CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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ESSEX

ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

October 23, 1974

Mr. Walt Cramer
Cooke, Everett & Associates, Inc.
P.O. Box 2992
Reno, Nevada 89505

Dear Mr. Cramer:

Enclosed herewith is the report on the Reese Canyon Porphyry Copper Exploration Area sent to us by Mr. David K. Jordt of your company.

We apologize for the delay in returning this material to you and hope that you have not been inconvenienced. Thank you very much for letting us see this report.

Very truly yours,

Toni Davis

Toni Davis
Secretary to Mr. Heinrichs

COPY

Mailed 10-23-74

COOKE, EVERETT & ASSOCIATES, INC.
CONSULTING GEOLOGISTS

421 COURT STREET
THIRD FLOOR

P. O. BOX 2992
RENO, NEVADA 89505, U. S. A.

TELEPHONE (702) 323-8254

David K. Jordt
October 2, 1974

SXM
OCT 7 1974
RECEIVED

Mr. J. K. Jones
Essex International
1704 W. Grant St.
Tucson, AZ

Dear Mr. Jones,

Sending along a summary report of the situation in Reese Canyon, the Desert Minerals claim group. And, under separate cover, some other data recorded several years ago which appears to be pertinent: magnetics, IP, and cx geochem on strike immediately west of the area we are currently investigating by DDH.

Drilling is proceeding, but is extremely knotty and slow owing to the extremely shattered nature of the rock. We are aiming at the down-dip extension of a fault zone, along which a copper-disseminated quartz monzonite has intruded. The expected intersection is 270 to 300'. The conceptual target: the main body of QM from which the dike has derived.

Our expected intersection is probably not deep enough to test the concept fully, however it will give us a cleaner geological profile than we are afforded at the surface, plus some information regarding changes and trends with depth. Already one change has appeared which may be of significance: while rock type remains constant, andesite porphyry, the fractures have become saturated with what appears to be montmorillonite-nontronite — 82'-92' (bottom) which is quite Cu-active by biquinoline cx (off-scale). This condition prev prevails 2000 feet on structure SE in the HW of the fault/QM dike. AA analysis of fines in a 100-foot exposure (dozer cut) of pulverized hornfelsic rock here runs 895 ppm Cu.

Walt will be seeing you at the Las Vegas bash.

Sincerely,

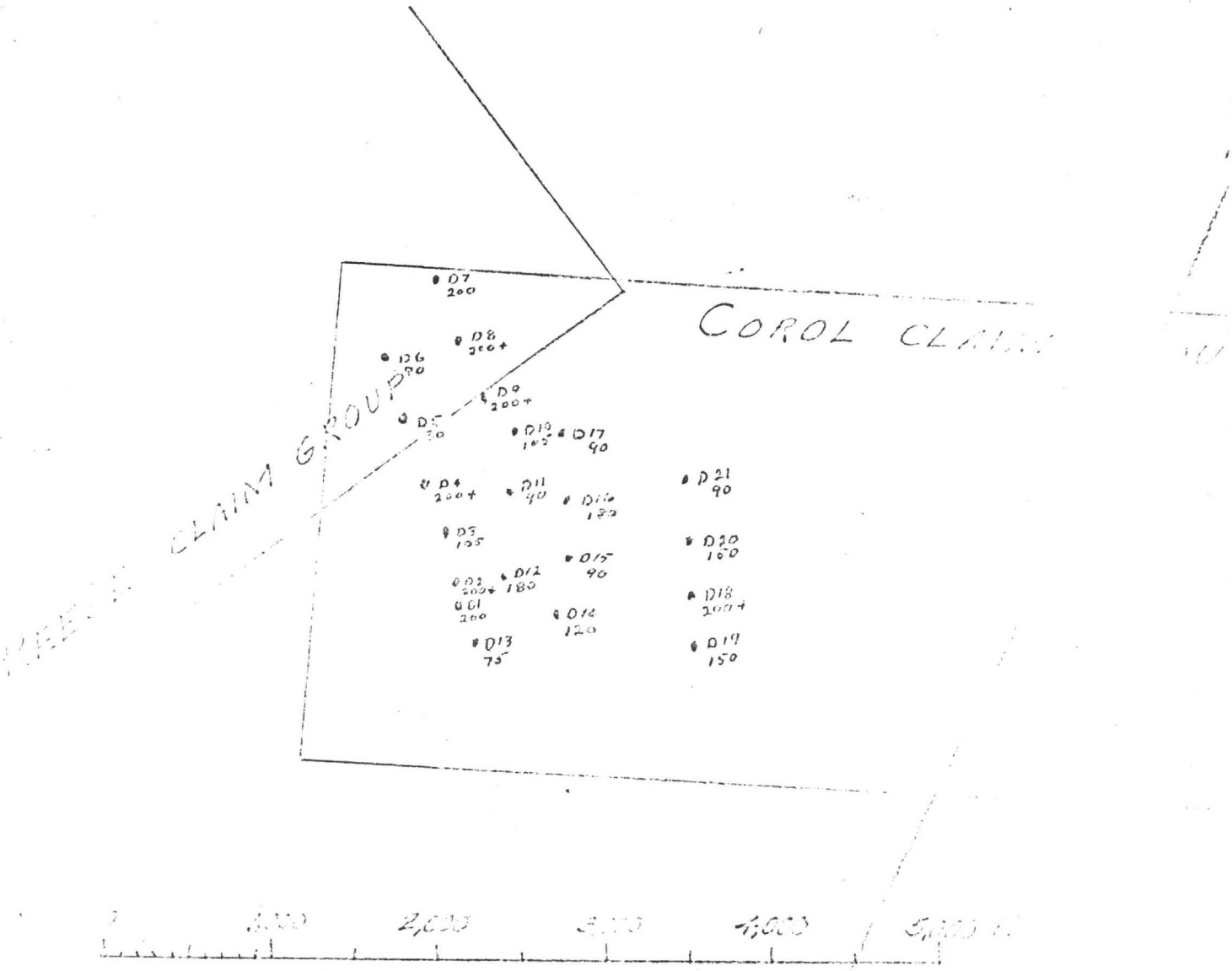
David K. Jordt

David K. Jordt
Geologist

Reese Canyon - Soil Samples - on Ridges in Anomalous Area

Cx - Copper - Biquinoline - by Carl Roan - 2/12/74

Sample sites - D1 thru D21 - expressed in ppm



1" = 1000'

