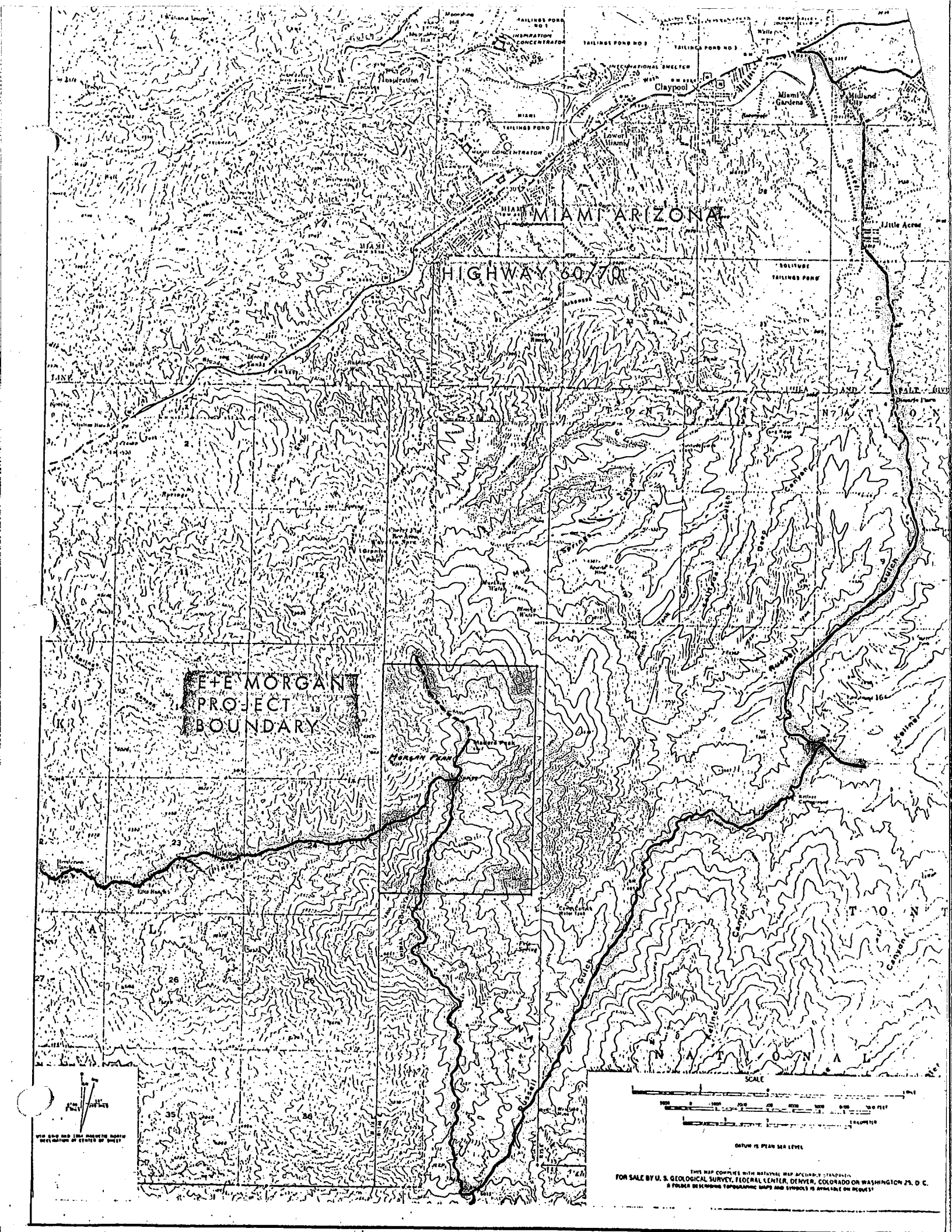
GEOLOGIC REPORT

MORGAN PROSPECT

Gila County, Arizona

Arthur G. Blucher
Mining Geologist

February 23, 1970


MIAMI ARIZONA
HIGHWAY 60/70
E+E MORGANT PROJECT BOUNDARY
Claypool
Miami Gardens
Midland City
Little Acres
Lower Miami
Inspiration Concentrator
Tailings Pond No 1
Tailings Pond No 2
Tailings Pond No 3
Miami Tailings Pond
Solitude Tailings Pond
International Smelter
Morgan Peak
Maders Peak
Russell Gulch
Deer Creek
Salt River
Apache Nation
SCALE
DATUM IS MEAN SEA LEVEL
FOR SALE BY U. S. GEOLOGICAL SURVEY, FEDERAL CENTER, DENVER, COLORADO OR WASHINGTON 25, D. C.

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ARTHUR G. BLUCHER
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TUCSON, ARIZONA 85716
793-2762

February 23, 1970

E + E Management Corporation
132 East Stetson
Scottsdale, Arizona 85251

MORGAN PROSPECT
Gila County, Arizona

Gentlemen:

Following is my report on the preliminary examination of your property.

INTRODUCTION

The Morgan Prospect is located about 65 miles east of Phoenix, Arizona. It spans the high ground between the Gila and Salt River drainage systems. At an elevation of about 6000 feet the topography is rugged and timbered or brush-covered. It can be reached by good dirt road off highway 60-70. (See Att.A).

This is a region from which there has been extracted several billion dollars worth of copper. These ore deposits have been associated with lateral apices of a Laramide intrusive termed the Schultz Granite. (See Att.B.) The Morgan Prospect is on a relatively unexplored apex of this intrusive.

There is here, without doubt, a major mineral deposit. Its exploitation is a matter of timing and economic factors.

SUMMARY AND CONCLUSIONS

Your preliminary drilling has encountered primary copper values equal to or exceeding the grade of the protore of the major producers of the district. (See Att. D.) Certainly there is here several hundreds of millions of tons of material at a grade of about 0.3% Cu with minor amounts of molybdenite and precious metals.

Surface geologic studies have failed in finding significant evidence in the leached capping of appreciable secondary enrichment. However, in the untested ground beneath Morgan Peak there might be a strong chalcocite zone not reflected in the oxidized zone. This is discussed below under Secondary Enrichment.

Further exploration is discussed below under RECOMMENDATIONS.

REGIONAL SETTING

Although the geologic history of the region is quite complex when considered in detail, it can be stated simply as follows:

At the beginning of late Precambrian time the land surface was fairly even and consisted of schist and granite.

Upon this surface there was discontinuous deposition of sedimentary and volcanic rocks from late Precambrian until the present time. During Precambrian and Paleozoic time there was little deformation or faulting and the depositional environment was miogeosynclinal.

Active crustal movement and vulcanism beginning in Mesozoic time continued well into Tertiary time and was accompanied by the intrusion of diabase, granite, and later porphyrys. Associated with the later intrusive rocks were hydrothermal solutions bearing copper mineralization.

Vertical faulting, uplift, and erosion during middle and late Tertiary time resulted in the secondary enrichment of some of these mineral deposits by downward percolating copper solutions. This was followed by the deposition of conglomerates and by the extrusion of a great thickness of volcanic rocks.

GEOLOGY AND MINERALIZATION

Geology

At Morgan Peak the Schultz Granite of Laramide age has intruded Precambrian Pinal Schist and Madera Diorite. The diorite near the contact has developed gneissic textures in the zone of mineralization, probably due to regional metamorphic stresses along the eastern boundry of the Schultz Granite intursive. Lineation of the gneiss is east-west and the dip averages 45 degrees south. There also may exist roof pendants of Pinal Schist. These gneissic rocks are cut by quartz porphyry dikes, probably differentiates of the Schultz Granite. (See Att. C.)

Mineralization

Mineralization is as chalcopyrite in irregular thread-like veinlets and occasionally as vugs or discrete grains. (See Att. E.) For the most part pyrite is sparse or absent. These veinlets are a sub-parallel conjugate system trending generally north 75 degrees east and north 15 degrees west. They dip nearly vertically. Some chalcopyrite occurs in thicker quartz veinlets with strikes and dips of about the same angles. Occasional molybdenite occurs along the quartz veinlets. Muck from the winze in the better mineralized zone in one of the old tunnels shows some chalcocite replacing pyrite and chalcopyrite. However, most of the core shows no chalcocite.

