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KEEP THIS ON TOP

Subject: EXPLORATION RECORD SHEETS - #6
SOUTHWESTERN EXPL. DEPT. -

From: January 1985 - December 1988

WXK - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] Submittal

Section I General Indexing

① Name(s) of Property or Area: Robert Merrill Prospect Little Maria Mtns.					② Country: USA	③ State or Province: Riverside Co., CA	
					④ USGS Quad.: Inca Siding 7.5'	⑤ File or Gore No.	
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Salton Sea	Township: 4S	Range: 21E	Section	⑨ Examined by: MAM, HGK	⑩ Date: 2/17-20/88
						⑪ Office: Tucson	⑫ Field Days

Section II Sources of Information

Date Typed 3/10/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Submittal - Various Consultant's Reports - Attached.				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Low Priority

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes ____ Approx Total Footage ____

⑲ Excavations Several v. sat small pits.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached ALL VALUES IN PPM'S

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au

㉔ Ore Minerals-Major: Au; Minor: CuOx

㉕ Host Rocks-Major: Granites, Limestone (Marble); Minor:

㉖ Age of Host Rocks: Mesozoic, Paleozoic

㉗ Nature of Exposures: Abundant outcrop >15% on hillsides and ridges.

㉘ Alteration: Extensive limestone altered to marble-epidote, calcite, some magnetite adjacent to contact.

㉙ Total Extent: → 100' from intrusive ?

㉚ Structure: Poss. low angle fault on S. range front dipping → S., but majority of area is contact skarn related to the granite intrusives.

㉛ Ore Occurrence: Intrusive ? - shear zones (?) in Gold Hill Area assoc. with CuOx, but main target would be under pediment in low angle fault breccia-possible Copperstone

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: Contact skarn is very abundant; however, it has been extensively sampled & shows only very erratic very low grade Au Min. Poor trace element response. I did not sample around Gold Hill as this area has also been sampled; however, a possible target may exist under pediment and Gold Hill showings may be leakage veins. Vein structures go under pediment within several hundred feet of exposure on hillside.

Why? Why did you sample there? Well you have to decide if this a target?

(For additional space use extra sheets)

LITTLE MARIA MOUNTAINS
Robert Merril Submittal
LMM-88 Prefix

ALL VALUES IN PPM'S

LMM-88

1	South face pt. rexln, the bedded limestone --> marble slt pinkish color @ southern end of sample estimate ~1% remnant sulfides (lim after py) 10' true thickness. N10°W 55°N. Au .015, Ag .05, As 10, Sb <1, Hg .14.
2 & 3	Strong limonite gossan ~35' of section samples. LMM-88-2 - Au .015, Ag .20, As 90, Sb 7, Hg .20. LMM-88-3 - Au .010, Ag .65, As 18, Sb <1, Hg .15.
4	AA but poss. chlorite or altered amphibolite semi consolidated sand. Au .005, Ag .25, As 20, Sb 1, Hg .10.
5	Carbonate not marble but bleached limestone north contact with gossan. High angle contact mod. broken and sheared.
6	Epidote, calcite zone in skarn ~4' thick where sampled hm spots in epidote. Au <.005, Ag <.05, As 8, Sb 2, Hg .10.
7	Tm <1' silk zone. Appears to cross-cut granite slt sericite abu fig blk biotite N40°W. Au .010, Ag .35, As <2, Sb <1, Hg .06.
8	Small pit CuOx present (4x6') along fracturs. Epidote along fractures and in shear zones N40°E 50°N. small skarn?? Sample represents 4-5' thickness. Occ. quartz veins within bedding minor limonites, possible jarosite. Au .060, Ag .85, As 4, Sb 2, Hg .28.
9	Silic quartz limonite zone. Possible fault zone; along extension of 88-8 pit abundant limonite or goethite. Au .010, Ag .65, As 6, Sb <1, Hg >5.00.
10	Adit. py poss. cpy in alt limestone (now marble) some minor epidote also calcite veinlets parallel to bedding located at edge of intrusive mass. Probably related to gossan @ 88-2-4. Au .010, Ag .85, As 12, Sb <1, Hg .16.

LMM-88

11 Limestone @ edge of intrusive completely altered to marble. Sample represents ~15' section little Fe staining.
Au <.005, Ag <.05, As 10, Sb <1, Hg .06.

12 Felsic? VFG dike within granite intrusive. Light green VFG adjacent to B-88-13.
Au <.005, Ag .20, As 8, Sb 3, Hg .04.

13 Strong limonite/gossan zone with quartz stringers and veins.
Au .005, Ag .10, As 90, Sb 14, Hg .04.

14 Unit within massive limestone N70°E 10°N. North side of Cactus Flower area. Red colored limestone at intrusive contact, loc. siliceous.
Au .010, Ag <.05, As 6, Sb 1, Hg .03.

15 Random chip of limestone on ridge.
Au <.005, Ag .15, As 6, Sb <1, Hg .02.

16 Jasperoid? Magnetite zone within limestone skarn related? Zone is 25' wide.
Au .005, Ag .15, As <2, Sb <1, Hg .04.

17 Biotite granite <1% magnetite as xls- feldspar vein slightly alt-->clay?? Some Fe stain but only on surface fracturing N30°W.
Au <.005, Ag .20, As <2, Sb <1, Hg <.01.

18 Fe stained partly silic limestone float on prominent but subdued ridge ~ surrounded by granite on both sides.
Au <.005, Ag .15, As 12, Sb <1, Hg .02.

19 Patton Hills - silic limestone heavy Fe stained on surfaces. Desert Varnish? Sample represents ~25' thick section N60°W 18°SW. Debris flow overlies silic limestone on south side.
Au <.005, Ag .25, As 46, Sb 1, Hg .04.

20 Limestone chip rep ~200' of outcrop. Limestone is buff color. Local red Hm staining stratigraphically above silic limestone. Unit is 100-150' thick Msv bedded.
Au <.005, Ag .20, As 12, Sb 2, Hg <.01.

21 Contact between limestone and granite but granit is sampled. Dramatic decrease in epidote up section away from contact. Rep. 30-' vertically.
Au <.005, Ag .20, As 4, Sb <1, Hg <.01.

LMM-88

22 Quartz vein at contact. Appears brecciated ~2' thick. Formed or "occurs" at intrusive contact.
Au <.005, Ag .20, As 2, Sb <1, Hg <.01.

23 Limestone below contact of 21, 22. Siliceous; mod -->strong but still fizzes. Rep. ~15' of section.
Au .005, Ag .25, As 8, Sb <1, Hg .04.