1:12,000

REESE CANYON PORPHYRY COPPER

EXPLORATION AREA

- - -

FINDINGS TO DATE

david k. jordt

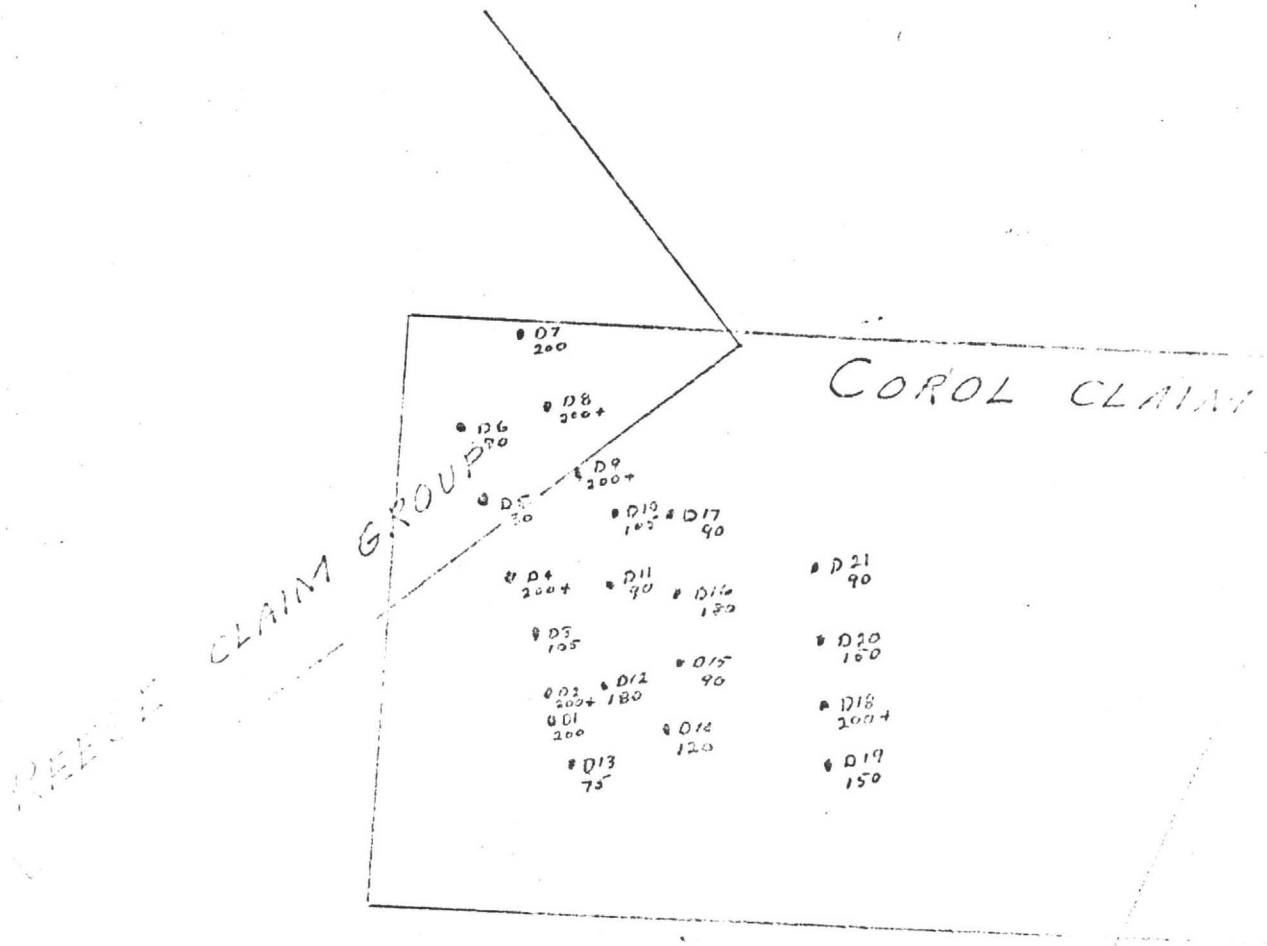
Reno, Nevada

January 21, 1974

Reese Canyon – Soil Samples – on Ridges in Anomalous Area

Cx - Copper – Biquinoline – by Carl Roan – 2/12/74

Sample sites - D1 thru D 21 – expressed in ppm



1" = 4,000'

1 : 12,000

REESE CANYON PORPHYRY COPPER EXPLORATION AREA: FINDINGS TO DATE

SUMMARY

Reese Canyon prospective porphyry copper target is located on a major NW-SE structural zone in which the Comstock, Como, Standard Slag, Weed Heights, and Pumpkin Hollow mineralized areas also occur at intervals. The Reese Canyon locale marks the next major structural intersection southeastward along the zone from Pumpkin Hollow.

The fundamental target in Reese Canyon is a two-mile long strong Cu geochemical anomaly located within a generally Cu-mineralized region.

Copper anomaly source is chalcopyrite and tenorite occurring at large in the Triassic Excelsior Fm as blebs and in veinlets of quartz-pyrite (goethite), and as occasional disseminations in silicified quartz monzonite and quartz monzonite porphyry. The quartz monzonite is the ultimate source of most of the mineralization, (including the Cu) in the Excelsior.

A prominent magnetic dipole occurs in aeromag data recorded over the canyon.

The considered target to be sought in Reese Canyon is a porphyry copper system at depth below or along side the indicated mineralization maxima of the area. A thorough investigation of the two principal maxima resolved within the anomaly area should be made, using induced polarization geophysics.

REESE CANYON

BACKGROUND

An initial geochemical orientation survey of stream sediments in the region surrounding Desert Minerals Company claims in the Wassuk Range indicated that maximum copper activity prevails in Reese Canyon northwest of Walker Lake.

Following up this indication Carl O. Roan, President of Desert Minerals, pursued geochemical prospection of the canyon using the biquinoline cold extraction method for Cu. Mr. Roan established a 2-mile long Cu anomalous regime along the complexly intruded and fractured north side of the canyon and terminating at the Walker Lake graben at the canyon exit. The anomaly has since been confirmed by AA analysis of his sample splits. Appendix A shows comparative values of the two methods for one sample batch.

AA analyses have indicated values up to 7500 ppm Cu for -80 mesh stream sediment and 895 ppm Cu for shattered rock fines over a 100-foot width.

Two particularly Cu-anomalous areas have been resolved, shown on maps I and IV here as Area A and Area B. The two are probably segments of a single mineralized zone separated by an intervening block of geochemically dead Quaternary terrace and late volcanics.

Maximum attention during the current study has been focused upon Area A which appears to be an area of intersection between major NE and NW trending structural zones.

REESE CANYON

REGIONAL STRUCTURAL SETTING

Reese Canyon is a segment of the "Walker Lane" mineralized structural zone. A number of important mineralized areas are distributed along this zone where it intersects north-south striking structural or topographic elements.

The Comstock Silver District is located on the east side of the Washoe Mtns at the projected intersection of Walker Lane with the N-S Davidson Fault Zone. Como Au-Ag District is located 12 miles SE of the Comstock, where the Walker Lane Zone passes through the N-S trending Pine Nut Mtns. Standard Slag Iron Mine is located 12 miles SE of Como at the intersection of the Walker Lane Zone with the east edge of the N-S Buckskin Range. Weed Heights Cu-Au mining area is located 8 miles SE of that at the intersection of Walker Lane Zone with the east edge of the N-S trending Singatse Range. The developing Pumpkin Hollow Cu-Fe exploration area is centered about 10 miles SE of Weed Heights. The Northern Lights - Black Mtn. Cu prospective area is about 8 miles SE of Pumpkin Hollow, and Hussman Spring Cu-mineralized area 2 miles SE of that.

Reese Canyon copper anomalous area is centered 14 miles SE of Pumpkin Hollow near the intersection of the Walker Lane Zone with the east side of the N-S Wassuk Range horst.

The Reese Canyon setting is the only major intersection of the above series which has not been extensively mined. Nor has it been extensively explored. The canyon is moreover of particular interest in that it appears to be the axis of a major structural dislocation. South of the canyon, the Wassuk Range trends N-S,

in conformity with the Walker Lake block fault. Abruptly north of the canyon, the Wassuks are trending NW-SE in conformity with the Walker Lane Zone itself.

Within Reese Canyon, structural patterns are complex. At its west end, the Reese lineament is dominated by the Walker Lane set, here N 50 W. At its east or exit end, the canyon bottom swings NE-ward, following a repetitive structural set of that orientation. The Walker Lane set maintains its SE lineation in the landscape of the south side of the canyon, climbing over low hills and ridges to the Walker Lake plain.

The exit end of Reese Canyon is flaired into a 3-mile wide triangle of low relief terrain in the ground lying between the two structural sets entering the canyon from NE and SE. Most of this area consists of a down-dropped polygonal block in which a disorderly section of late Tertiary or Quaternary volcanic flows and debris has been preserved. Ross calls this rock Esmeralda Fm. The roughly circular aspect of the area suggests a subjacent doming action such as by a forcibly intruding stock, a factor possibly relevant to Cu exploration in the area.

REESE CANYON

GEOLOGICAL SETTING

Reese Canyon is a roof pendent environment in which slightly metamorphosed basic volcanics, dirty black sediments, and rare black limestones of the Triassic Excelsior Fm are intruded on all sides by quartz monzonite (herecalled QM) and through the middle by lesser stocks and dikes of QM and QM porphryry(QMP).