This mineralization is part of a zone of alteration about 2-1/2 miles long by 1 mile wide and elongated east-west. The most favorable part lies near E + E western property limits.

Alteration

Hydrothermal alteration at Morgan Peak consists mainly of silicification and sericitization. There is little or no kaolinitic or other form of argillic alteration as in most porphyry copper deposits. This unique aspect is displayed in the leached capping and accentuated by the relatively low degree of primary mineralization and the high ratio of chalcopyrite to pyrite.

One of the problems in the interpretation of this alteration is that it is difficult to separate mineralogic changes due to metamorphism from those due to alteration from hydrothermal solutions. Some of the sericite is quite coarse-grained. This, when intergrown with coarse quartz and feldspar, resembles pegmatitic textures. In other cases sericite plating parallel with gneissic banding is typical of regional metamorphic effects. Similarly, the distribution and texture of quartz is probably the result of several geologic processes.

The problem here is whether we are dealing with an apically truncated or deeply truncated volume of hydrothermally altered and mineralized rock. The presence of fine crystals of comb quartz in some open veinlets suggests low temperature - low pressure conditions. The absence of a wide zone of argillic alteration suggests the contrary. Detailed logging of the drill holes suggests an increase in alteration with depth. A search of the professional literature has found no comparable situation of conflicting data.

It is my feeling that the zoning of alteration at Morgan Peak indicates an increase in degree with increasing depth.

Post-Mineral History and Secondary Enrichment

About two-thirds of the large-tonnage disseminated copper deposits presently being exploited depend for economic grade on the process of secondary enrichment---that is, the existence of secondary chalcocite deposited by downward percolating copper solutions produced by the oxidation and leaching of primary ore.

In the opinion of most geologists familiar with this type of deposit, the erosional environment necessary for the development of such enriched blankets of secondary chalcocite was that of an arid climate, deep oxidation, and a fluctuating water table. These conditions occurred in the Southwestern United States, Southern Peru, and Northern Chile during late Tertiary time. In these areas some oxidation, leaching, and secondary enrichment is taking place during present geologic time.

The Morgan Prospect is in a region in which the geologic history, after primary mineralization, was particularly suited to the processes of secondary enrichment. It is probable that a zone of primary mineralization such as this enjoyed the benefit of secondary enrichment at some time. The question we face here is whether or not uplift and erosion have removed this blanket.

N. P. Petersen, USGS, has pointed out that area distribution of the oldest rocks of this region---Pinal Schist and coarse-grained Precambrian granite---may give a clue

to the oldest major structures of the region. If a N 70 degree E bearing line is drawn between Hewitt Ridge in the west and Ramboz Peak in the east, it will be seen that all of the coarse Precambrian granite (not including the Madera Diorite) lies to the north of this line, and most of the Pinal Schist lies to the south of the line. He also states that the reverse of this relationship, that is, Pinal Schist on the north and granite on the south, occurs along a similar line drawn through Ray, Arizona, to the south of the area.

When considering whether or not the western end of the Morgan Prospect---proven to be well mineralized by your drilling---has the post mineral history which would allow and preserve a zone of secondary enrichment, these structural problems are important.

In Southern Arizona there are two distinct types of major post-mineral fault structures. The first of these is horizontal to flatly dipping such as the Mission Fault or San Manuel Fault. The second is the generally north-south trending, nearly vertical type normal fault such as the Concentrator Fault at Superior or the Miami Fault north of the Morgan Prospect. Both of these have displacement in excess of 2500 feet.

It can readily be seen what effect such faulting would have regarding the development and preservation of a chalcocite blanket here.

An analysis in detail of the relationship of the present erosional surface at the Morgan Prospect to that which existed in late Tertiary time is beyond the scope of this examination. A study of previous work by Ransome and Petersen of the USGS suggests the possibility that the block between Morgan Peak and the secondarily enriched deposits at Miami may be down-faulted along a north 20 degree east line roughly coinciding with the Miami Fault and tilted upward toward the east. Should this be the case there might exist at Morgan Peak a secondary zone not yet truncated and removed by erosion. Although the limonites in the capping do not indicate that they are the product of oxidized chalcocite ore, the high Cp-Py ratio (see Att. D) of the protore, or other special geologic circumstances may explain this condition.

GEOPHYSICAL CONSIDERATIONS

This mineral suite and this rock environment should be ideal for the application of induced polarization geophysical methods. However, the results of IP work to date do not coincide with drilling results. It may be in order to have an analysis made by a second geophysical firm of the data which Geoex gathered.

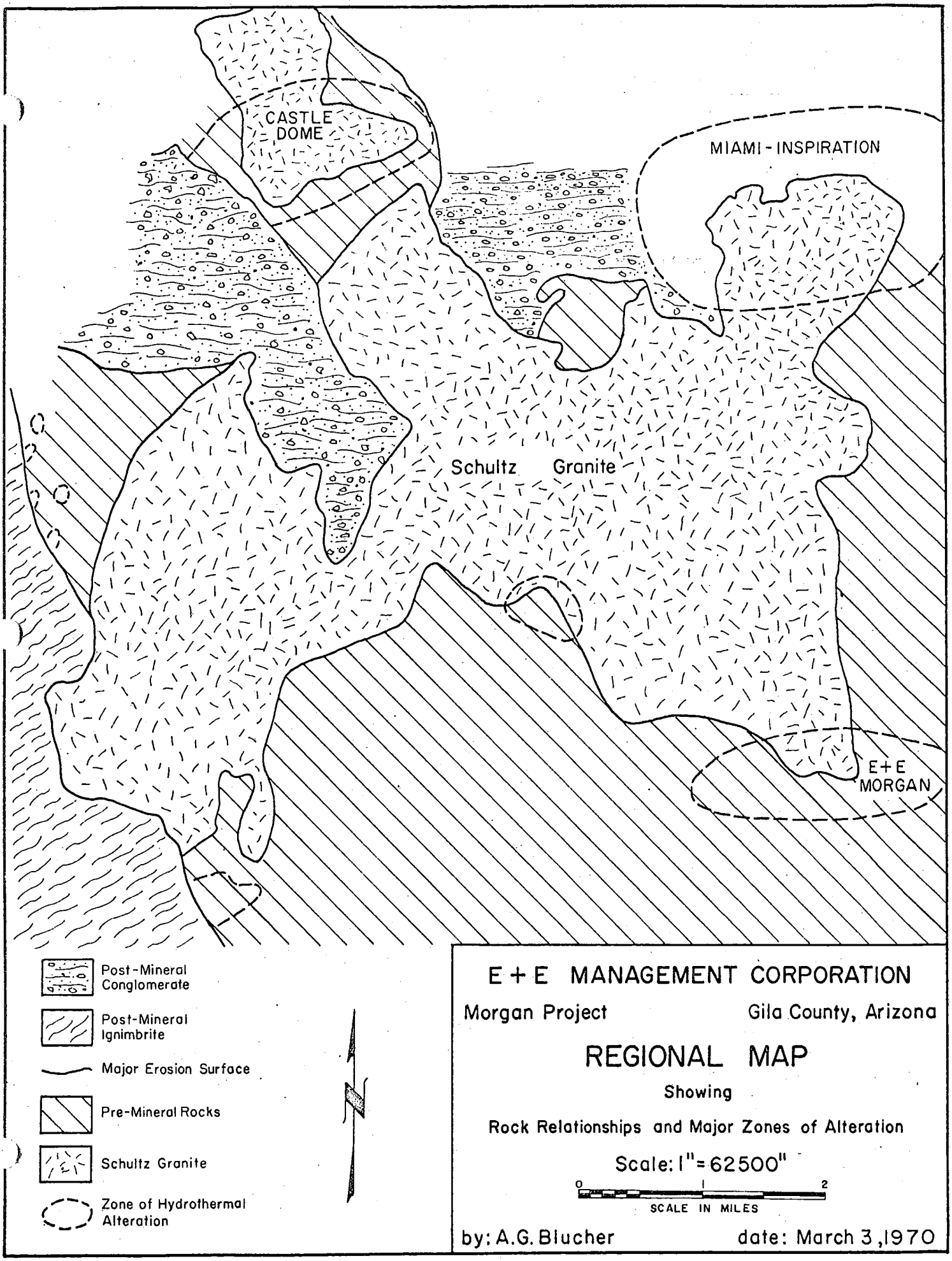
RECOMMENDATIONS

I recommend that this property be further explored by drilling. As the focal point of primary mineralization is quite near to the western boundary of the property, consideration should be given to the possibility of a joint enterprise with the adjacent property owners.