24 Prospect Pit 8"x8" Cu Ox with Hm in limestone, grab chip.
Au .050, Ag 1.10, As 125, Sb <1, Hg .06.

25 AA but epidote only fault contact with CuOx.
Au <.005, Ag .40, As 40, Sb 2, Hg <.01.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 514
March 3, 1988

ASARCO INCORPORATED
Attn: Mr. Mark Miller
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 14 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
1	LMM-88 1	.015	.05	10.	<1.	.14
2	LMM-88 2	.015	.20	90.	7.	.20
3	LMM-88 3	.010	.65	18.	<1.	.15
4	LMM-88 4	.005	.25	20.	1.	.10
5	LMM-88 6	<.005	<.05	8.	2.	.10
6	LMM-88 7	.010	.35	<2.	<1.	.06
7	LMM-88 8	.060	.85	4.	2.	.28
8	LMM-88 9	.010	.65	6.	<1.	>5.00**
9	LMM-88 10	.010	.85	12.	<1.	.16
10	LMM-88 11	<.005	<.05	10.	<1.	.06
11	LMM-88 12	<.005	.20	8.	3.	.04
12	LMM-88 13	.005	.10	90.	14.	.04
13	LMM-88 14	.010	<.05	6.	1.	.03
14	LMM-88 15	<.005	.15	6.	<1.	.02
15	CMM 88-16	.005	.15	<2.	<1.	.04
16	CMM-88 17	<.005	.20	<2.	<1.	<.01
17	CMM-88 18	<.005	.15	12.	<1.	.02
18	CMM-88 19	<.005	.25	46.	1.	.04
19	CMM-88 20	<.005	.20	12.	2.	<.01
20	CMM-88 21	<.005	.20	4.	<1.	<.01

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 514
March 3, 1988

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
21	CMM-88 22	<.005	.20	2.	<1.	<.01
22	CMM-88 23	<.005	.25	8.	<1.	.04
23	CMM-88 24	.050	1.10	125.	<1.	.06
24	CMM-88 25	<.005	.40	40.	2.	<.01
25	PA-1	.140	4.50	155.	40.	1.20

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

**NOTE: Greater than normal geochemical range. Please advise if additional analysis is needed.

cc: Mr. J. D. Sell

REGISTERED ASSAYER
CERTIFICATE NO. 9425
WILLIAM L. LEHMBECK
DATE SIGNED
Arizona, U.S.A.

William L. Lehmbeck
Manager

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
MESQUITE EAST PEDIMENT	USA	California
	④ USGS Quad. Quartz Peak	⑤ File or Gore No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°05'	114°54'30"	Salton Sea	12S 13S	20E 20E	29-32 5-8	H.G. Kreis	2&4-1987
						⑪ Office Tucson, SWED	⑫ Field Days ≥ 7

Section II Sources of Information

Date Typed 5/13/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K., 1977, Geol & Min. Res. of Imperial County; CDMG County Report 7				
Miller, M., 5-3-1985, Hyduke Claims, Black Mountain; Asarco memo to J.D. Sell				
Kreis, H., 3-31-1987, March 1987 Monthly Rpt; Asarco report to R.L. Brown				

- Continued on Page 2 -

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [X] Pediment Prog.

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None (?)
Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au potential

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major: Chuckwalla schist-gneiss and/or Orocopia gneiss.

㉖ Age of Host Rocks: 160-180 million years (60 million years metamorphic age)

㉗ Nature of Exposures: Abundant premineral outcrops of Orocopia schist on NW side of pediment; no premineral outcrops to southwest, south, or southeast; and (cont. on pg.2)

㉘ Alteration: Alteration is not known to exist under the pediment.

㉙ Total Extent _____

㉚ Structure: Structure under pediment unknown. Strong WNW & NW structural control of gold mineralization at Mesquite. Well developed WNW trend of gold (continued on pg. 2)

㉛ Ore Occurrence: The presence or absence of alteration-mineralization under the Mesquite East pediment is unknown. The Mesquite East pediment is close to Mesquite, and it is possible (Continued on page 2)

㉜ Age of Mineralization _____

㉝ Conclusions & Recommendations: The Mesquite East pediment with its placer gold is permissive for buried Mesquite type gold mineralization. Its close proximity to Mesquite is its most favorable asset. The only known pediment drill holes are located on the south edge of Mesquite East. From the south edge of Mesquite East, Gold Fields Mining Co. drilled 93 rotary drill holes on a north-south line, 5 miles long (see attached map). The holes, spaced 300' apart, were drilled to an unknown depth and it is not known if they intercepted bedrock. (Continued on page 2).

(For additional space use extra sheets)

13. References (continued)

Kreis, H., 1-9-1987, Exploration Parameters of the Mesquite Gold Deposit; Asarco memo to J.D. Sell.
Kreis, H., 1-14-1987, Additional Comments on the Exploration Parameters of the Mesquite Gold Deposit; Asarco memo to J.D. Sell
Kreis, H., 10-20-1986, Mesquite Mine; Asarco memo to J.D. Sell
Kreis, H., 7-8-1987, Old Channel Shaft; Asarco ERS
Kreis, H., 5-10-1988, Hyduke Claims; Asarco ERS
Kreis, H., 8-27-1982, Imperial Gables Property; Asarco memo to G.J. Stathis
Kreis, H., 5-12-1988, Gold Fields Exploration Drill Hole Locations (east of Mesquite to Picacho Mine); Asarco memo to files.

Willis, G.F., Geology and Mineralization of the Mesquite Open Pit Gold Mine; GFMC report handout at 10-17-1986 AGS field trip to Mesquite.

27. Nature of Exposures (continued)

only a few, very small premineral outcrops to the east (Hyduke). To the south, Gold Fields drilled a N-S line of exploration holes on a 300' spacing starting in the NW corner of Sec. 7 (T13S, R20E) and continuing five miles to the south. The results of these drill holes are not known; but, considering a lack of offset holes, it is reasonable to assume the results were negative (i.e., no mineralization or no shallow bedrock).

30. Structure (continued)

mineralization and prospects from Mesquite Mine to Picacho Mine (see attached map of gold deposits and Gold Field's exploration drilling programs).