The QM and QMP tend to follow narrowly along faults through the Excelsior and are preferentially mineralized by chalcopyrite, although dabs of chalcopyrite also occur widely through the Excelsior. The QM is subject to great variability in texture and composition from place to place, generally transforming to darker and finer groundmass and porphyritic textures the farther removed from its parent stock or fundamental intrusion site. Quartz diorite variants are seen and one float example of felty albite anorthosite was found above the Cu prospect area of Area A.

QM dikes have imposed hydrothermal effects upon the Excelsior local to the intrusion, effects to which the QM is itself subject, particularly with regard to Cu. Likely there has been a mass effect upon the whole Excelsior block by certain volatile-rich fractions of the surrounding QM batholith. On this premise the mineralizing activity of a nearby or near subjacent QM might be indicated by local hydrothermalism in the Excelsior. Two particularly volatile-active areas have been singled out by the current study, cited Areas A and B.

Other rock types in the area are post-mineral volcanics which do not figure

directly in the exploration thought except as indicators of gross structure. They will not be dealt with here. Much of the geology and geochemistry is masked by thick Quaternary terrace deposits on spur tops.

MAGNETICS

Map III submitted here shows aeromagnetic contours superimposed upon the Schurz 1:62,500 scale sheet. Reese Canyon contains a strong magnetic dipole of complex configuration and a relief of 156 gammas. Dipole maximum occurs immediately north of the Geri and Reese Claim blocks and probably relates to the main QM stock. Disseminated magnetite is seen associated with disseminated chalcopyrite in QM in the Reese Canyon bottom SW of Area A.

REESE CANYON

MINERALIZATION

Mineralization is allied with N 50 W and WNW structures in the west end of the canyon. The Mt. Everett mineralization core drilled in the Geri claims in 1972 is associated with a N 80 W Cu - $CaCO_3$-mineralized shear zone. The rivulet sediments draining off Mr. Everett across a width of about 600 feet run consistently 150 ppm Cu by AA. Background is about 40 ppm.

In midcanyon, near the intersection of the NW and NE fracture sets (where the Reese River shifts from a SE to a NE drainage) consistent N15W fracturing and faulting also carries mineral -- quartz-goethite (residual of pyrite), chalcopyrite, epidote, epidote-magnetite. All these minerals, including epidote, are associated with QM or QMP, which incline to follow fault zones narrowly. The minerals occur in both the Excelsior and the QM/QMP. Chalcopyrite most frequently occurs in the silicified QM.

In Area B the dominant mineralized direction is NE-SW, roughly parallel to the canyon in this area. The Excelsior Fm is generally more strongly mineralized (by quartz-goethite/pyrite with clay envelopes and epidote zones) than in Area A, and maximum geochemical relief in Reese Canyon is found here (7500 ppm Cu stream sediment). Aplite dikes distinguish the area. These strike generally parallel the canyon (N 40 E) and dip steeply southward. Pyrite-quartz veins are ubiquitous constituents of the Excelsior. Nowhere is a quartz vein seen unaccompanied by pyrite or goethite pseudomorphs after pyrite. Copper color or pitch

occurs sporadically. Very complex thin QMP intrusives cut through the formation.

Area A was chosen over Area B for initial study as the Cu-QMP textures appear the most promising and the most prominent Cu mineralization is exposed there. High geochemical values in the area are associated directly with the QM. While chalcopyrite - quartz - pyrite is widely distributed in the Excelsior, the most interesting and common Cu occurrences are the chalcopyrite and tenorite disseminations in the QM and QMP. The texture and siliceous alteration of this rock is similar to porphyry copper type occurrences.

Shattered, Fe-stained silicified and argillized aureolic rock showing strong Cu geochemical relief occurs on the southeast side of the Cu-active QM area. One thousand feet south of this, a QM stock occurs which has been intensely broken and kaolinized for over 4000 feet along the canyon bottom. Some local K-spar flooding occurs in this rock. Intensity of alteration increases westward. Near the westmost exposures, disseminated chalcopyrite and magnetite are seen in the QM which is strongly shattered and Fe-stained at this point and tending toward porphyritic texture.

A particularly engaging locale in AreaA is located 1500 feet SSW of the T 11 N / T 12 N corner (shown on Map I). Here a copper-mineralized silicified shear zone has been pitted in several places. The shear is about 10 feet or more wide, strikes N 50 W, dips 45 S. Movement was mostly normal. The hanging wall is Excelsior Fm, the foot wall is QM, which is widely altered adjacent to the prospect area. On strike southeastward, the QM has intruded along the fault

increasingly narrowly, perhaps indicating the center of intrusion to be in the prospect area. In that area, the QM has been mineralized by chalcopyrite, tenorite, calcite, quartz, and kaolinite in a texture not unlike Cu porphyry examples. A grab sample of dump rock from one of the pits analyzed 2.1 % Cu, 43g Ag. A subject of speculation here: what becomes of this Cu-porphyry textured mineralization down dip into the main body of the QM. The QM has clearly intruded along the fault, probably as a stringer rising off a larger body. The Cu - bearing solutions followed, selectively choosing to mineralize the QM. There are other such examples of disseminated Cu in QM or QMP in Area A. Map II, 100' = 1" scale, shows geological and geochemical details of the Cu prospect area.

The presence of strongly Cu-anomalous shattered aureolic silicified rock in the vicinity of such Cu-mineralized QM is encouraging. A 100-foot long sample of pulverized rock fines taken from an exposure in a bulldozed road cut ran 895 ppm Cu (by AA). An adjacent cut 100 feet east of this ran 180 ppm Cu (AA) over a 30-foot width. The next such exposure, 900 feet further east ran off the biquinoline cx scale (200+ ppm). The sample is currently submitted for AA analysis. It is to be noted that the 895 ppm AA result compared with 150 ppm by cx. Apparently the Cu is in a form not available for cx extraction.

The Area A geology and geochemical details at 1"=500' are shown on Map I.

An interesting feature in the Cu-fault zone area: just as the mineralized QM

REESE CANYON

dike diminishes in width along the fault away from the maximum mineralized area eastward, so the quartz mineralization along the fault changes from rock-annealing silicification in the prospect area to low temperature, free, white vein quartz westward away from the area. The impression is thus gained that the Cu prospect area is located in a maximum temperature zone over a center of intrusion, and that Cu is therefore associated most closely with intrusion loci.

David K. Jordt
Geologist
January 21, 1974

ENCLOSURES WITH THIS REPORT

1. Appendix A. Sheet showing comparison of AA and Roan's cx values for Cu, on sample splits.
2. Appendix B. A report by Cooke, Everett, & Assoc, Feb 19, 1973, summarizing history and property details of the Desert Minerals claims and claim area.
3. Map I. 1" = 500' scale. Geology and geochemical sample analyses of parts of Reese Canyon.
4. Map II. 1" = 100' scale. Geologic and geochemical details of the Area A Cu-prospect area.
5. Map III. 1:62, 500 scale. Aeromagnetic contours of Schurz Quadrangle.
6. Map IV. 1:24, 000 scale. Primary geochemical patterns (stream sediment), of Reese Canyon.
7. Map V. 1:12, 000 scale. Fundamental geochemical sample plan of Reese Canyon.

xxxxxxxxxx
.05 N. Center St.

12/73

COPPER -Cx - biquinoline by Carl Roan

sample site	ppm	AA by Rocky Mtn Geochem
B-1	180	135
B-2	150	120
B-3	200+	175
B-4	150	155
B-5	120	100
B-6	105	105
B-7	120	130
B-8	75	85
B-9	60	55
B-10	90	65
B-11	200+	170
B-12	90	70
B-13	90	85
B-14	90	65
-15	60	25
B-16	75	55

APPENDIX A

COMPARISON OF PPM VALUES
OBTAINED ON SAMPLE SPLITS
BY ATOMIC ABSORPTION AND
BIQUINOLINE cx (ROAN)

APPENDIX B

PROGRESS REPORT:
PADRE, REESE, AND GERI CLAIMS

Cooke, Everett & Associates Inc.