Sincerely yours,

Arthur G. Blucher

mh


CASTLE DOME
MIAMI - INSPIRATION
Schultz Granite
E+E MORGAN
Post-Mineral Conglomerate
Post-Mineral Ignimbrite
Major Erosion Surface
Pre-Mineral Rocks
Schultz Granite
Zone of Hydrothermal Alteration
N
E + E MANAGEMENT CORPORATION
Morgan Project
Gila County, Arizona
REGIONAL MAP
Showing
Rock Relationships and Major Zones of Alteration
Scale: 1" = 62500'
0
1
2
SCALE IN MILES
by: A.G. Blucher
date: March 3, 1970

ARTHUR G. BLUCHER
MINING GEOLOGIST
3149 EAST PRINCE ROAD
TUCSON, ARIZONA 85716
793-2762

March 4, 1970

E + E Management Corporation
132 East Stetson
Scottsdale, Arizona 85251

Gentlemen:

Attached is the log of your Morgan Prospect DDH #1. Following is the summary.

This hole is collared in diorite gneiss at an elevation of 6154 feet at coordinates 50280 N - 50039 E. It penetrated 180 feet of oxidized and leached capping with red, yellow, and brown iron oxides indicative of primary pyrite-chalcopyrite mineralization. In the sulfide zone between 180 feet and 300 feet copper values averaged slightly less than 0.1% copper. From 300 feet to 500 feet averaged slightly more than 0.1% copper. From 500 feet to 560 feet the grade was about 0.15%. From 560 to 600 feet low core recovery and intense alteration suggests a major shear zone. The core recovered averages 0.23% copper. From 600 feet to the bottom of the hole at 670 feet values average 0.13% Cu.

Arthur G. Blucher

mh

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 670 Ft. | Date Started: 10/21/69

Drill Hole No.: 1 | Inclination: ⊖ 90° | Date Finished: 11/6/69

Location: 50280 N-50039 E | Sampler: Jacobs Assay | Logged by: A.G. Blucher

Collar Elev.: 6154

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
14-18.5	0.10		0.004	0' - 180' -	Sparse yellow	Spotty -	90%
18.5-23.5	0.11		Trace	Oxidized and	and brown	moderate to	
23.5-28.5	0.11		Trace	part oxide	iron oxides.	intense	
28.5-33	0.10		0.002	and leached	Occasional	sericite and	
33-38	0.08		0.003	gneissic	remnant	silica.	
38-42.5	0.04		Trace	diorite and	pyrite. Little		
				quartz	or no limonite		
44.5-50.5	0.09		Trace	diorite. Varies	after chalco-		
50.5-55	0.06		Trace	from medium	cite. 90% of		
55-59	0.08		Trace	grained to	mineraliza-		
59-63.5	0.07		0.002	schistose	tion on		
63.5-68	0.03		Trace	textures. At	fractures &		
68-72.5	0.09		0.005	87' fault	veinlets. 10%		
72.5-77	0.10		Trace	gouge and	dissemination.		
77-82	0.06		0.002	breccia. After	140' to 200'		
82-87	0.05		0.003	110' grain	occasional		
87-91.5	0.06		0.002	size increases	chalcocite.		
91.5-96.5	0.04		0.002				
96.5-100.5	0.12		0.011				
100.5-105	0.18		0.008				
106-110	0.07		Trace				
110-115	0.13		Trace				
115-120	0.07		Trace				
120-124	0.10		0.005				
124-129	0.07		Trace				
129-133	0.11		0.003				
133.5-137.5	0.09		Trace				
137.5-142	0.17		0.075				
142-147	0.10		0.027				
147-151	0.06		0.006				
151-155.5	0.09		0.007				
155.5-160	0.18		0.002	At 155'			
160-165.5	0.14		0.010	2' fault			
165.5-169	0.03		0.013	gouge.			
169-173.5	0.04		0.002				
173.5-178	0.08		Trace				
178-182	0.05		0.002	Oxide			
182-185.5	0.07		Trace	Sulfide.			+80%
186.5-191.5	0.06		0.010	Fine to			
191.5-195	0.16		0.003	medium			
195-198	0.03		Trace	grained			
198-200	0.17		0.014	diorite gneiss.			

Exploration Drilling Log

Property: MORGAN | Total Depth: 670 Ft. | Date Started: 10/21/69
Drill Hole No.: 1 | Inclination: ⊖ 90° | Date Finished: 11/6/69
Location: 50280 N-50039 E | Sampler: Jacobs Assay | Logged by: A.G. Blucher
Collar Elev.: 6154

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
203.5-208.5	0.03		0.002	Moderate dipping lineation. After 250 grain size decreases. Some segments may be Pinal Schist. Sparse yellow iron oxide at 300'.	Very weak pyrite and chalcopyrite. Fair chalcopyrite at 250'.	Moderate-increase in chlorite. Quartz banding is metamorphic.	
208.5-213.5	0.02		Trace				
213.5-218	0.05		Trace				
218-222.5	0.07		Trace				
222.5-227	0.05		0.009				
227-232	0.10		0.011				
232-237	0.06		0.005				
237-241	0.04		0.004				
241-245.5	0.03		0.002				
245.5-249.5	0.04		Trace				
249.5-253.5	0.28		0.034				
253.5-258	0.08		0.005				
258-263	0.15		0.005				
263-268	0.10		0.006				
268-273	0.11		Trace				
[illegible]-277.5	0.12		0.002				
[illegible].5-282.5	0.05		Trace				
282.5-286	0.29		0.014				
286-291	0.05		0.012				
291-295.5	0.04		0.002				
295.5-300	0.06		Trace				
300-304	0.21		0.016				
304-308	0.09		0.002				
308-312	0.12		0.007				
312-317	0.11		0.005				
317-322	0.04		0.007				
322.5-327	0.04		0.019				
327-332	0.03		0.006				
332-337	0.09		0.002				
337-342	0.18		0.006				
342-346	0.07		0.006		Chalcopyrite gradually increases.		
346-350	0.09		0.007				
350-355	0.14		Trace				
355-360	0.10		0.007				
360-365	0.06		0.002				
369-374	0.06		0.005				
[illegible]-377.2	0.03		Trace				
[illegible].5-381.5	0.06		Trace				
381.5-386	0.08		0.005				
386-391	0.10		0.002				
391-396	0.08		Trace				
396-401	0.14		Trace				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 670 Ft. | Date Started: 10/21/69

Hole No.: 1 | Inclination: ⊖ 90° | Date Finished: 11/6/69

Location: 50280 N-50039E | Sampler: Jacobs Assay | Logged by: A.G. Blucher

Collar Elev.: 6154

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
401-406	0.10		0.005	Same.		Same.	
406-410.5	0.14		0.004				
410.5-415	0.14		0.002				
415-419.5	0.10		0.005				
419.5-423.5	0.06		Trace				
423.5-428	0.03		Trace	Fault gouge	Good moly		
428-433	0.09		0.013	in breccia	at 428'.		
433-436.5	0.08		0.003	at 430'.			
436.5-440	0.10		0.002				
440-444.5	0.12		0.010				
444.5-449	0.11		0.004				
449-453.5	0.19		Trace				
453.5-458	0.11		0.009				
458-462.5	0.10		0.004				
462.5-467	0.06		Trace				
467-473	0.20		Trace				
473-477	0.14		0.002				
477-482	0.10		Trace				
482-487	0.10		Trace				
487-491.5	0.07		0.002				
491.5-496	0.07		Trace				
496-501	0.07		Trace		After 500'		75%
501-506	0.12		0.005		chalcopyrite		
506-511	0.14		0.002		increasing -		
511-516	0.10		Trace		mostly on		
516-520	0.17		Trace		vertical		
520-524	0.17		0.003		veinlets.		
524-529	0.14		Trace				
529-534	0.14		0.004				
534-538.5	0.09		0.005				
538.5-543	0.12		0.005				
543-548	0.17		0.006				
548-553	0.16		Trace				
553-557	0.16		0.007				
561-563	0.25		Trace	563' - 568'			
568-573	0.18		0.002	no core -			
573-578.5	0.29		Trace	Fault?			
588-594	0.43		0.041	580' - 598'			60% ±
594-602	0.42		0.029	Fault gouge			
602-607	0.20		0.005	& breccia.			