31. Ore Occurrence (continued)

that Mesquite type gold mineralization occurs under the Mesquite East pediment gravels. The presence of old, but still valid, placer gold claims throughout the Mesquite East area is evidence of the placer gold mineralization that is reported to occur there. The source of the placer gold is not known, but conceivably it may have originated from the now covered bedrock of Mesquite East. Ankerite veinlets, ≤2" thick, at sites QP-8 and -9 in the NE corner of Section 36 (T12S, R19E) could be the distant fringe of Mesquite type mineralization under the Mesquite East pediment. The lack of substantial fringe type mineralization in the outcrops bordering the pediment is not conclusive evidence the bedrock beneath Mesquite East is likewise unmineralized. For example, barren muscovite schist was juxtaposed on top of the west side of the Mesquite gold deposit by a low angle, post-mineral fault. Although there is no outcropping evidence of such a fault at Mesquite East, the possibility for such faulting exists.

33. Conclusions & Recommendations (continued)

The owners of the placer and lode claims on and about Mesquite East should be contacted to find out if any drilling was done on Mesquite East.

why not already done by HGK?

If no drilling has been done on Mesquite East and the claims can be optioned at little or no initial cost, it is recommended Asarco drill ten 500' deep holes on 1000' centers along a north-south line through the center of Mesquite East.

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY — Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

Ms

Orocopia Schist

163 mm yr (60 mm yr. metamorphic age)

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

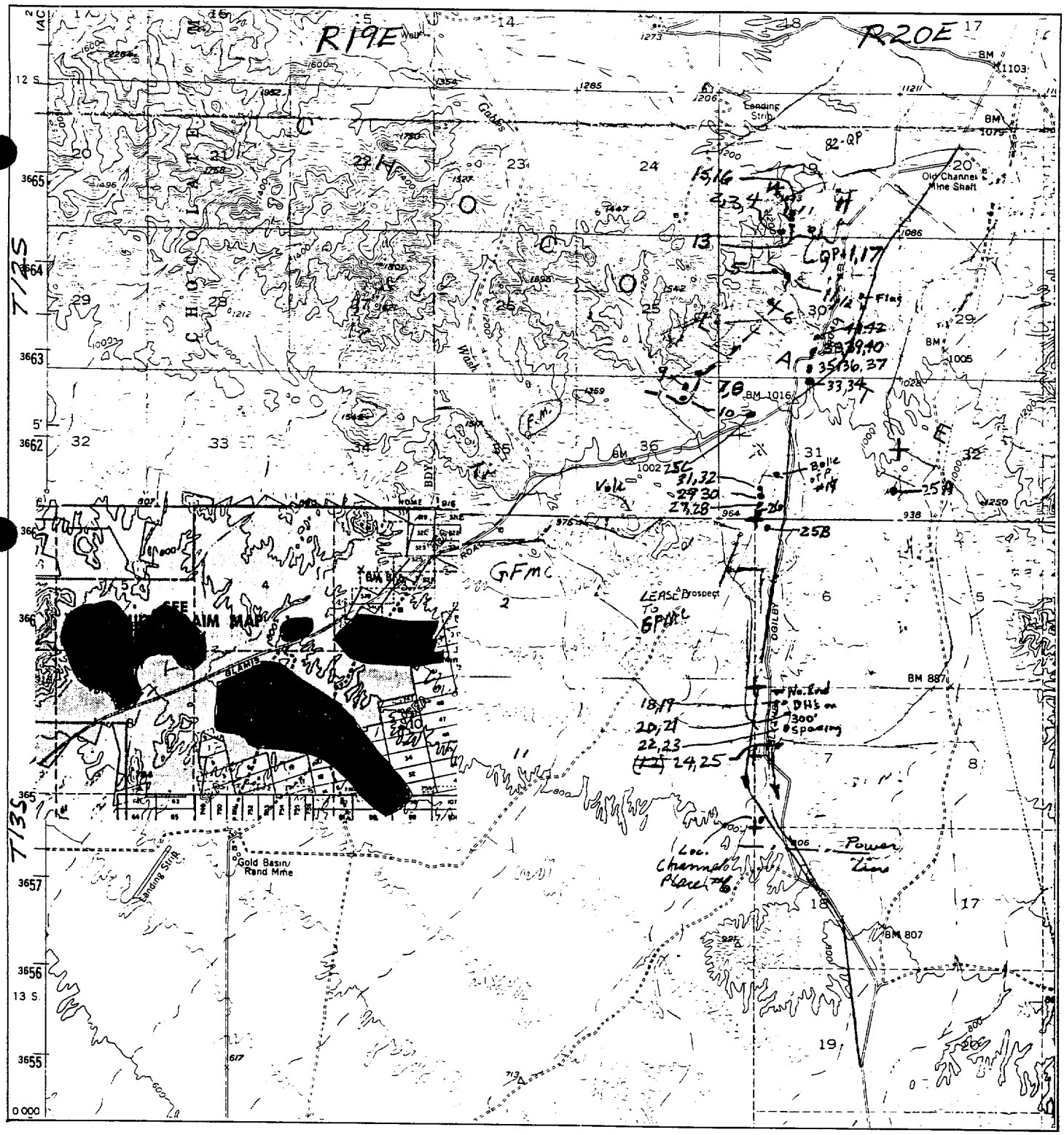
mc

Chuckwalla Complex

166-170 mm yr (bio. gneiss)
≈180 mm yr (hbl gneiss)

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

ASARCO Incorporated
1988 GOLD PROGRAM



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 12S / 13S **Rng.:** 19E / 20E **Sec.:** —

Prospect Name: MESQUITE EAST SAMPLE SITES

State: CALIF.

County: IMPERIAL

District: MESQUITE MINE AREA

SCALE: 1" = 1 mile

map no. HGK **date** 5/9/88

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

CORRECTED COPY
JOB NO. TAJ 478
June 19, 1987

ASARCO INCORPORATED
Attn: Mr. H. G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

ASARCO Incorporated
JUN 26 1987
SW Exploration

Analysis of 62 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
1	QP-02	.03	
2	QP-03	.01	
3	QP-04	.03	
4	QP-05	.01	
5	QP-08	.03	
6	QP-09	.01	
7	QP-10	.01	
8	QP-11	.02	
9	QP-12	.03	
10	QP-13	.01	
11	QP-14	.01	
12	QP-15	.01	
13	QP-16	<.01	
14	QP-17	.01	

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
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ITEM	SAMPLE NO.	Au (ppm)
26	QP-40	<.02
27	QP-41	<.02
28	QP-42	<.02
29	OC-1A	<.02
30	OC-2A	<.02
31	OC-3A	<.02

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L.
LEHMBECK
ARIZONA

William L. Lehmbeck
Manager
6/5/87

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 486
June 5, 1987
QP-18 TO OC-3A

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 28 Soils and 3 Rock Chip Samples: HBr-AA 20g