Report No. 267

February 19, 1973

Progress Report

PADRE, REESE & GERI PROPERTIES

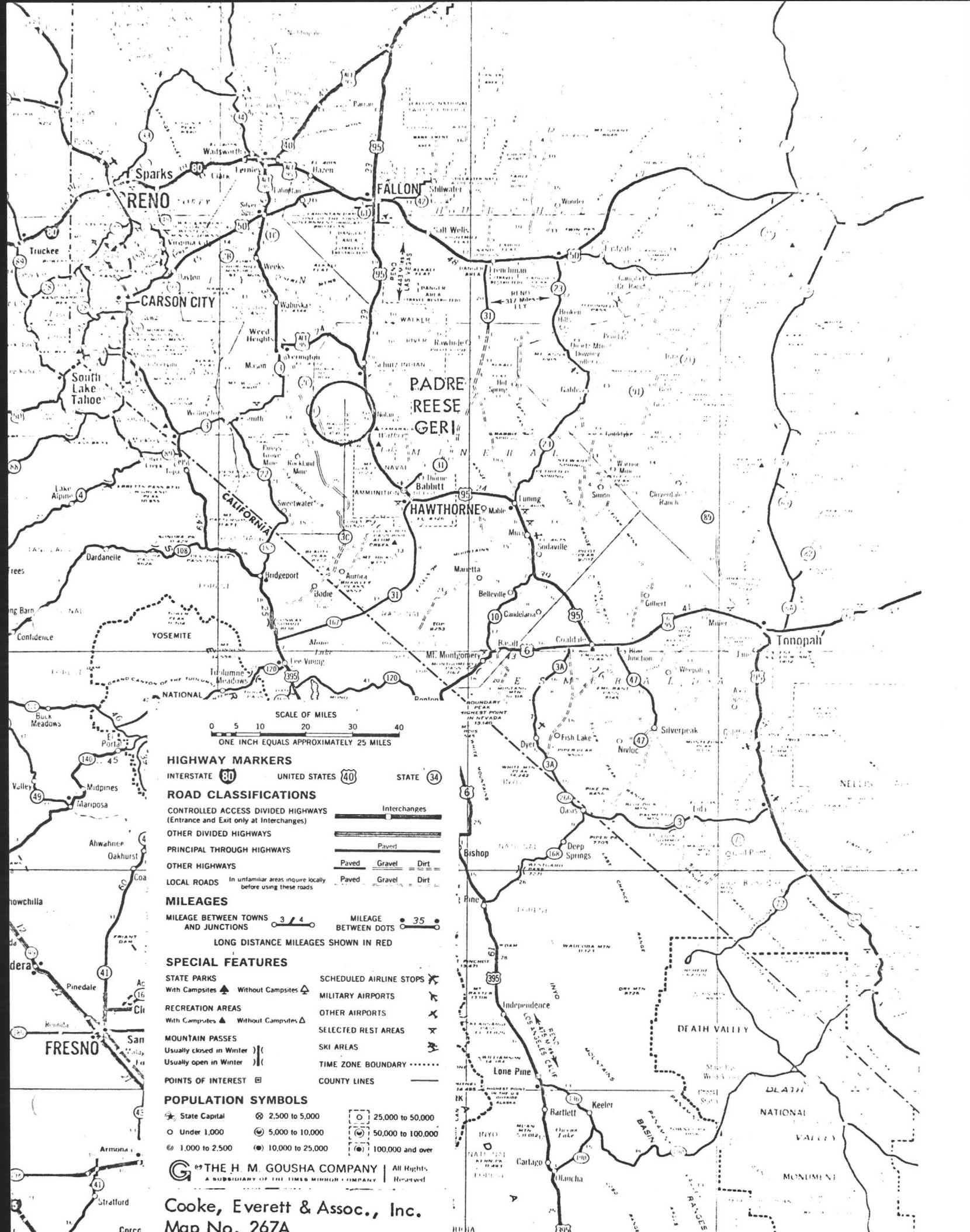
Mineral & Lyon Counties, Nevada

February 19, 1973

TABLE OF CONTENTS

	Page
Summary	1
Introduction	1
Location	
Site	1
Access	2
Topography	2
Climate	2
Biota	3
Water supply	3
Property	
Claims	3
Desert Minerals Corp.	4
Mining and exploration	
History	4
Current	
Other companies	5
Desert Minerals Corp.	
Pumpkin Hollow	6
Roan	7
Reese	8
Padre	8
Geri	8
Geology	
Regional geology	
Maps	8
Virginia City - Tonopah trend	9
Ore deposits	
General	
Types	10
U.S. Steel Co.	10
Desert Minerals	
Padre	11
Reese	12
Geri	14
Conclusions and recommendations	
General	14
Reese-Geri	15
Padre	15
Iron deposits	16
ERTS photos	16

Map 267A	Location map	Front
267B	Geology, Padre-Reese-Geri area	Back



Cooke, Everett & Assoc., Inc.
Map No. 267A

COOKE, EVERETT & ASSOCIATES, INC.
CONSULTING GEOLOGISTS

421 COURT STREET
THIRD FLOOR

P. O. BOX 2992
RENO, NEVADA 89505, U. S. A.

TELEPHONE (702) 323-8254

February 18, 1973

Progress Report
PADRE, REESE & GERI PROPERTIES

Report No. 267

Mineral & Lyon Counties, Nevada

SUMMARY

The exploration done on the Padre, Reese and Geri properties is reviewed, together with other recent mining activity in the Yerington district. The regional geology and mineralization is discussed in the light of the work done thus far, along with recommendations for future work.

The geologic setting of these properties, near the intersection of the Virginia City - Tonopah mineralized structural trend with the Wassuk granitic fault-block, certainly is a favorable one for large ore deposits. Copper mineralization has been found on all three properties, and the continuing exploration has good prospects for developing commercial ore.

INTRODUCTION

This report summarizes the results of work done by Cooke, Everett & Associates, Inc. for Desert Minerals Corp. on the Padre, Reese, and Geri properties, as well as that by Carl O. Roan. Cooke, Everett & Associates' work was done at intervals during July 5, 1972 to the present, by David K. Jordt, C.A. Everett, and H.R. Cooke, geologists, and A.L. Larson, geophysicist, all of whom have contributed to this report.

This work is continuing, both by Carl Roan and by Cooke, Everett & Assoc. Results of the various surveys made will be augmented, and are likely to be modified by forthcoming information. Therefore the considerable accumulation of work maps and data now at hand is not included in this report, which is intended primarily to review the present status of

investigations and make recommendations for further work.

LOCATION

SITE

The three subject properties are located in Mineral and Lyon counties, NV, in the Wassuk Range (Maps 267A, 267B; also refer to USGS topographic map, Schurz quadrangle). Padre is in unsurveyed ground except for a small strip on its west side in Township 11 North, Range 27 East, Sections 12, 13, Mt. Diablo Baseline & Meridian. Reese is about 4 miles NE of Padre, also in unsurveyed ground except for its NW corner, which is in T12N, R28E, Sec. 34. Geri is contiguous with the SW side of Reese, also in unsurveyed ground.

ACCESS

The three properties are reached from Yerington, the nearest large town, by driving 7 miles S on Nevada Highway 3, then about 18 miles E on improved gravel or dirt roads (see USGS topographic maps, Yerington and Schurz quadrangles). They can also be reached from US Highway 95 by turning W between Schurz and Hawthorne on good dirt roads up Reese R. Canyon or Penrod Canyon.