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 670 Ft. | Date Started: 10/21/69

Drill Hole No.: 1 | Inclination: ⊖ 90° | Date Finished: 11/6/69

Location: 50280 N-50039 E | Sampler: Jacobs Assay | Logged by: A.G. Blucher

Collar Elev.: 6154

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
607-612	0.14		0.013	Coarse	Fair	Same.	
612-617	0.21		0.068	grained	chalcopyrite.		
617-622.5	0.32		0.024	gneiss.	No pyrite.		
622.5-630	0.13		0.002	598' - 670'			70%
630-638	0.09		Trace	Fine grained			
638-643	0.04		Trace	gneiss.			
643-648	0.16		0.002				
648-654	0.08		0.002				60%
654-660	0.10		Trace				
660-665	0.05		0.014				
665-670	0.03		Trace	Bottom of hole.			

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March 4, 1970

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Scottsdale, Arizona 85251

Gentlemen:

Attached is the log of your Morgan Prospect DDH #2. Following is the summary.

This drill hole was collared in quartz diorite porphyry at coordinates 49820 N. 50460 E. It encountered 79 feet of oxidized and partly oxidized leached capping. Below 79 feet there is weak sulphide mineralization to a depth of about 530 feet which averages less than 0.05% copper and 0.005% molybdenum. From 530 to 570 feet copper values average about 0.2%. Thereafter the grade ranges from 0.03% to 0.4% copper and averages about 0.1%. Except for textural variations the rock throughout is essentially the same. The hole bottomed at 787 feet. The collar elevation is 5967.

Arthur G. Blucher

mh

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN
Drill Hole No.: 2
Location: 49820 N-50460 E
Collar Elev.: 5967
Total Depth: 787 Ft.
Inclination: ⊖ 90°
Sampler: Jacobs Assay Ariz. Test. Lab.
Date Started: 11/14/69
Date Finished: 12/20/69
Logged by: A.G. Blucher

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
44-48	0.07		0.008	Quartz diorite porphyry. Variable texture. Fine to medium grained. Oxidized and leached.	Partly oxidized. Brown & yellow limonite on fractures. Occasional pyrite remnants. Very rare molybdenite.	Sparse quartz veinlets. Biotite moderately altered to chlorite(?) Feldspars cloudy from incipient sericitization.	80-100% overall, but erratic.
48-53	0.03		0.002				
53-58	0.04		Trace				
58-63	0.07		0.003				
63-68	0.04		Trace				
68-73.5	0.02		0.003				
73.5-79	0.03		Trace				
79-82.5	0.03		Trace	Same - After 80' the rock texture is gneissic. Lineation cuts axis of core at an angle of about 40 - 60 degrees. Only occasionally is the rock texture porphyrytic. For the most part it is equigranular.	Sulfide zone weak to moderate pyrite. Very weak chalcopyrite. Fine grained magnetite common. Less than 3% total sulfide minerals. At 120', 145', 160', & 187' there is fair chalcopyrite. Very little disseminated mineralization almost all on fractures or veinlets. Rare molybdenite.	Moderate to abundant coarse sericite. Not typical of alteration products. After 140' increasing sericite & qtz veinlets. Biotite completely altered to sericite or other silicates. Not identifiable with a hand lens. Occas gypsum veinlets.	90% ±
82.5-86	0.07		0.002				
86-94	0.04		Trace				
94-103	0.03		Trace				
[illegible]-112	0.02		0.003				
[illegible]2-121	0.02		Trace				
121-126	0.03		Trace				
126-131	0.05		0.002				
131-138	0.02		Trace				
138-145	0.03		Trace				
145-149.5	0.03		0.002				
149.5-154	0.02		Trace				
154-158	0.04		0.002				
158-162	0.11		0.003				
162-167	0.03		Trace				
167-172	0.02		Trace				
172-176.5	0.02		0.002				
176.5-181	0.03		Trace				
181-184.5	0.03		0.003				
184.5-188	0.02		0.002				
188-193	0.03		Trace				
193-198	0.02		0.002				
198-202.5	0.02		0.005				
202.5-207	0.05		0.002	Same, but alteration is increasing. Same quartz diorite gneiss	No increase. No magnetite. After about 270' the degree of mineralization decreases. With	Sericite, silica, to partly sericitized feldspars. After about 270' the degree of alteration	90% ±
207-212	0.03		Trace				
[illegible]-216.5	0.04		Trace				
[illegible]6.5-221	0.02		0.002				
221-225.5	0.02		0.003				
225.5-230	0.03		Trace				
230-235	0.02		Trace				
235-240	0.04		0.002				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 787 Ft. | Date Started: 11/14/69

Drill Hole No.: 2 | Inclination: ⊖ 90° | Date Finished: 12/20/69

Location: 49820 N-50460 E | Sampler: Jacobs Assay Ariz. Test. Lab. | Logged by: A.G. Blucher

Collar Elev.: 5967

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
240-248	0.06		0.003		pegmatitic textures there is occasional strong pyrite. At 309' fair moly with strong silicification. Decrease in mineralization continues. Less than 1% total sulfides (py & cp)	diminishes - some biotite & feldspar is almost fresh. With depth the grain size of phenocrysts increases. At 304' the texture is almost pegmatitic. After about 430' alteration again increases. Silicified bands increase.	
248-252.5	0.03		Trace				
252.5-257	0.02		Trace				
257-261.5	0.03		0.005				
261.5-266	0.06		0.002				
266-271.5	0.03		0.003				
271.5-277	0.03		0.003				
277-280	0.02		0.002				
280-284.5	0.03		0.004				
284.5-289	0.03		0.004				
289-293	0.04		Trace				
293-298.5	0.03		Trace				
298.5-303	0.03		0.005				
303-308	0.05		0.002				
308-313	0.03		0.014				
313-318	0.03		0.002				
318-322.5	0.02		Trace				
322.5-327	0.02		Trace				
327-331.5	0.03		Trace				
331.5-336	0.08		0.021				
336-340.5	0.05		0.002				
340.5-345	0.06		Trace				
345-349.5	0.03		Trace				
349.5-354	0.02		0.003				
354-359	0.02		Trace				
359-364	0.03		Trace				
364-367.5	0.02		Trace				
367.5-371	0.06		0.003				
371-376	0.04		Trace				
376-381	0.03		Trace				
381-387	0.02		Trace				
387-393	0.02		0.006				
393-397	0.04		Trace				
397-401	0.03		Trace				
409-413.5	0.02		0.012				
413.5-418	0.04		0.009				
418-423	0.03		0.006				
423-428	0.03		0.002				
428-432.5	0.10		0.003				
432.5-437	0.06		0.004				
437-442	0.03		0.007				
442-447	0.02		0.010				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 787 Ft. | Date Started: 11/14/69

