the back of the Lower Tunnel.

"Probable" and "Possible Ore" are the downward projections of the existing ore using the depths as defined below:

Probable Ore - 250 feet, using the average of Ball's² assertion of reported decreasing values at 200 to 300 feet.

Possible Ore - 700 feet being the depth in the Florida mine area to the projected ore-bearing strata from the mines adjacent to the west on the same structure.

For purposes of calculation the following assumptions are made:

13 cubic feet = 1 ton of ore; Gold = \$130.00 per ounce;
Silver = \$4.50 per ounce.

Sections

A section in the plane of the fault breccia zone, Figure 1, shows the true lengths of the indicated ore-bodies.

Figure 2, a section at right angles to the planes of the cross-faults, indicates their true slope depths.

Main Tunnel (Assay Plan 1)

The ore existing in the Main Tunnel is exposed within a tabular section at least 30 feet wide and 65 feet long.

(Assay Plan 1.)

The weighted average per ton of 30 channel samples totalling 113 linear feet cut at intervals across the zone, is 19.88 ounces of silver and 0.038 ounces of gold with an average gross value of \$94.40. This section will yield 150 tons with a gross value of \$14,160.00 per vertical foot.

Probable Ore: 250 x \$14,160 = \$3,540,000.00

Possible Ore: 700 x \$14,160 = \$9,912,000.00

Immediately
Mineable Ore: 130 x \$14,160.00 = \$1,840,800.00

Main Tunnel-Drill Hole 2 Section (Assay Plan 1)

The drill hole bottomed in ore and the weighted average of the lower 24 feet is 15.29 ounces of silver and 0.083 ounces of gold with an average gross value of \$79.59 per ton. If it is to be assumed that the zone is one-half as wide at the drill hole as it is in the Main Tunnel and is continuous from the stope to a point 25 feet west of the drill hole, this would yield an additional section 115.5 feet long by 22.5

feet wide containing 200 tons with a gross value of \$15,918. per vertical foot.

Probable Ore =	250 x \$15,918 = \$ 3,979,500.00
Possible Ore =	700 x \$15,918 = \$11,142,600.00
Immediately Mineable Ore	130 x \$15,918 = \$ 2,069,340.00

Upper Tunnel (Assay Plan 2.)

Apparently this tunnel was driven along a steeply northerly dipping mineralized fracture striking N57°W leading into the fault breccia zone. Because of the location of the high-grade ore in the Middle Tunnel, next below, the area west of the raise-to-the-surface in the Upper Tunnel must be the most interesting but, unfortunately, the back-fill in both forks prevents access. While some ore is present no calculations are possible. The most westerly of the two 25 foot channel samples taken from the sloughed material on the floor of this tunnel yielded 2.72 ounces of silver.

Middle Tunnel (Assay Plan 3.)

The ore exposed in this tunnel occurs in a faulted area along the arcuate north wall of the western extension of CC2N and in the east wall of CC2N near its entrance or juncture with the Middle Tunnel. The ore in the first mentioned area

is in the drag part of the breccia zone near the cross-fault and is, apparently, a vertical, tabular body, bounded by two cross-fractures or faults, 26 feet in length with at least 11 feet of exposed width. The breccia zone in the Main Tunnel from which this segment was displaced is over 30 feet wide. so it should be safe to assume that the zone, here, would be half as wide again as the exposed part or 16.5 feet. The weighted average of 7 channel samples totalling 13.5 feet in length, cut at right angles to the strike of this lens is 44.524 ounces of silver with a gross value of \$200.36 per ton. This section will yield 33.04 tons, with a gross value of \$6,620.00 per vertical foot.

Probable Ore =	250 x \$6,620 = \$1,655,000.00
Possible Ore -	700 x \$6,620 = \$4,634,000.00
Immediately Mineable Ore	155 x \$6,620 - \$1,026,100.00

The ore in the latter section, exposed on the east wall and in a short sub-drift into the east wall near the entrance to CC2N, appears to be a zone of undulating, sinuous, more or less parallel, filled fractures striking easterly and dipping steeply to the south about 13 feet in width. The weighted average of 10 channel samples totalling 29.4 feet obtained from the walls and back of the little sub-drift is 0.034 ounces of gold and 19.59 ounces of silver with a gross value of \$92.57 per ton. With 15 feet of length, yield would be

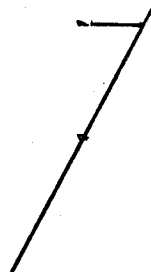
15 tons with a gross value of \$1,388.55 per vertical foot.

Probable Ore =	250 x 1,388.55 = \$347,100.00
Possible Ore =	700 x 1,388.55 = \$972,000.00
Immediately Mineable Ore	155 x 1.388.55 = \$215,225.00

Ore Summary

The above-mentioned calculations may be summarized as shown on the following page.

Location	Indicated Grade	Immediat- ely mine- able ore	Gross Value	Probable Ore	Gross Value	Possible Ore	Gross Value
Main Tunnel	\$ 94.40	19,500	\$1,840,800	37,500	\$3,540,000	105,000	\$ 9,912,000
Drill Hole 2	79.59	26,000	2,069,340	50,000	3,979,500	140,000	11,142,600
Middle Tunnel (CC2N Ext.)	200.36	5,121	1,026,100	8,260	1,655,000	23,100	4,634,000
Middle Tunnel (CC2N E. Wall)	92.57	2,325	215,225	3,750	347,000	10,500	972,000
TOTALS		52,946	\$5,151,465	99,510	\$9,521,000	278,600	\$26,660,600



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