The Southern Pacific railroad passes through Schurz, 9 miles by road N of the Reese claims, and also runs through Wabuska, 11 miles N of Yerington. Yerington has an airport, and Schurz a landing strip.

OPO-
RAPHY

Padre lies at the W base of the Wassuk Rg. at 5800-6400 ft altitude. Most of it is on a gently W-sloping alluvial surface, dissected by WNW-running ravines. Reese and Geri are on the E side of the Wassuk Rg. divide, in the ESE-running Reese R. Canyon at 5200-6300 ft altitude. The canyon is floored by stream gravels and sands, with moderately rounded slopes rising on both N and S sides.

.IMATE

Summers are hot and dry, except for occasional afternoon thunderstorms, with

maxima of around 100°F. Winters are cold, with light snows, and minima of around 0°F. The snows generally melt within a few days. Annual precipitation is 10-15 inches.

BIOTA

Sagebrush, buckbrush, shadscale, and other desert bushes cover the flats and lower slopes; scattered pinyon pines grow on the upper slopes, which increase above 7,000 ft altitude on Bald Mtn. to a fairly heavy stand of mixed pine and juniper. Wildlife is scarce - mainly lizards, rattlesnakes and other snakes, rabbits, gophers, hawks, eagles, and various small birds. Fresh mustang trails cross the Padre, and Roan said he has often seen small groups of mustang there.

WATER SUPPLY

Except for intermittent rain and snow run-off in the many ravines (dry washes), surface water occurs near the subject properties only in a few small springs whose flow is ponded or tanked for cattle: near Padre are the Buckbrush, Summit and Abraham springs; near Reese-Geri are Cottonwood Springs (now reported to be nearly dry), and an unmapped spring in a side canyon above Cottonwood Springs. Water for drilling, induced polarization surveys, or other exploration can be obtained from these springs. Sufficient water for a large mining operation might be obtained from springs in the Wassuks or wells in valley fill alluvium W of the Wassuks. Water is also available from Walker Lake or Walker R., 5-7 miles E of the Reese claims, but 1,500 ft lower. Rather than pipe water to the mine, however, it might be preferable to locate the mill near one of these sources of water.

PROPERTY

CLAIMS

The Reese and Padre groups of claims are owned by Desert Minerals Corp. The Geri group is located in Carl Roan's name for expected transfer to Desert

Minerals Corp. Their location is shown on attached Map 2672.

The Reese group consists of a rectangular block of 30 unpatented lode claims. Reese, and Reese 1-29, recorded in 1965 in the Mineral Co. Recorder's office in Hawthorne for Desert Minerals Corp. Proofs of labor for 1971-72 were recorded on June 21, 1972 in Book 31, p. 307.

The Padre group consists of a block of 22 unpatented lode claims, Padre 1-22, recorded in 1972 in the Mineral Co. Recorder's office under Desert Minerals Corp., in Book 31, pp. 308-329.

The Geri group consists of a rectangular block of 10 unpatented lode claims, Geri 1-10. The location notices were posted on Dec. 16, 1972, and have not yet been recorded.

No known liens or encumbrances exist on any of these claims.

DESERT MINERALS CORP.

Desert Minerals Corp., 205 North Center St., Yerington, Nevada 89447, was incorporated in Nevada on August 19, 1960 for 500,000 shares of $1 par value, of which 250,000 shares were held in escrow; to date, about 140,000 shares have been issued. The officers of the company are:

Carl O. Roan	President
Robert Sanford	Vice-President
Geraldine Roan	Secretary-Treasurer
Eugene Johnson	Director
Ray Aiazzi	Director

MINING AND EXPLORATION

History

Since its first recorded shipments to Virginia City silver smelters in 1865, the Yerington district has been a major metal producer. In recent years copper

has been dominant, along with important iron, some lode and placer gold, silver, and various nonmetallics such as gypsum, sodium sulfate and limestone. The early copper production came from several contact metamorphic deposits and from veins, totalling well over 100 million pounds of copper, or $50 million at present prices. In recent years, the $15 million annual production from the Weed Heights open-pit porphyry copper mine of Anaconda Copper Co., 2 miles W of Yerington, has overshadowed the earlier mining. It mines about 24,000 tons/day of ore - 11,000 tons sulfide ore, and 13,000 tons oxide ore - and probably at least this much waste. Ore grade cut-off is about 0.3% Cu.

Major iron production was made for many years from the Minnesota open-pit of Standard Slag Co., 15 miles NW of Yerington, but this mine was recently shut down.

The mining history and geology of the Yerington district are discussed in the following publications:

- Knopf, A. - Geology and ore deposits of the Yerington district, Nevada - U.S. Geological Survey Professional Paper 114, 1918.
- Lincoln, F.C. - Mining districts and mineral resources of Nevada - Nevada Newsletter Publishing Co., Reno, NV, 1923.
- Stoddard, Carl & Jay Carpenter - Mineral resources of Storey and Lyon counties, Nevada - U. Nevada Bul., Geol. & Min. Series, No. 49, March 1950, pp. 83-95.
- Ross, D.C. - Geology and mineral deposits of Mineral Co., Nevada - NV Bur. Mines, Bul. 38, 1961.

Current

OTHER COMPANIES

Many major companies have recently been looking for mineral deposits in the Yerington-Wassuks area, and it continues to be one of the hot spots in U.S. mining exploration. Practically all of the ground E from U.S. Steel Company's holdings to Desert Minerals ground has now been staked. U.S. Steel acquired

several hundred claims in Pumpkin Hollow, about 5 miles SE of Yerington, including ground from Desert Minerals, and during 1961-71 staged an extensive and apparently successful campaign in deep drilling for iron and copper. In February, 1973, its drilling was reported to have resumed.

In 1972, Phelps Dodge Corp. and Anaconda Copper Co. were exploring 4 miles E of U.S. Steel's ground, and in January 1973 were reported to be active near Desert Mineral's ground. Phelps Dodge recently has requested a drilling option on the Yerington sewage plant ground on the N edge of town, and is reported to have found large iron reserves on the nearby Conolly Ranch. In 1972, Getty Oil Co. and American Smelting & Refining Co. were reported to be drilling in the Black Mtn. area, about 6 miles N of the Reese-Geri claims. Bear Creek Mining Co. (Kennecott Copper Corp.) drilled the neighboring Northern Lights mining area for two years in the mid-'60s, and now another company is reported to be drilling there. A Utah group is reported to be drilling the old Blue Jay mining area, 4 miles E of Yerington. A Nevada company is reopening the Sunny Slope gold mine, 3 miles SSE of Padre.

DESERT MINERALS CORP.

Desert Mineral's properties are described in the following reports:

- Desert Minerals Iron Property - Cooke, Everett & Assoc., Inc., Report 159, Nov. 5, 1960.
- Notes on Magnetic Map, Desert Minerals area - CEA, Report 159, Supplement, Jan. 5, 1961.
- Desert Minerals Property (Roan claims) - CEA Report 169, Dec. 15, 1963.
- Desert Minerals Corp. (Roan claims) - CEA Report 169 Supplement, April 1964.
- Desert Minerals Properties, Reese Canyon Group - Carl O. Roan, 1965.

Pumpkin Hollow

In addition to its property described herin, Desert Minerals Corp. has 79 claims in Pumpkin Hollow under lease to U.S. Steel. These claims were staked

and recorded during 1960 by Carl Roan and other members of Desert Minerals Corp. Cooke, Everett & Assoc. examined them for Desert Minerals, and submitted a report on Nov. 5, 1960 recommending a magnetic survey. This was carried out by Cooke and Everett, and the results submitted in our report of Jan. 5, 1961, written in collaboration with Prof. James I. Gimlett, geophysicist at the U. of Nevada. In 1965, Freeport Sulphur Co. (now Freeport Minerals Co.) took an option on the ground, increased the claims to 174, and drilled three 1,000-ft holes. In the same year, induced polarization surveys were run there by Geoventures and W.S. Moore Co. in a joint-venture, and by American Smelting & Refining Co. On the basis of this exploration, Desert Minerals' claims were reduced to 79. In 1967, U.S. Steel took a 2-year option for a 50-year lease, granting Desert Minerals 5% royalty on net smelter returns, and $0.25/ton on any iron produced. It reportedly drilled both iron and copper mineralization, and in 1969 exercised its option.