ITEM	SAMPLE NO.	Au (ppm)
1	QP-18	<.02
2	QP-19	<.02
3	QP-20	<.02
4	QP-21	<.02
5	QP-22	<.02
6	QP-23	<.02
7	QP-24	<.02
8	QP-25	<.02
9	QP-25A	<.02
10	QP-25B	<.02
11	QP-25C	<.02
12	QP-26	<.02
13	QP-27	<.02
14	QP-28	<.02
15	QP-29	<.02
16	QP-30	<.02
17	QP-31	<.02
18	QP-32	<.02
19	QP-33	<.02
20	QP-34	<.02
21	QP-35	<.02
22	QP-36	<.02
23	QP-37	<.02
24	QP-38	<.02
25	QP-39	<.02

ASARCO Incorporated
JUN 11 1987
SW Exploration

H. G. KREIS
MARCH, 1987

RECON. SOUTH OF IMPERIAL GABLES PROSPECT SEC 19, 25, 30, 31, 36 T12S R20E

QP-1 No sample. Few 1"-6" thk. ankeritic carbonate veins in 100' wide zone (NNE'ly strike) in Oroc. Sch. Qtz latite dikes are essentially unalt. except for mafics oxidizing to goe. Few 1" thk ankeritic veins scattered for next 1000' to SW. Sampled by QP-17 at QP-1 site.

-2 Sample. 5'-10' thk silicified flt(?) vein in Oroc. Sch. Strikes N65°W, dips ≈25°N

-3 Sample. 6' thk. Same geol as QP-2. Taken at top of ridge to W. of QP-2

-4 Sample; 10' true thickness. Wkly sericitized Oroc. Sch. (biot. → ser.) w/ wk ankeritic carbonate veins on fractures. Taken in F.W. just below QP-3. Foliation, N15W, 35°S, below F.W. of vein. H.W. fol. is N45W, 45°S.

Note: Samples QP-2, 3 & 4 are in a zone that may be upto 50' thk as there are a couple 1'-2' thick veins, similar to QP-2, in F.W. below QP-3 & 4. More samples needed to know gold content. Extends under Qal to east and segments of it can be seen to west of QP-3.

-5 Sample. Carbonate (calcite) rich beds in Oroc. Sch, 3' thk.

-6 No sample. ~~Many~~ Is the southern limit of v. wk ankeritic carbonate veining. Roughly a ≥1/4" vein every 100' from QP-1 to QP-6 (vns rarely > 2" thk). From QP-6 to QP-7 still carbonate veins and rare white bull quartz pods (typically 1' by 4'). From QP-1 to QP-6 white bull qtz pods are on 100 to 200' centers

-7 No sample. Qtz vein or pod, 2' thick × 30' long, weathered out boulders.

Cont.

QP-8 Sample, taking only ankeritic carbonate veinlet material. ½% ankerite veinlets commonly following N70°E, vert. foliation in schist. Veinlets are ⅛" to ½" thick. Sample collected over 100' long N-S traverse from QP-7 on north end. Fol. is N50°E, 65N 400' to SW.

-9 Sample same material (ank. veinlets) & geol. as QP-8.

-10 Sample of several qtz veins, 2" to 2' thk, in chlorite schist (chloritized amphibolite?).

-11 Sample of carbonate (ankeritic) veinlets between claim corner Inco $\frac{59|39}{60|40}$ and QP-12 which is 200' to NE of this claim corner. ≤⅛% abundance of carb. veinlets & they appear related to vein at QP-12.

-12 Sample. Schist Foliation N50E, 30°S in Quocopia. Vein strikes N60W, 45°N. Sample of vein, ½' thick, brecciated schist with 30 to 80% ankeritic carbonate.

-13 Sample. ¼" thk ankeritic carbonate veinlets from float & outcrops following contour 200' along hillside starting from Loc. Mon. for Inco 37&57 on the south.

-14 Sample. 1"-3" thk. carb. (ankeritic, minor qtz) veins striking N45-65°W, vert. Foliation N-S, 30W. Taken along 300' N-S traverse starting 300' due north from claim loc. mon. at QP-13 & going north.

-15 Sample. 1" thk. ankeritic carb. vns. N20-50W w/ stp. dip. Sch. Fol. N75°E, 45°N.

-16 Sample, 3'-5' thk silicified (wk to mod) schist vein. Wk FeOx & trace CuOx in F.W. Vein strks N70°W, 45-55°N. Sch. fol. N55E, 35°N.

QP-17. Sample, 1" thk. ankeritic carb. veins having approx. N10-40°W strike.

QP-18 Sample, -60 mesh, 412' down wash from section line, conglom in bank, horizontal bedding
-19 " " " " " " Qal in drainage
Remark: Anomalously abundant ankeritized and silicified schist in Qal in wash. Mineralized schist appears less abundant in conglom.
-20 Sample, -60 mesh, 950' down wash, conglom in bank Horiz bedding
-21 " " " " " Qal in drainage
-22 " " 1450 " " Cong. in bank
-23 " " " " " Qal in wash
-24 " " 2100 " " Cong in bank
-25 " " " " " Qal in wash

Remark: Southern Belle Placer
Robert Sanregret 1800N Bdwy Ste 200 Santa Ana CA 92706
714-547-8451
Remark: Big Ben #8 (¼ cor 31, 32)
Ned Hyduke Box 368 Palo Verde CA 92266

-25A Sample. Qtz-feld. porphyry (typical Laramide type texture). Extrusive flow?. Wk transported FeO_x (probably from matf (goeth.) on some fract. High graded sample of pieces w/ FeO_x and silicified like fract. (bxd minor NE striking up to ½" thk). N60E to 3 power poles. Pre or post mineral age? -- pre Postmaster Vein mineralizat