Drill Hole No.: 2 | Inclination: ⊖ 90° | Date Finished: 12/20/69

Location: 49820 N-50460 E | Sampler: Jacobs Assay Ariz. Test. Lab. | Logged by: A.G. Blucher

Collar Elev.: 5967

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
447-452	0.02		0.003				
452-457	0.05		0.011				
457-463	0.03		0.002				
463-468.5	0.06		0.012				
468.5-473	0.05		0.002				
473-478	0.06		0.003				
478-483	0.06		Trace				
483-488	0.04		0.002				
488-497	0.05		Trace				
497-506	0.03		0.005	Light colored diorite porphyry.			
				Fault gouge, breccia.	Post - mineral fault (?)		< 50
-515	0.04		Trace	Quartz diorite porphyry and med. to coarse grain quartz diorite. Variable grain size and increasing gneissic textures. At 536' pegmatitic texture with strong pyrite. At 553' pegmatite. At 557' a 1 ft. thick basic dike.	Very weak - less than 1% tot. sulfides except in pegmatitic zones. After 530' occasional good chalcopyrite.	Intensely altered. Abundant sericite, chlorite, and silica.	90+
515-524.5	0.04		0.002				
524.5-529	0.09		Trace				
529-533	0.03		0.005				
533-538	0.13		Trace				
538-543	0.12		0.009				
543-547.5	0.16		Trace				
547.5-552	0.07		Trace				
552-558	0.28		0.004				
558-562	0.47		0.017				
562-567	0.32		0.008	Medium grained quartz diorite porphyry. Even textures. No gneiss.	Very weak pyrite. Occasional good chalcopyrite on quartz veinlets.	Moderate - biotite to chlorite - weak to moderate sericite and silica.	90% +
567-572	0.12		Trace				
-577	0.03		Trace				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN
Drill Hole No.: 2
Location: 49020 N-50460 E
Collar Elev.: 5967
Total Depth: 787 Ft.
Inclination: ⊖ 90°
Sampler: Jacobs Assay Ariz. Test. Lab.
Date Started: 11/14/69
Date Finished: 12/20/69
Logged by: A.G. Blucher

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
577-582	0.06		Trace	Quartz diorite & quartz diorite porphyry - irregular grain size and variable gneissic textures. At 682' & 687' small dikes similar to 489' - 504'.	Mainly pyrite. At 633' fair chalcopyrite. At 661' fair chalcopyrite.	Strong alteration. After 670' much coarse grained sericite and silicification.	85% +
582-586.5	0.11		0.013				
586.5-591	0.25		0.023				
591-596	0.15		Trace				
596-601	0.08		0.006				
601-605.5	0.17		Trace				
605.5-610	0.12		0.014				
610-614.5	0.13		0.002				
614.5-619	0.07		0.015				
619-623.5	0.03		Trace				
623.5-628	0.09		0.007				
628-632.5	0.22		0.003				
632.5-637	0.09		0.008				
637-641.5	0.05		0.002				
641.5-646	0.09		0.002				
)-650.5	0.06		Trace				
650.5-655	0.02		Trace				
655-658	0.01		Nil				
658-663	0.15		Nil				
663-668	0.05		Nil				
668-673	0.03		Nil				
673-677	0.03		Nil				
677-682	0.03		Nil				
682-687	0.38		Nil				
687-692	0.14		Nil				
692-697	0.02		Nil				
697-702	0.03		Nil	Fine to medium grained diorite gneiss. After 721' grain size increases. At 770' narrow basic dike. Same gneiss to bottom of hole.	Weak veinlet pyrite and chalcopyrite. Same. At about 740' good veinlet chalcopyrite - little pyrite. At 748' & 753' fair chalcopyrite. Pyrite is with gypsum veinlets and chalcopyrite with quartz veinlets.	Moderate. Increase in sericite.	90% +
702-707	0.03		Nil				
707-712	0.05		Nil				
712-716	0.02		Nil				
716-721	0.01		Nil				
721-726	0.05		Nil				
726-731	0.05		Nil				
731-736	0.01		Nil				
736-741	0.13		Nil				
741-745	0.21		Nil				
745-750	0.09		Nil				
)-761	0.04		0.001				
761-766	0.12		0.002				
766-773.5	0.12		Nil				
773.5-778.5	0.06		Nil				
778.5-783	0.12		Nil				
783-787	0.01		Nil				

ARTHUR G. BLUCHER
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793-2762

March 4, 1970

E + E Management Corporation
132 East Stetson
Scottsdale, Arizona 85251

Gentlemen:

Attached is the log of your Morgan Prospect DDH #3. Following is the summary.

This hole was collared in quartz diorite gneiss at an elevation of 6059 feet at coordinates 49680 N - 49630 E. It encountered 75 feet of oxidized and leached capping. Below this minor amounts of chalcopyrite and molybdenite, and occasional chalcocite, assayed about 0.25% Cu and 0.006% Mo. From about 180 feet to the bottom of the hole at 702 feet primary copper values range from 0.03% to 0.4%, and average 0.1%.

Arthur G. Blucher

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E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 726 ft. | Date Started: 1/8/70

Drill Hole No.: 3 | Inclination: ⊖ 90° | Date Finished: 2/4/70

Location: 49680 N-49630 E | Sampler: Ariz.Test.Lab. | Logged by: A.G. Blucher

Collar Elev.: 6059

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
20-25	0.06		0.020	Diorite & quartz-diorite gneiss - oxidized & leached - Brown & yellow. Limonites on fractures.	The limonitic products are typical of oxidized pyrite and chalcopyrite. No risidual sulfides were seen- Sparse copper ox.	Oxidized & leached	70% +
25-30	0.07		0.004				
30-34.5	0.07		0.004				
34.5-39	0.08		0.002				
39-43.5	0.13		0.008				
43.5-48	0.04		0.02				
48-53	0.08		0.006				
53-57	0.15		0.02				
57-61.5	0.28		0.004				
61.5-66	0.07		0.008				
66-70.5	0.23		0.004				
70.5-75	0.14		0.002				
75-79	0.34		0.002	Same formation - Sulfide zone - Gouge & breccia @ 83' & 100' - partial oxidation @ 120' & 130' -149' - Gneissic banding flat to 50 degrees - after 130' grain size decreases - much of the rock has almost a diabasic texture.	Few disseminated sulfides - weak pyrite - fair chalcopyrite on quartz vienlets - Chalcocite partially replaces chalcopyrite and some of the pyrite- Ratio of chalcopyrite to pyrite about 1:1 - Total sulfides about 2% by weight. After 160' there is no chalcocite & total Cu decreases. Total sulfides increase gradually. After 260' total sulfides	Strong sericite, moderate chlorite, & spotty silicification. No apparent magnetite. Chlorite & sericite zones have graditional limits. Silicification decreases after 130'. At 150' silica again increases.	
79-83	0.25		0.002				
83-87.5	0.70		0.005				
87.5-92	0.15		0.001				
92-97	0.36		0.002				
97-102	0.30		0.003				
102-106	0.14		0.005				
106-111	0.12		0.006				
111-114.5	0.08		0.004				
114.5-120	0.27		0.005				
120-125	0.17		0.005				
125-130	0.27		0.006				
130-134.5	0.12		0.005				
134.5-139	0.09		0.006				
139-143.5	0.19		0.006				
143.5-148	0.13		0.004				
148-152.5	0.22		0.010				
152.5-157	0.21		0.010				
157-161	0.30		0.006				
161-166	0.49		0.012				
166-171	0.21		0.004				
171-176	0.17		0.004				
176-181	0.18		0.011				
181-187	0.10		0.009				
187-191	0.08		0.004				
191-196	0.05		0.005				
196-201	0.12		0.004				
201-206	0.08		0.003				
206-211	0.17		0.004				
211-215	0.15		0.004				
215-220	0.31		0.008				
220-225	0.13		0.006				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 726 ft. | Date Started: 1/8/70