Roan

Desert Minerals also staked a block of 41 claims, known as the Roan group, in the Gray Hills, 2 miles NW of Padre. This ground was drilled by two rotary holes, 200 and 300 ft deep, respectively, and an IP survey was run by McPhar Geophysics Ltd. which found a N-striking anomaly just E of the Gray Hills. Pan Minerals, Inc. optioned the property, and is reported to have drilled one 1500-ft vertical hole in unmineralized ground, apparently missing the target area. It relinquished its option, and Desert Minerals later dropped the claims. These claims were described in Everett's reports of Dec. 15, 1963 and May 10, 1964.

Reese

In 1965, the 30-claim block in Reese R. Canyon known as the Reese group was located for Desert Minerals by Carl Roan. On the basis of systematic geochemical and geophysical surveys run by Roan, a 460-ft vertical hole was drilled on the IP anomaly but off the geochemical anomalies. It encountered mainly pyritic mineralization, rather than copper.

Padre

The Padre block of 22 claims was located in 1972 by Carl Roan for Desert Minerals. He then ran systematic geochemical and IP surveys over the entire block. Since July 1972, Cooke, Everett & Assoc. have done further geochemical and geologic surveys there.

Geri

In late 1972, Carl Roan located the Geri block of 10 claims on the basis of copper mineralization found by Cooke, Everett & Assoc. and himself, and began a grid geochemical survey.

GEOLOGY

Regional Geology

MAPS

Map 267A shows the location of the subject properties, and Map 267B shows the regional geology. Two U.S.G.S. aeromagnetic maps cover this region: Sheet 18 (Nevada Bureau of Mines No. 89) - The Schurz, Gillis Can., Mt. Grant & Hawthorne quadrangles, NV - Nov. 1967; and Sheet 19 (NBM No. 40) - The Wellington, Yerington, Desert Creek Pk. & Pine Grove Hills quadrangles, NV - CA - Nov. 1967.[1]

GEOLOGIC HISTORY

The oldest formation present, the Excelsior, consists of some 8,000-10,000

1 - These maps, on open-file in the NBM, are preliminary and unedited. They were flown at 9,000 ft altitude by Lockwood, Kessler & Bartlett, Inc. Due to the considerable height above ground, only very gross magnetic features were recorded.

ft of Triassic (and ¿Permian?) interbedded volcanic and sedimentary rocks. This was deformed in Nevadan time and intruded by Cretaceous granitics,[2] which contact metamorphosed the Triassic roof rocks[3] and formed the copper, iron and other metalliferous deposits. Subsequent erosion during the early Tertiary removed much of the Excelsior, and locally ate down into the subjacent granite. In late Tertiary-Quaternary time, this erosion surface was covered by up to several thousand feet of volcanics, generally starting with felsic welded tuffs, followed by flows of intermediate (andesitic) composition, then by mafic (basaltic) flows. Pleistocene and Recent block faulting later uplifted the Wassuk Range along major frontal faults on its E (Walker L.) side, possibly tilting it to the W as was the probably consanguineous Sierra Nevada. Fault uplift and erosion of the higher blocks continued to the present, exposing the underlying granite, as in the Wassuks.

VIRGINIA CITY - TONOPAH TREND

A major regional lineament has been widely recognized, mainly by the alignment of many important mineral deposits along it, by breaks in geologic structures, and by its topographic expression as gaps across intervening ranges: this is the WNW-trending Virginia City - Tonopah trend, along which occur the Minnesota Pit, Weed Heights, Pumpkin Hollow, and many other mineral deposits. This structure appears to cross the Wassuks along Reese R. Canyon through the Reese and Geri claims. Aeromagnetic map, sheet 18 shows a regional NW lineament of relatively low magnetic relief cutting across the high and irregular

2 - The granitics range in composition from granodiorite to albite granite but most commonly are quartz monzonite. Near contacts, more basic hybrid phases may develop due to ingestion of such country rock constituents as iron, magnesia, potassium or calcium. The usual field term, granite, is used here to designate any or all of these plutonic intrusives.

3 - Widespread epidote distinguishes the Excelsior volcanics from Tertiary intermediate volcanics.

magnetic relief of the Wassuks granite on either side.

Ore Deposits

TYPES

General: The metallic ore deposits of the Yerington district clearly are related to the Cretaceous intrusives; regardless of how much of the metal was derived from them, at least their heat and hydrothermal-pneumatolytic emanations mobilized the metals that later were deposited on cooling and decreased temperature as commercial concentrations in and near the granite. Four types of metallic deposits occur here:

1. Porphyry copper deposits: Weed Hts., where chalcopyrite and other copper minerals occur in veinlets and specks in the cupola of a granite stock; low-grade but immense tonnage.

2. Contact metamorphic (pyrometasomatic) deposits: supplied the bulk of the early copper production (until Weed Hts.) as well as Standard Slag's Minnesota iron deposit and, apparently, the U.S. Steel iron and copper deposits in Pumpkin Hollow; mainly replace limestone along favorable beds near the granite, or form irregular cross-cutting bodies; may be of good grade and large tonnage.

3. Stratiform Cu-Zn-Pb deposits: in metavolcanic or metasedimentary beds, as at Red Canyon in the Pinenut Rg.; may have fair grade and large tonnage due to persistence on strike and dip.

4. Fissure and vein deposits: many old mines in the granite or country rock, generally along faults; may be high-grade but usually small tonnage.

U. S. STEEL CO.

Informally reported results of the deep U.S. Steel drilling in Pumpkin Hollow indicate that a large iron tonnage, some carrying commercial copper, was found on the W side of the basin in three block-faulted beds, whereas the main copper ore was found on the E side of the basin in a later NNW-striking body apexing 240 ft below the surface. All the mineralization is reported to be in limestone or underlying volcanics of the Excelsior formation. The iron deposits are believed to have been indicated by a strong magnetic anomaly, and the copper

found during drilling for the iron. The strongest high on the aeromagnetic map (Sheet 19) +3028 gammas, is located here.

PADRE

Desert Minerals: These claims lie along the W contact of the granite with flanking Excelsior metamorphics, and extend W unto W-dipping Quaternary alluvium. Weathered granite bedrock appears to be exposed in some ravine bottoms, suggesting that the alluvium is only a thin veneer on a W-dipping dissected pediment surface cut across the granite and flanking metamorphics. In the NE part of Padre the Excelsior beds seem to strike N and dip steeply, and are contact metamorphosed, showing red earthy hematite, jasper, and brecciated areas cemented by quartz veinlets. Several small old shafts and adits expose N-striking veins, possibly bedding controlled, which carry iron, manganese and copper oxides, quartz and calcite, with some residual pyrite and chalcopyrite. Sampling to date shows only low-grade gold, silver and copper. However, their proximity to the granite contact on the E suggests that they may represent leakage from deeper, more important contact mineralization.

Several hundred feet E of Padre, in the granite, a flatly W-dipping vein and breccia zone has been prospected by a small shaft and winze. Its lack of obvious copper or other mineralization suggests that gold was sought.

Systematic copper sampling by cold extraction (cx) biquinoline solutions was carried out by Carl Roan over the whole Padre block. Soil samples were taken at 300-ft interval along N-S lines 600 ft apart. Geochemical relief ranged only up to about 40 ppm, mainly in the N part of Padre. Jordt, Cooke, and Everett also sampled Padre for total heavy metals (THM - Cu, Pb, Zn, Ag, Ni, Co, Sn) by dithizone (diphenylthiocarbazone) cx, and by heavy minerals

(HM - density greater than bromoform, ±2.89 s.g.) stream sediment. Our results corroborated the low geochemical relief found by Roan. However, our HM sample CR-20, taken from a major ravine 4 miles NW of Padre, showed relatively high copper - 42 ppm. A large drainage area is represented by this sample, including the Padre, and westward drainage N to the Reese R. watershed. Since only low values were found in the Padre drainage, the source of the CR-20 anomaly seems to be in the W-running tributaries N of the Padre.