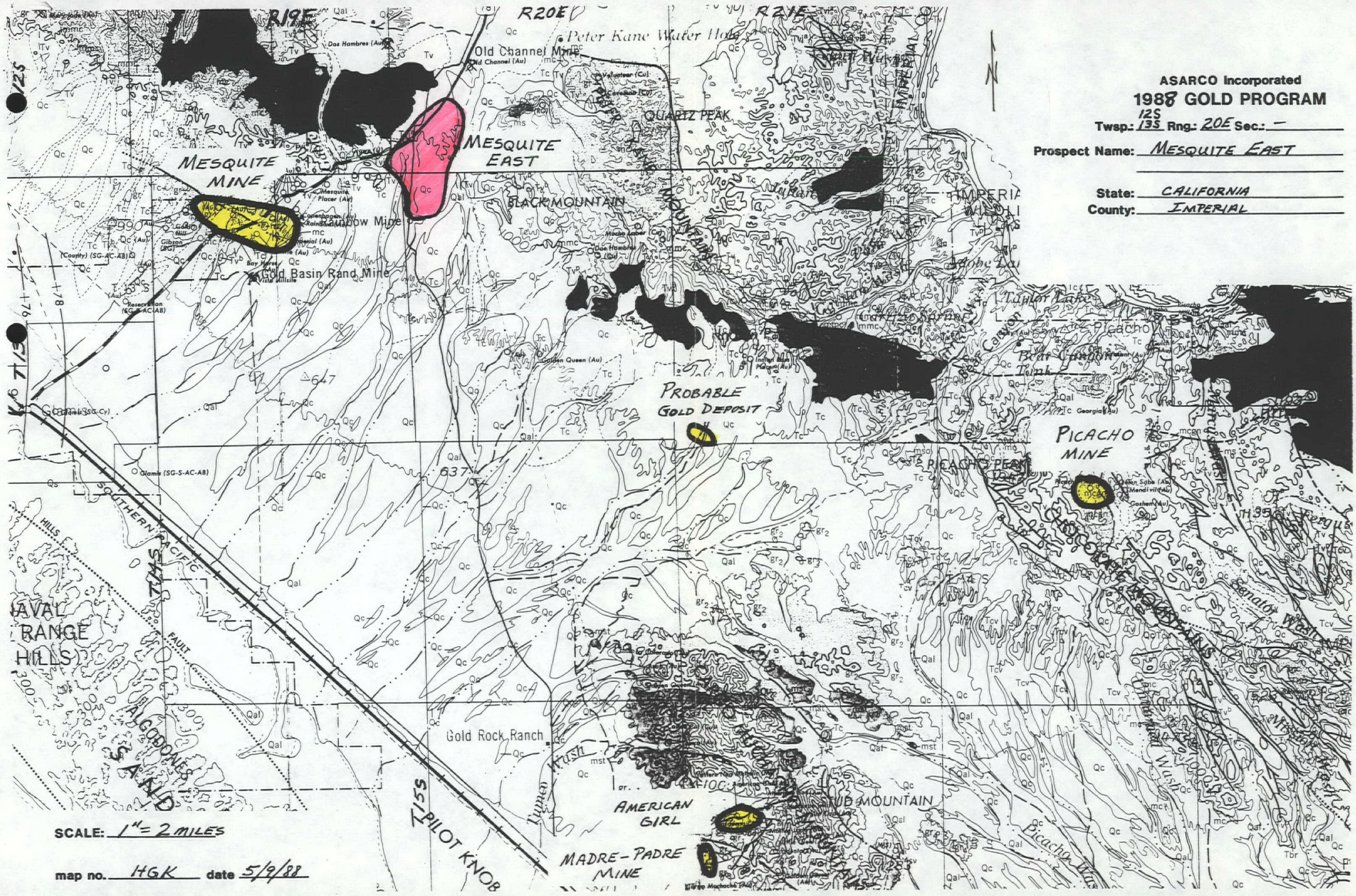
-25B Sample. 2' boulder float. Qtzite (?) bxa with wk FeO_x stain. Possible 0-¼% former py in fract. Large, 2' diam, qtzite blouders seen in 1, 6, 5, 7, 31, 32 of this area.

-25C Sample, outcrop. Highly weathered, tan colored, tuffaceous volc. or sed. w/ bxd wht qtz veins (≤1%, ≤1" thk). May be post mineral (Au) age.

QP-26 Sample, -60 mesh, drainage Qal, where section line crosses wash.
-27 " " , 8' high bank of conglom, 550'N of QP-26
-28 " " , Qal in wash, " " " "
-29 " " , 8' high bank of conglom 830' " " "
-30 " " , Qal in wash, 830' " "
-31 " " , 3' high bank of conglom, 1350 N " "
-32 " " , Qal in wash, " " "
-33 " " , 4' high bank of conglom, 150'N of road
-34 " " , Qal in wash, " " " "
20% fine, 15% sand-clay -35 " " , 4' high bank of conglom, 650'N " "

Conglom. has 8-10° North apparent dip & is overlain by 3' of ±horizontally bedded, v. whitely cemented Fanglomerate (recent)

<2% fine sand -36 Sample, -60 mesh, Qal in wash, 650'N of road.
15% fine sand-clay -37 " " " 3' thickness of fanglom on top of QP-35, 650'N of Rd
-38 " " " , Conglom 4' high bank 10°N app. dip, 1100'N of road
-39 " " " , Qal in wash, " " " "
-40 " " " , Fanglom as in QP-37, " " " "
-41 " " " , " " " " , 1650'N " "
-42 " " " , Qal in wash, " " "