Drill Hole No.: 3 | Inclination: ⊖ 90° | Date Finished: 2/4/70

Location: 49680 N-49630 E | Sampler: Ariz.Test.Lab. | Logged by: A.G. Blucher

Collar Elev.: 6059

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
225-230	0.10		0.005				
230-234	0.25		0.007	Medium to course - grained quartz diorite gneiss with pegmatitic zones. At 308' minor gouge & breccia. The rock is still intensely altered diorite & quartz diorite with varying degrees of gneissic texture.	Spotty & weak mineralization @ 292', 294' & 306' chalcopyrite on fractures & veinlets. At 311', 315', 317', 322', 324', 329' & 331' good chalcopyrite on veinlets but little or no mineralization in between. 345' - 347' very good chalcopyrite, disseminated & on veinlets. Very little pyrite.	Abundant sericite & silica. Spotty chlorite & partly altered biotite. After 330' silicification increases. After 340 silica decreases. Overall the rock is intensely sericitized & silicified. Abundant chlorite.	85% +
234-239	0.05		0.004				
239-243	0.27		0.008				
243-248	0.13		0.006				
248-253	0.12		0.005				
253-258	0.05		0.003				
258-264	0.05		0.003				
264-269	0.03		0.002				
269-274	0.25		0.003				
274-279	0.06		0.003				
279-284	0.16		0.009				
284-288	0.31		0.006				
288-292	0.34		0.003				
292-297	0.15		0.002				
297-302	0.04		0.003				
302-307	0.14		0.003				
307-311	0.07		0.002				
311-316	0.24		0.005				
316-321	0.15		0.009				
321-326	0.20		0.004				
326-331	0.10		0.009				
331-335	0.20		0.010				
335-340	0.13		0.004				
340-345	0.32		0.005				
345-349	0.19		0.004				
349-354	0.38		0.007				
354-359	0.11		0.004	Fine to medium - grained diorite gneiss - Banding is nearly flat to 40 degrees - 300' to 400' distorted, high angle gneissic banding.	Weak mineralization. Very little pyrite. Chalcopyrite @ 359', 363' & 366' - 380' to 384' strong chalcopyrite in vugs & veinlets - Sparse pyrite.	- Intense alteration - Sericite, silica, chlorite.	90% ±
359-363	0.13		0.003				
363-367	0.16		0.004				
367-372	0.13		0.003				
372-377	0.13		0.003				
377-382	0.27		0.004				
382-386	0.12		0.002				
386-391	0.13		0.005				
391-396	0.13		0.003				
396-400	0.35		0.003				
400-405	0.06		0.002				
405-410	0.03		0.002				
410-415	0.04		0.002				
415-420	0.30		0.016				
420-424	0.19		0.008	Fine grained gneiss-nearly flat banding	Weak mineralization. Little	Moderate to weak quartz-sericite.	
424-429	0.03		0.004				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 726 Ft. | Date Started: 1/8/70

Drill Hole No: 3 | Inclination: ⊖ 90° | Date Finished: 2/4/70

Location: 49680 N-49630E | Sampler: Ariz.Test.Lab. | Logged by: A.G. Blucher

Collar Elev.: 6059

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
429-434	0.06		0.008		pyrite.	Partial	
434-439	0.24		0.006		Chalcopyrite	chloritiza-	
439-444	0.25		0.004		occasionally	tion.	
444-449	0.16		0.012		on fractures.		
449-453	0.18		0.004		Good chal-		
453-458	0.10		0.002	After about	copyrite @		
458-463	0.14		0.008	450' gneissic	440' & 442 -		
463-468	0.15		0.004	textures are	Chalcopyrite		
468-473	0.10		0.002	less	mineraliza-		
473-478	0.13		0.006	pronounced.	tion in-		
478-482	0.15		0.004		creases.		
482-487	0.13		0.002	Same to 560'	Almost no		
487-491	0.19		0.002	with occa-	pyrite.		
491-496	0.14		0.006	sional zones	Fairly even		
496-501	0.42		0.004	of coarse	chalcopyrite		
[illegible]-505	0.19		0.002	crystalline	as vugs &		
[illegible]-510	0.38		0.012	quartz.	veinlets to		
510-515	0.02		0.004		the bottom	Alteration	
515-519	0.04		0.004		of the hole.	is spotty.	
519-524	0.04		0.003				
524-529	0.18		0.004				
529-534	0.11		0.007				
534-540	0.25		0.006				
540-545	0.12		0.003				
545-550	0.18		0.007				
550-554	0.24		0.003				
554-559	0.21		0.004				
559-563	0.28		0.005				
563-568	0.07		0.007				
568-573	0.13		0.003	After 560'			
573-577	0.15		0.004	the dip of			
577-580	0.08		0.020	gneissic			
580-585	0.19		0.004	banding			
585-590	0.20		0.003	increases.			
590-596	0.20		0.009				
596-601	0.09		0.003				
601-606	0.08		0.001				
[illegible]-611	0.12		0.004				
[illegible]-616	0.04		0.003				
616-621	0.17		0.005				
621-626	0.01		0.003				
626-630	0.09		0.004	Same to 653'			
630-635	0.14		0.008			Alteration	
						increases.	

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 726 Ft. | Date Started: 1/8/70

Drill Hole No.: 3 | Inclination: ⊖ 90° | Date Finished: 2/4/70

Location: 49680 N - 49630 E | Sampler: Ariz. Test. Lab. | Logged by: A. G. Blucher

Collar Elev.: 6059

Depth	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
635-640	0.15		0.010				
640-644	0.09		0.003				
645-650	0.16		0.006		At 648' good moly.		
650-654	0.17		0.005	653' - 660' diabase.	Very weak.	Weak to moderate.	75% ±
654-659	0.32		0.010				
659-663	0.22		0.003	At 660' thick zone of gouge & breccia. Rock is diorite gneiss.	Mineralization decreases. Occasional primary hematite.	Strong sericite. Moderate kaolin & silica.	90% ±
663-668	0.16		0.003				
668-673	0.09		0.002				
673-678	0.02		nil				
678-683	0.01		nil				
683-689	0.02		0.001				
689-695	0.03		nil				
695-701	0.05		nil				
701-707	0.09		nil				
7-716	0.06		nil				
716-721	0.06		0.003	721' - 726' fault gouge & breccia. Same rock.	Finely divided chalcocite in gouge?	Intense.	
721-726	0.21		0.020				

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March 4, 1970

E + E Management Corporation
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Scottsdale, Arizona 85251

Gentlemen:

Attached is the log of your Morgan Prospect DDH #4. Following is the summary.

This hole was collared in strongly altered quartz diorite gneiss at an elevation of 6226 feet at coordinates 49699 N - 49223 E. It cut about 320 feet of oxidized and leached capping with limonites indicative of moderate to strong primary mineralization. The sulphides encountered were in the main part chalcopyrite but the overall degree of mineralization was relatively weak. In this zone copper values fluctuated from 0.02% to 0.76% copper, averaging 0.14% copper. The last three samples averaged more than 0.4% Cu which may be significant, as alteration was increasing with depth. It bottomed at a depth of 465 feet.