Induced polarization surveys were run by Roan on two NE-bearing lines in the N part of Padre, using variable frequency equipment and the Wenner array at 300-, 600-, and 900-ft electrode separations. Pending further calibration and field testing of his equipment, which was made by himself, interpretation of the IP surveys is deferred.

REESE

Carl Roan's 1965 report to Desert Minerals on the Reese group summarized current knowledge, including his geologic, geophysical and geochemical surveys there. Cooke, Everett & Assoc. are now studying this property, but to date have done only brief reconnaissance work on it.

The Reese claims are in the Reese R. Canyon, which drains E to Walker L. This conspicuous gap through the Wassuks probably is fault-controlled by a major WNW-striking structure. The bottom of the canyon is covered by Recent stream alluvium, but exposures on both sides show Excelsior metavolcanics faulted, brecciated, and cut by dikes from the granite. Alteration is locally conspicuous as silicification or chloritization, often with copper oxides, partly limonitized chalcopyrite and bornite, and quartz veinlets. A surface sample taken by Roan from mineralized shale ran 10.0% Cu, and one from malachite-stained granite

porphyry ran 2.5% Cu, but neither sample ran detectable gold or silver. Both mineralized and unmineralized structures appear to strike WNW or W.

Roan took geochemical samples at 300-ft interval along lines 500 ft apart for biquinoline extraction by Geoservices in Tonopah. Copper was found to range up to 80 ppm in the NE part of the Reese group. Sampling on Line A was repeated at 50-ft interval, and appeared to corroborate the anomalies found by the 300-ft sample spacing. Roan also ran geophysical surveys with a Jalander magnetometer, using the 300-ft sample points for readings, which showed a range of 1200 gammas in the E part of the property, from -600 to +600 gammas. He ran an IP survey on Line A at 300- and 600-ft electrode separations, and on part of Line 3N at 200-, 400- and 600-ft separations.

On the basis of these surveys a vertical drill hole was collared on an IP anomaly on Line 3N at 4850N, between two geochemical highs. Roan reported that the hole cut fractured, brecciated and pyritized Excelsior metamorphics, with chalcopyrite veinlets and fine-grained magnetite, but with no commercial mineralization. The hole was therefore stopped at 468 ft depth. The core was stored in Yerington, but sometime during the late 1960's it was discarded and lost, apparently by someone unacquainted with its value for Desert Minerals Corp. The IP anomaly evidently was caused by the pyrite. Higher copper values may be found laterally under the geochemical copper anomalies.

Our geochemical survey showed highest values in sample CR-3, of stream sediments in Reese R. Canyon near the E line of the Reese claims, giving 75 ppm Cu in HM, and 4.5 ml (roughly corresponding to 100 ppm) THM in cx dithizone solution. The drainage supplying these samples includes most of the Reese and

Geri claims.

GERI

Copper mineralization was found here in July 1972 by Everett, and traced for several hundred feet by outcrop and cx dithizone sampling. Roan found more copper mineralization and alteration nearby, and located 10 claims here on [illegible] 16, 1972. These claims abutt the SW line of the Reese group and, like the Reese, straddle the granite-Excelsior contact.

A biquinoline cx survey for copper was begun by Roan, but weather has permitted sampling to date of only about one-third of the claim block. However, one sharp anomaly, of over 75 ppm Cu, was found near the NW corner of the claims.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

The Padre, Reese and Geri properties obviously are located in "elephant country", as evidencedby the major producing mines in the Yerington district, and active exploration by both small and large companies. The prospecting by Carl Roan,and his careful and systematic geophyscial and geochemical surveys on the properties staked are an unusual asset for Desert Minerals Corp., and an invaluable basis for continuing exploration and development. Particularly notable is the IP equipment which he made himself. IP receivers are among the most delicate and complex types of geophysical instrumentation, and are made commercially by only a few sophisticated electronics houses. So far as I know, the only home-made IP unit is by Roan.

An additional asset to Desert Minerals now is Everett's jeep-mounted diamond drill, which he recently brought to Yerington and left for use by Carl Roan. It is small and highly mobile, and has a present capability of 300-350 ft vertical or-

angle holes, BX or smaller core.

The exploration in progress may considerable modify present mapping and opinions, so it would be premature to advance final conclusions now. The work to date has discovered promising copper mineralization on the surface, and evidence for subsurface mineralization on all three groups of claims.

REESE-GERI

On the Reese-Geri claims, as Roan's report (1965) pointed out, the likely locii for ore deposits along the WNW fault system in Reese R. Canyon should be mapped, along with the dikes and granite contacts, followed by detailed geochemical and geophysical surveys. The known mineralization in outcrop and geochemical copper anomalies should be opened up by bull-dozer or ripper trenches, then, if favorable, probed by shallow drilling, using Everett's drill. It is not expected that major copper mineralization will be met in such shallow holes, but statistical study of geochemical changes in the core with depth should show metal zoning and where such major copper deposits may be located.

The highest priority geochemical target found in our sampling is in the Reese-Geri drainage basin above sample CR-3. The source(s) of this copper anomaly should be followed up by sampling the nine tributaries above this sample.

PADRE

Present geophysical, geochemical and geologic evidence indicates that any major mineralization here is likely to be at considerable depth, perhaps several thousand feet. Further exploration for this can therefore best be deferred pending results of the surveys and shallow drilling on Reese-Geri ground. However, the source of copper in the anomalously high HM sample, CR-20, 4 miles NW of Padre, should be sought by sampling the six tributary ravines above it. Also, some

HM samples from drainage from the Northern Lights mining district should be useful for comparison.

The copper mineralization and silica-cemented breccia in the contact zone near the NE corner of Padre should be further studied and sampled, and followed on its trend across unclaimed ground toward the Reese-Geri claims.

IRON DEPOSITS

The possibility of large contact metamorphic iron deposits, such as U.S. Steel has drilled in Pumpkin Hollow, should be kept in mind. The USGS aeromagnetic maps do not show any obvious large anomaly in the Wassuk granite contact zone like that at Pumpkin Hollow, but important iron deposits could exist in the Wassuks without registering on the aeromagnetic survey, since it was flown at 9,000 ft altitude, or 3,000 ft above the Desert Minerals properties. Ground magnetic surveys, like that run by Roan on the Reese claims, should be extended over the Geri, and later over Padre, and possibly over the intervening open ground.