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 12S 13S Rng.: 20E Sec.: –

Prospect Name: MESQUITE EAST

State: CALIFORNIA

County: IMPERIAL

SCALE: 1" = 2 MILES

map no. HGK date 5/9/88

ASARCO Incorporated

1988 GOLD PROGRAM

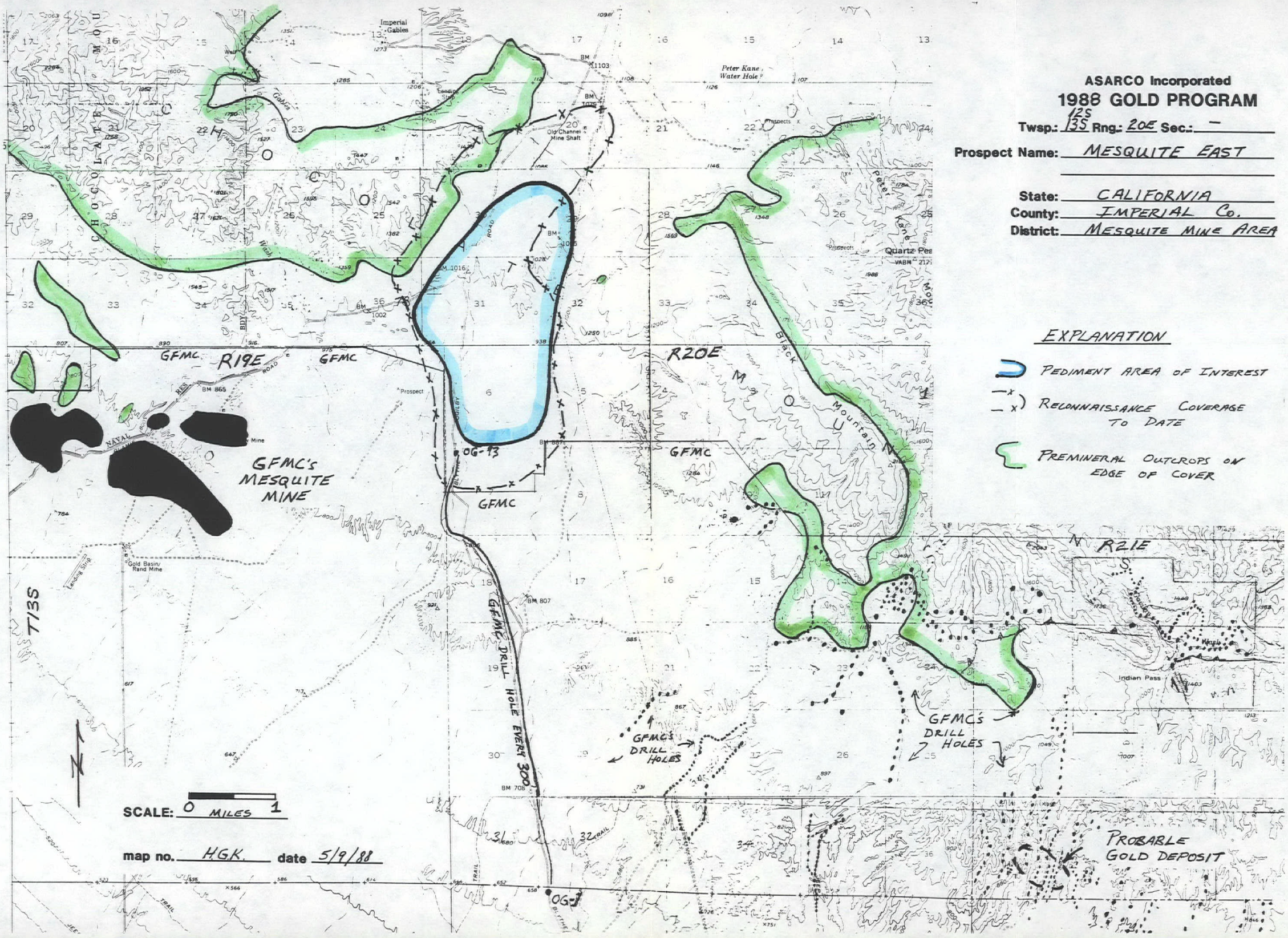
Twsp.: 12S 13S **Rng.:** 20E **Sec.:** –

Prospect Name: MESQUITE EAST

State: CALIFORNIA

County: IMPERIAL Co.

District: MESQUITE MINE AREA



No Time

Calif

TO ~~J. DeSelt~~

Black Butte Claims

If a low zone is the "set" why didn't they determine that when they were there? Why will the field do on next visit if they didn't see it on first?

Save me time if Mark wrote good value on simple description - it does not have to be typed.

Land position = field progress report?

WK:

McMillin & Tabla Vista reported verbally that they had traversed much of the country & could not find the reported drill area.

The gold & arsenic "smell" prompted their reevaluation on further checking the area. — including along strike to the east where the fault projects into better topography. Also, since the zone dips north, it was brought to their attention, verbally, that the mine/pits to the NE should be investigated in light of detachment tectonics.

The long interval since previously submitted is due to both my & Marks (independently) being unable to find the zone in a first pass in the late spring and the lack of getting back in the area.

2/5/88

MVK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [X] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Black Butte Claims	USA	California
	④ USGS Quad. Chuckwalla 15'	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°31'36"	115°29'30"	Salton Sea	T7S	16E	33	M.Miller/T.DallaVista	1/13-14/88
						⑪ Office Tucson	⑫ Field Days 2

Section II Sources of Information

Date Typed 2/2/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Property Submittal	5/2/85			

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Reexamine ?

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
Gold?	?	?

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations Several Pits & Trenches & Oper.Cuts

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals · Gold, Silver

㉔ Ore Minerals-Major Gold Silver Minor Cu?

㉕ Host Rocks-Major Augen Gneisses & Schists Minor

㉖ Age of Host Rocks Poss PЄ - or Jurassic in Age?

㉗ Nature of Exposures Open cuts & few trenches

㉘ Alteration Strong Hematitic Alteration around main prospects. poss. chlorite alt. in F.W. or mafic dike??

㉙ Total Extent ~ 10' above & below Qz Breccia zone

㉚ Structure Appears to be a fault (Qz Breccia) zone striking N80°W 50°N zone is 1-2' thick with +200' of exposed strike length.

㉛ Ore Occurrence ? Presumably associated with rem sulfides (limonite) and hematite also associated with Qz breccia zone.

㉜ Age of Mineralization ?

㉝ Conclusions & Recommendations Assay results indicate strong As anomalies associated with altered gneisses. Coincident with the arsenic anomalies are low grade (~240 ppb gold). The structure seems to be favorable but not very large in extent (<100' in O.C.). By itself the prospect is not very attractive but data attached with the submittal indicated 70 holes drilled on six claims indicates significant gold/silver mineralization in 60-70' drill holes. A geologically possible scenerio is that there may be a lower "plate" or thrust slice which (Cont. pg. 2)

(For additional space use extra sheets)

less than ?

33. Conclusions & Recommendations (Continued)

is hosting gold mineralization. Recommendations are another visit to determine whether a lower zone may exist and whether it outcrops. The other option and probably the more likely is that the drill data is not real. Six claims were staked over the area.

– you didn't see it on first trip?