Arthur G. Blucher

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E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 464 Ft. | Date Started: 2/6/70

Drill Hole No.: 4 | Inclination: ⊖ 90° | Date Finished: 2/16/70

Location: 49699 N-49223 E | Sampler: Ariz.Test.Lab. | Logged by: A.G. Blucher

Collar Elev.: 6226

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
10-16	0.01		0.001	Fine to medium grained gneiss. At 46' fault gouge & breccia. After 90' grain size increases. Dip of banding is plus 50°. Occasional coarse grained textures.	Brown & yellow iron oxides. Moderate amounts of black Mn-Cu oxides. After 95' mineralization increase. Fairly common quartz veinlets with limonite & malachite. After 200' occasional relict sulfides. Random oxide filled veinlets & fractures. Estimated 6-8% total sulfides before oxidation. About 90% on veinlets.	Weak quartz - sericite-chlorite. Alteration increasing.	90% ±
16-22	0.02		0.001				
22-27	0.06		0.002				
27-32	0.06		0.001				
32-37	0.06		0.004				
37-43	0.05		0.002				
43-47	0.05		0.002				
47-52	0.06		0.003				
52-57	0.05		0.002				
57-62	0.05		0.002				
62-67	0.06		0.002				
67-78	0.03		0.001				
78-85	0.03		0.002				
85-92	0.07		0.003				
92-97	0.09		0.002				
97-102	0.20		0.003				
)-107	0.17		0.002				
107-112	0.18		0.003				
112-117	0.06		0.001				
117-121	0.09		0.002				
121-126	0.13		0.001				
126-131	0.11		0.001				
131-136	0.19		nil				
136-141	0.09		nil				
141-146	0.09		0.001				
146-151	0.09		0.001				
151-156	0.08		0.001				
156-163	0.08		0.002				
163-168	0.09		0.008				
168-173	0.09		0.004				
173-178	0.10		0.005				
178-183	0.13		0.004				
183-188	0.19		0.002				
188-192	0.13		0.001				
192-197	0.07		0.001				
197-203	0.16		0.002				
203-208	0.45		0.006				
208-213	0.28		0.003				
)-218	0.09		0.001				
8-224	0.09		0.001				
224-231	0.07		0.001				
231-239	0.14		0.001				
239-244	0.07		0.001				

E + E MORGAN PROJECT

Exploration Drilling Log

Property: MORGAN | Total Depth: 464 Ft. | Date Started: 2/6/70

Drill Hole No.: 4 | Inclination: ⊖90° | Date Finished: 2/16/70

Location: 49677 N - 49223 E | Sampler: Ariz. Test. Lab. | Logged by: A.G. Blucher

Collar Elev.: 6226

Depth (Ft.	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
244-246	0.07		0.001			Sericite-	
246-253	0.09		0.001	At 251'&		kaolinite -	
253-258	0.06		0.001	260' fault		chlorite	
258-263	0.10		0.001	gouge &		with	
263-268	0.11		0.001	breccia.		moderate	
268-272	0.14		0.001			silicifica-	
272-277	0.14		0.001			tion.	
277-282	0.09		0.001				
282-287	0.17		0.002				
287-292	0.16		0.002				
292-297	0.19		0.003				
297-302	0.06		0.002		After 312'		
302-308	0.10		0.002		limonites		
308-313	0.13		0.003		decrease.		
313-318	0.07		0.002		Fracturing		
( )-323	0.13		0.001	Oxide.	decreases.		
323-328	0.07		0.001*1.t	Sulfide zone	Weak		90% ±
328-333	0.18		0.001		chalcopyrite		
333-337	0.04		0.001		& pyrite.		
337-342	0.02		0.011		Occasional		
342-347	0.13		0.001		fair moly.		
347-352	0.24		0.001				
352-356	0.09		0.002				
356-359	0.05		0.005			Below 350'	
359-363	0.07		0.003			silicifica-	
363-368	0.11		0.001	Diorite		tion	
368-372	0.34		0.007	gneiss.		increases to	
372-377	0.03		0.002	Moderately		bottom of	
377-382	0.03		0.001	dipping		hole.	
382-387	0.06		0.001	banding.			
387-391	0.03		0.001				
391-396	0.05		0.001				
396-401	0.16		0.001				
401-406	0.21		0.007				
406-411	0.16		0.002				
411-416	0.15		0.002				
416-422	0.11		0.002				
( )-427	0.11		0.002				
( )-432	0.03		0.001				
432-437	0.13		0.001				
437-442	0.14		0.001				
442-447	0.07		0.001				
447-453	0.09		0.002				

*1.t = less than

E + E MORGAN PROJECT

Exploration Drilling Log

Property MORGAN | Total Depth 464 Ft. | Date Started 2/6/70

Drill Hole No. 4 | Inclination ⊖ 90° | Date Finished 2/16/70

Location 49699 N - 49223 E | Sampler Ariz. Test. Lab. | Logged by A.G. Blucher

Collar Elev. 6226

Depth (Ft.)	% Cu	Other	MO %	Rock Type	Minerals	Alteration	% Recovery
453-458	0.10		0.003	Same.			
458-464	0.38		0.004	Very broken.			
464-465	0.76		0.002				

NOTES
UNDERGROUND TRIP OLD DOMINION MINE GLOBE, ARIZ. OCT.17,1930.

Deepest operating level is the 2600, which is probably about 2200 ft. vertically beneath surface, as the 2200 level is 1800 ft. below the collar of the shaft. Development on the 2600 is about 2000 ft. west of Pinal Creek. Ore on this level at the west end of the development is in a broken quartzite block - probably Dripping Springs - apparently caught in a diabase intrusion, for the quartzite does not show above on the 2400 level. The mineralization is chiefly pyrite and chalcopyrite.

The Old Dominion vein is a mineralized fault fissure which strikes about N 50-60°E, and dips to the south from 60-75°. It is offset by several stong N-S faults that dip to the west and have a normal movement. They are known as the Pinal Creek fault , West fault, Limestone fault, etc.

The hanging wall of the vein has moved downward with respect to the footwall about600 - 700 ft. Mineralization is found along the vein in sedimentaries and within the diabase. The Mescal lime has been the most favorable sedimentary horizon, and in the upper levels it was frequently completely replaced and formed the large bodies of oxide copper ore mined in the earlier days of the Old Dominion.Ore in quartzite is generally confined to the immediate vicinity of the vein. Within the diabase intrusions thereare several low grade ore bodies above the 2200n which are pyritic and carry enough secondary chalcocite to be commercial. Above the 2400 level there is an orebody approximately 500 ft. long and from 600 - 800 ft. wide that Reed (asst. geologist) says will run over 3% Cu. The mineralization is not disseminated in type, but is present in 1/8 -1/4 inch seams of pyrite and chalcopyrite. Present plans call for mining this orebody with Morenci type stopes.

Some ore has been discovered in the Martin limestone, but by far the larger part has been mined from the Mescal lime. Orebodies so far discovered in the limestone have been entirely oxidized ores of malachite, chryscolla replacing malachite, and melaconite. In many cases above and below the beds of oxidized ore there are parallel beds of heavy iron oxides and altered ~~stain~~ stained limestone that Reed believes to be oxidized pyrite in place.

A major diabase sill, with several offshoots, has a width from 600 to 1200 ft. vertically. In the western portion of the mine it lies above the Dripping Springs quartzite and below the Mescal lime. Near the main shaft the diabase breaks across the Mescal lime, and in the eastern portion of the mine, the diabase is above the Mescal and below the Troy quartzite. The thickness is about 600 ft. in the eastern portion of the mine. The diabase is quite fresh and unaltered where it is ore-bearing, but locally away from the orebodies it is well altered. No metamorphism of the sedimentaries by the diabase is in evidence,

In the extreme west end of the 2400 development, an unconsolidated breccia is exposed which is called the Whitetail conglomerate. It resembles a fault breccia more than a conglomerate bed; it contains fragments of the sedimentaries, a few rounded quartzite boulders, and is said to contains chunks of specularite. The matrix is brown and clayey, and apparently has developed some slickensided small walls. Dacite is supposed to overlie this "formation".