ERTS PHOTOS

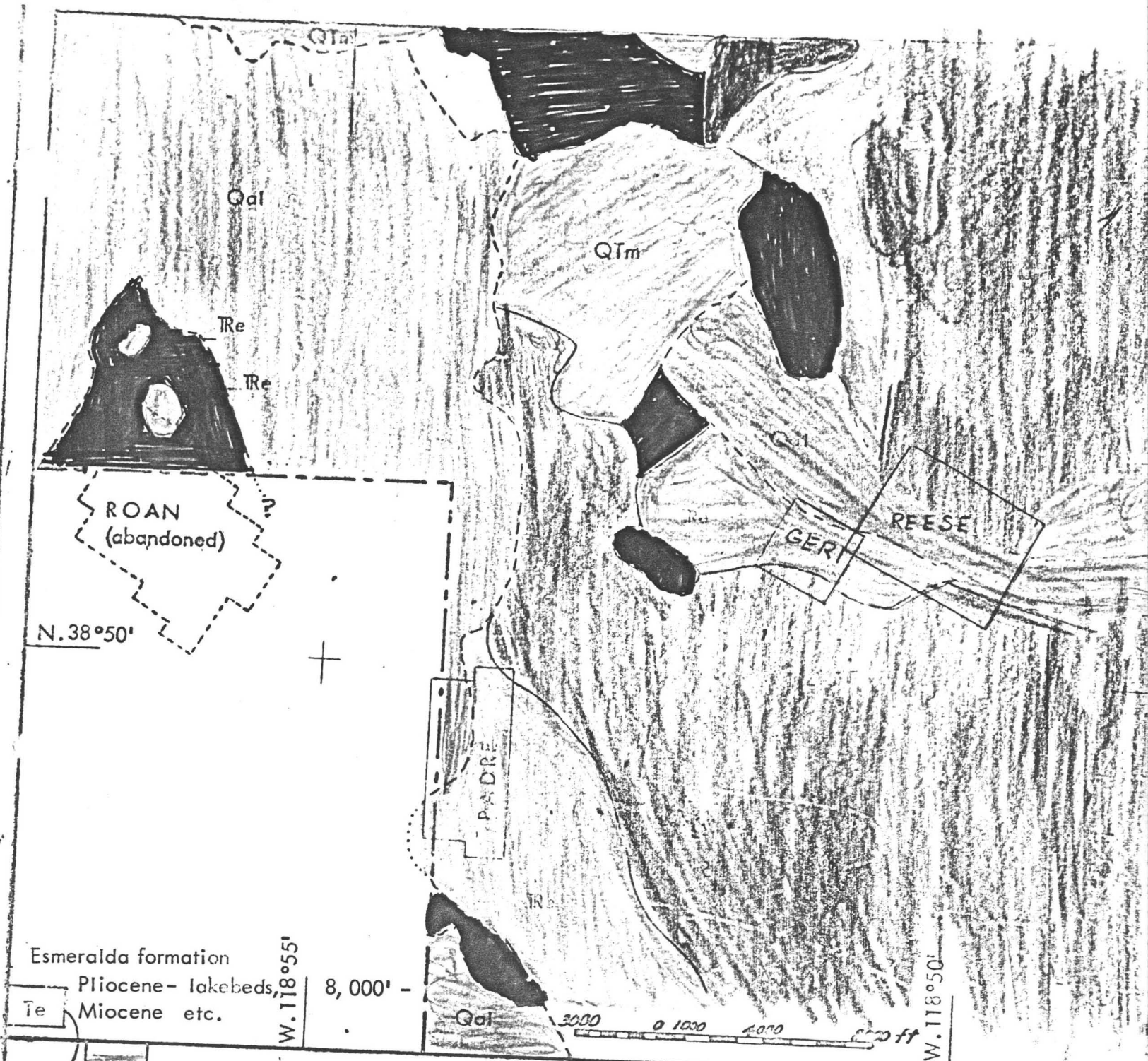
The new ERTS (satellite) photos are now available, or soon will be. We have ordered complete multiband coverage for the Desert Minerals area. These are taken at about 500 miles altitude, so are on very small scale - about 1/1,000,000 (enlarged from 70 mm to 7.5 x 7.5 in image size). However, each photo covers an area of about 100 x 100 square miles, so may show regional structures not obvious on lower-altitude photos.

COOKE, EVERETT & ASSOCIATES, INC.

H R Cooke Jr

Dr. H. R. Cooke, Jr.

Reno, Nevada February 19, 1973



Esmeralda formation

Te — Pliocene- lakebeds, Miocene etc. — 8,000' –

			Thickness, feet
Qal	Quaternary alluvium	valley fill, etc.	
QTm	Quaternary--Tertiary	mafic volcanics	1,000 –
	Tertiary ¿Pliocene?	intermediate volcanics	1,000 –
	Tertiary ¿Pliocene?	felsic volcanics; rhyolitic welded tuff, etc.	2,000 –
Kg	¿Cretaceous	granitic intrusives; quartz monzonite, etc.	
	Triassic ¿Permian?	Excelsior formation; intermediate & felsic flows, tuffs & breccias, interbedded limestone, quartzite, shale, gypsum	10,000±

PADRE, REESE & GERI
Mineral & Lyon Counties, NV

Scale: 1/62,500

Map base: USGS Schurz, NV quadrangle, 1962-1964, 1/62,500

Geology: modified from R[illegible] NV Bur. Mines, Bul. 5[illegible] 1:250,000

Drafting: H.R. Cooke

For: DESERT MINERALS CORP.
Yerington, Nevada

By: COOKE, EVERETT & ASSOC., INC.
421 Court St.
Reno, Nevada 89501

Map No. 267B

COOKE, EVERETT & ASSOCIATES, INC.
CONSULTING GEOLOGISTS

421 COURT STREET
THIRD FLOOR

P. O. BOX 2992
RENO, NEVADA 89505, U. S. A.

TELEPHONE (702) 323-8254

REESE CANYON, NEVADA

Supplement to Report 275 J, January 21, 1974

RECOMMENDED INDUCED POLARIZATION SURVEY

Background

A two mile length of Reese tectonic canyon is strongly anomalous in copper. Tributary stream sediment values range to 555 and 7500 ppm Cu (by AA). Average is between 100 and 200 ppm Cu over surrounding background of under 35 ppm. Field evidence suggests a porphyry copper environment is at hand.

The possibility has been considered that this geochemical activity represents only remobilization in the Triassic Excelsior volcanics and shales; however there is an undeniable positive correlation of Cu values local to quartz monzonite and quartz monzonite porphyry intrusives which have imposed marked hydrothermal effects upon both Excelsior formations and the plutonic rocks throughout the canyon. The strongest showing of Cu in fact occurs as a dissemination in the quartz monzonite itself where it has intruded along a member of the Walker Lane fault zone coursing the north flank of Reese Canyon.

Four I.P. lines have been designed to investigate specific locales of intense deformation and mineralization and coincident Cu activity as well as the overall span of the two mile long Cu geochemical anomaly.

Recommended I.P.

Recommended lines are shown on the overlays of Maps I and IV of Report 275 J. Either time or frequency domain I.P. could be used depending on availability.

1. Lines A, B and C: 1000 ft separation, 500 ft electrode spacing, N 28° E bearing, each line 4500 ft long; 13,500 ft total length.

   Line A: Explores the footwall of the copper-mineralized fault, shown in Map II, between the two principal copper-bearing outcrops. On the footwall of the fault a dike-like body of quartz monzonite intruded. It was then argillized and silicified, and pervasively mineralized by disseminated copper, now showing in outcrop as copper pitch.

Field evidence suggests the quartz monzonite porphyry was the copper source. It is interpreted to have invaded along a wide front, striking the fault at depth and intruding narrowly along it for a relatively short distance before congealing and precipitating its copper in situ.

   Line B: Tests the southeast extension of the mineralized fault targeted in Line A. The quartz monzonite porphyry shows here also as a dike along the fault, and is locally mineralized and prospected. Adjacent county rock shows high Cu geochemical relief. Line B extends southwestward across canyon bottom outcrops of argillized and Cu-active quartz monzonite porphyry.

   Line C: Centered approximately over the copper-mineralized brecciation noted on Map I. The 100-ft channel rock sample here recorded 895 ppm Cu by atomic

absorption analysis. The southwest end of this line extends across strongly argillized quartz monzonite in the canyon bottom.

2. Line D: 1000 ft electrode spacing, N 64° E bearing, extending 15,000 ft along the north flank of the canyon. Designed to traverse the full length of the geochemically active zone, crossing directly over major geochemical anomalies and zones of alteration and brecciation. It will also serve as a tie-in line between lines A, B, and C.

David K. Jordt

David K. Jordt

Reno, Nevada
June 14, 1974

Note —
2 other lines, Lines E & F, 4500' and 9000' respectively, designed to explore priority established anomalies, mineralized and structurally favorable areas are added on Map I.