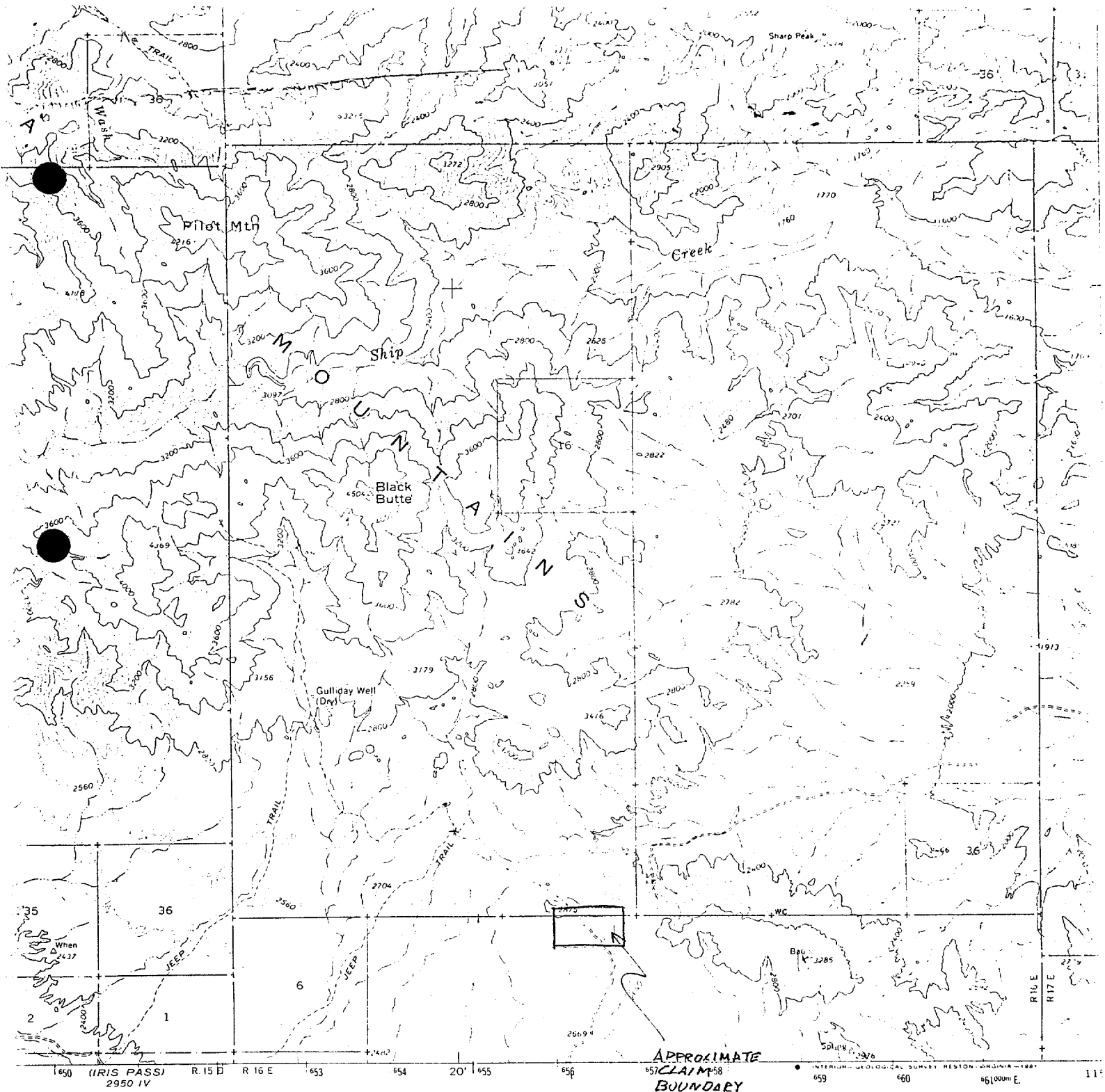
15LT3VCA
DISC TITLE

BLACK BUTTE - SAMPLE DESCRIPTIONS

Chuckwalla Mountains
Riverside County, CA

Mn Gold Skyline

.01	BB-88-1	Fractured & oxidized (hematitic) lt gy schist (gneiss) whs Qz stringers & joints mostly on a NE strike & SE dip.
<.01	BB-88-2	A.A.
<.01	BB-88-3	50'N & SE of #1 same type rock but less intense fracturing and hematite.
.24	BB-88-4	Fault zone gougy oxidized.
.04	BB-88-5	Chlorite zone (poss. diabase dike) barren looking in F.W. of breccia fault zone.
<.01	BB-88-6	Pegmatite +/- and. schist (micaeous) looks unaltered, misc. grab. 5' tk.
.13	BB-88-7	Qz breccia zone 1-2' thick. N80°W 50°N strong hematite staining. rounded frags. some angular silicified zone. Little limonite casts.
.06	BB-88-8	F.W. of structure 5' thick zone where exposed. Hm stained. gneisses. Pinkish feldspar.
.05	BB-88-9	Strong sheared hematite stained zone gneiss @ H.W. also some quartz breccia.



SCALE 1:62500

1 2 3 4 MILES

6000 9000 12000 15000 18000 21000 FEET

1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 80 FEET
TTED LINES REPRESENT 40-FOOT CONTOURS
ATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