The Old Dominion Company is at present installing a new headframe and steel orebin, and has installed new hoist drums that will carry sufficient cable to reach the 2800

MINING PROSPECTS IN GILA, PINAL AND GRAHAM COUNTIES, ARIZONA

Report	Name of Property	Location	Class of Ore	Shipments	Remarks
45E	Abandoned Group		Au, Ag		Beckwith: Likely prospect.
22A	West Bros.	E-4	Cu	Some to Old Dom.	" Favorable small property.
26	Renfro		Cu		Old report favorable.
27	Gypsy Queen		Au, Ag,		Some good grade Pb-Zn mineralization.
36D	Dickson	D-4	Pb,Zn.		Leasing proposition, now owned by the King of Bronze Mining Co.
38	Callahan	B-3	Au, Cu.		Beckwith: Rich copper oxides with $20. gold ore.
40	Calumet and Copper Creek	F-5	Cu		2-3% Cu ore, and possible million tons can be developed.
41	Single Standard		Au		Beckwith: Favorable prospect.
45D	Grand Reef Mine		Cu, Pb, Ag	Some to El Paso	Strong vein in andesite, with some indications of secondary enrichment of copper minerals: Beckwith.
300	Iron Cap Copper Co.	D-5	Cu, Ag		Old, large producer in Globe district.
323	Ramrod Group		Cu		Small tonnage of oxidized siliceous copper ore: Botsford.
336	Crenshaw Reading and Mercer	D-4	Cu	Some 15% ore	Leasing proposition: Beckwith.
346	Lake Shore	G-2	Cu		Good prospect; estimated one million tons 2.65% oxidized copper ore: Beckwith.
354A	New Dominion		Cu	Some 7% Cu to Inter.S.Co.,1925 from surface.	Report by Botsford and Spilsbury inconclusive.
368A	Cons. H. & T. Co. North Group	E-4	Cu, Ag		Vein type resembles Magma vein. just south of Superior.

Report	Name of Property	Location	Class of Ore	Shipments	Remarks
384	Ray Silver Lead Mining Co.	E-4	Pb, Ag, Au	12,000 T -30% Pb 15 oz. Ag, $5 Au	50,000 T shipping ore: Botsford
400	Copper Butte Mines		Cu	470 cars of 4% to Hayden	Breccia containing copper carbonates. Management claims 100,000 T of 3%.
413	Molybdenite King	G-5	Pb, Ag, Au little Cu		Little development, but ore is fairly high grade.
429	Superior and Boston Copper Co.		Cu		Old producer in Globe district.
468A	Sombrero Butte		Cu	At least 9000 T of possibly 18%	Small productive lenses - developed ones probably worked out.
470A	Sunset Copper Mining Co.	F-6	Cu		Extension of Sombrero Butte; small lense of oxide ore developed.
471	Copper State Mining Co.	F-5-1/2	Cu		Spilsbury notes; N.Y. report gives estimate 1,410,000 T of 3.25% in lenses along shear in diorite. N. extension Som. Butte.
500	Troy-Arizona Copper Co.		Cu		Small orebodies in limestone.
501 26	Pinal Development Company.	E-4	Cu		Small orebodies in limestone.
519	McMillen Stonewall		Ag, Au	Old high grade Ag producer.	Beckwith: Not promising; small high grade lenses.
533	Cactus Copper Co. (Pinto D. Co.)	D-4	Cu		Report ~~un~~ in conclusive; hearsay estimate of 600,000 - 1,000,000 T ore developed.
542	Radium Mines Co.	D-4-1/2	Ag, Pb		Some high grade lead ore.
545	Husband and Hill	D-5	Ag, Cu	Some 9%/with Cu 300-400 oz. Ag.	Beckwith: Fair leasing property.
555	Mineral Butte	E-3	Cu		Spilsbury and Botsford: Possible ten million T of secondary ore.

Report	Name of Property	Location	Class of Ore	Shipments	Remarks
563	Brewery (now Carlota)	D-4	Cu	Some 5% to Magma	Leasers claim 45,000 T of 5% ore blocked out.
635	Lunsford Group	G-7	Pb, Zn, Ag little Cu		Some bunchy Ag-Pb ore. Adjoins Norquay group.
645	Norquay Group	G-7	Pb, Ag		Argentiferous galena in bunches thrhough quartz porphyry. Interesting geology.
647	Table Mt. Group	G-5-1/2	Cu		Limestone contact ore; small tonnage.
718	Red Hills Group		Cu, Au, Ag		Small seams-3-4" of chalcocite in granite. Several tons of high grade near surface.
752	79 Mining Co.	E-4	Pb, Ag, Cu	About 6000 t	Botsford: 20,000 T indicated; excellent leasing property. Slawick Allen reports the ... ½ ...
812	Snyder Group		Cu	Small shipment to I S Co. ran 13%	Small high grade lenses in Gibson district.
852	Bronx		Cu		Small veins in granite. Geologically interesting.
858	Queen mine	F-4-1/2	Au, Ag		Apparently leasing proposition.
883	Copper Prince		Cu		Worthy of some exploration for small tonnage.
897	Rio Grande Mining & Metals Company	C-4	Cu, Ag	Some assayed 15% Cu-9 oz.Ag	Strong vein structure with sulphides developed. Beckwith did not see underground work.
899	San Juan Group	E-7	Cu		Botsford and Beckwith: Estimate one million tons 3% Cu; estimate made from old drill records.
900	Ariz. Quicksilver Ord Group.	C-3	Hg		Botsford: Excellent prospect.
901	Lone Star		Cu, Ag		Probably not a disseminated deposit, but may be a small producer.

Report	Name of Property	Location	Class of Ore	Shipments	Remarks
903	Mammoth Mine	F-5	Au, Mo, Pb Zn	300,000 T of $6-$9 Au Ore	Beckwith: Good chance to be a lead producer.
910	Edwards Group	F-4	Cu, Ag		Beckwith: Mineralized area to small for ICCCo.
911	C&B Vanadium Group		Pb, V		Small carbonate orebodies on limestone contact.
920	Moniton Group		Cu, Ag		Beckwith: Some merit as a small proposition.
914	Ray Integrity Min.Co.	~~E-4~~	Pb, Ag		Some lenses of good ore in schist; small possibilities for any large tonnage.
928	Alimo Group	F-5	Pb, Ag		NW extension of the Collins vein of the Mammoth Mine.
929	Gila Canyon Copper	E-5	Cu		Considerable oxide copper showing. Owners claim 250' crosscut assays 2.43% Cu.
950	Silver Ball Mine	E-4	Pb, Ag	Shipping to El Paso	Old Silver producer. Beckwith thinks too low grade, but property is in operation.
954	Money Metals		Au, Ag, Pb Cu		Beckwith: Good looking prospect.
957	Apache Vanadium Corp.	D-5	Pb, V, Ag		Beckwith: Excellent prospect.
960	Mineral Basin Copper Co.	E-4-1/2	Au, Ag, Cu Pb, Zn		Complex ore in persistent veins with bunchy mineralization.

FOLLOWING PROPERTIES HAVE MADE SHIPMENTS TO INTERNATIONAL SMELTER

20	Ariz. Globe		Cu, Ag	5.9% Cu, 1 oz. Ag 1925	Old Cole Goodwin property in Gibson district.
	Atlantis Min. Co.	B-3-1/2	Cu	11.9% Cu 1929	No ICCCo report, but map by Min. Bureau shows a curved vein structure that resembles Cananea Duluth. Probably warrants some geo-

Report	Name of Property	Location	Class of Ore	Shipments	Remarks
					LOGIC examination.
	Bob Tail Mines	E-5	Cu	5% Cu 1928	Near Doak on south side of Pinals.
337	American Mines	D-4	Cu	3.4% Cu 1930	Gibson District.
	Belcher		Cu, Ag	11.5% Cu, 3 oz. Ag 1929	In Pinals ?
	Braley		Cu	4.2% Cu, 82.2% SiO_2	Ships from Red Rock.
505	Bellevue Copper Co.		Cu	14.6% Cu 27.6% Cu 16.6% Cu	Gibson Mine in 1930
	Central Copper Co.		Cu, Au, Ag	16.9% Cu 24 oz.Ag $8.60 Au	Dos Cabezas
	Forbes and Corn		Cu	8% Cu	No information.
	Kinney		Cu	5% Cu 12 oz. Ag	Gibson district beyond Cole Goodwin.
	Pinal Development Co. Loraine Copper Co.		Cu	26.7% Cu	South of Gibson Mine. 1925.
	Bankers Group		Cu	5.7% Cu	Near Radium.
	Louis d'Or Lease		Cu	4-6% Cu	Siliceous ore from sedimentary bed.
	Tonto Cons. Copper Co.		Cu	14% Cu	Near Payson.