Heavy-duty — Light duty
Medium-duty — Unimproved dirt
U.S. Route

CALIF

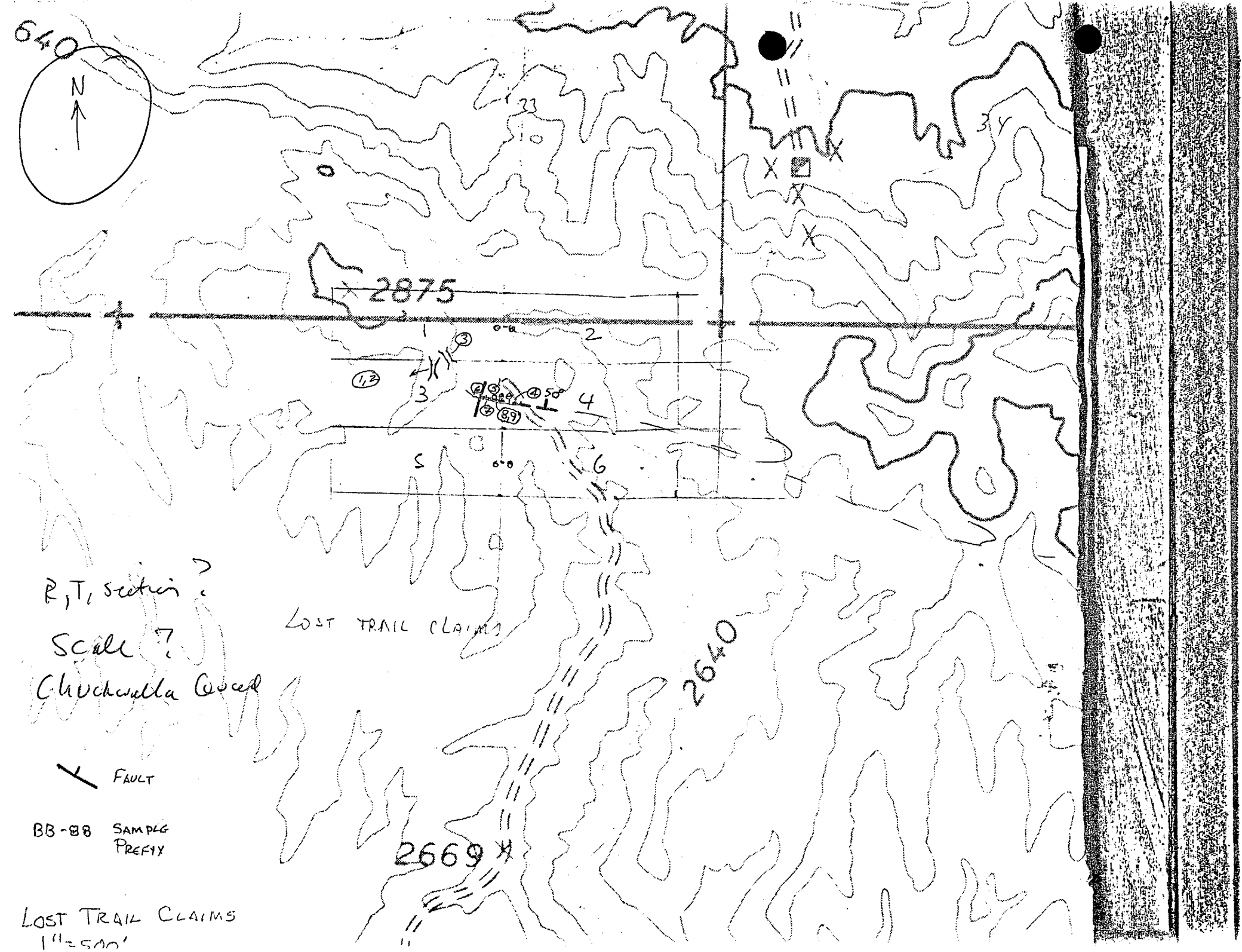
QUADRANGLE LOCATION

P COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
ICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
BING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CHUCKWALLA MOUNTAINS, CALIF
N3330—W11515/15

1963

DMA 2951 III—SERIES V795


640
N
33
34
2875
1
2
3
4
5
6
1,2
50°
2640
2669
LOST TRAIL CLAIMS
R, T, section ?
Scale ?
Chuckwalla Quad
FAULT
BB-88 SAMPLE PREFIX
LOST TRAIL CLAIMS
1"=500'

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 512
January 25, 1988
BB: 88 1-9

ASARCO INCORPORATED
Attn: Mr. Mark Miller
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
JAN 28 1988
SW Exploration

Analysis of 9 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Hg (ppm)	Sb (ppm)
1	BB: 88 1	.01	.05	55.	.04	<1.
2	BB: 88 2	<.01	<.05	95.	.12	<1.
3	BB: 88 3	<.01	<.05	65.	.04	<1.
4	BB: 88 4	.24	.15	2000.	.06	5.
5	BB: 88 5	.04	.25	320.	.04	<1.
6	BB: 88 6	<.01	.05	14.	.02	<1.
7	BB: 88 7	.13	.55	980.	.09	2.
8	BB: 88 8	.06	.25	42.	.04	<1.
9	BB: 88 9	.05	.30	410.	.05	<1.

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. J. D. Sell

REGISTERED ASSAYER CERTIFICATE No. 9425 WILLIAM L. LEHMBECK DATE SIGNED Arizona

William L. Lehmbeck
Manager

WDK - ER File

C.Kunkes, owner
235 Unpat Lode Claims
4.5% NSR with $2 million buy out.

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

JV: 50% Fischer-Watt/50% Ariz. Star Res.

Section I General Indexing

① Name(s) of Property or Area: Van Deemen Mine (also Van Deeman) Weaver or Minnesota Mining Dists.	② County: Mohave County	③ State or Province: Arizona	
	④ USGS Quad.: Mt.Perkins 15'	⑤ File or Gore No.	

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
35°42'N	114°33'W	Kingman	27N	21W	29,30 32,21	F.R.Koutz	2/8-9/87
						⑪ Office: SWED Tucson	⑫ Field Days (area): 2

plus

Date Typed 7/9/87

Section II Sources of Information

⑬ References

Author	Date	Title	Publications	Vol. No.
Ariz.Star Res.	8/13/86	Prospectus (USE)+Fischer-Watt Gold Co.(OTC)	12/4/86 Prelm.Prosp	
Wilkens, J.(+Heidrick,T.)	1984	AGS Fall Field Trip Guidebook + 1"=1000' map of N.Black Mtns.		
Brownlee, D.J.+Poloni,J.R.	1981	Rpts on VanDeemen Proj.,Pacific Cypress Min.,Ltd (w/o maps)		

Section III Appraisal

Asarco Files "Pope Mine Area-Gold Bug"

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [?] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] Too Late

maybe Not

⑮
- [ ] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [ ] Prospect
- [ ]

- [ ] Stacked detach Fault
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Gold ore	few 1000 max.	±.2 opt Au

⑰ Reserves [X] Measured [ ] Estimated

Commodity	Tons	Grade
1.2/1 o/w,.01 c/o	or 716,000T	.042 opt Au
.5-1.5/1 w/o	2.6 mt	.042 opt Au
"potential"	2-10 mt	.04-.05

⑱ Num. Drill Holes 178+ thru 1986
Approx Total Footage 15,000

⑲ Excavations Many Trenches. ±500' UG workings.

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results ~~Attached~~ +500

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au-Ag As, Mo ± Hg anomal. (±Cu?)

㉔ Ore Minerals-Major: Au FeOx >MnOx (py>>cpy) Minor: malachite Dikes

㉕ Host Rocks-Major: gr-dior.gneiss-schist Patsy Mine And Minor: biot.Qtz Monz diorite-rhyol.

㉖ Age of Host Rocks: pЄ (±peg-aplites) 18.6(22-40?)m.y. Laramide Miocene/Laramide

㉗ Nature of Exposures: fair. Mostly on WSW facing pediment surface. 800' Local relief, 2900' av.elev. Much of detach. buried by grav. broken by high ≷ faults. Deeper holes chloritic, grey chips + py

㉘ Alteration: Hem ≷Goeth after py>>cpy, loc.jaros., Tr.malach in old works. White bleached (clay-ser.) zones in schist. Chl schist (cont. pg. 2)

㉙ Total Extent: 40' av. thick.,600-800'x300-400' ea.3 zones.

㉚ Structure: 5-15°W-dipping detachment fault (other subparallel low angle listric faults above & below). ENE to E&N-S orthogonal Basin & Range faults. Brecciation (cont. pg.2)

㉛ Ore Occurrence: Au° with FeOx ± silica in low angle fault breccia and associated higher angle feeders ± rhyolite dikes. Irregular oxidation: deeper along Fx. Not all Bx mineralized. (cont. pg. 2)

㉜ Age of Mineralization: Miocene (Laramide??)

㉝ Conclusions & Recommendations: Ex-Utah Int. (Cu-Mo), Freeport (1980), Cypress Pac. (1981-82), Amselco (83-84) Zone 1-2 miles W of Pope Mine similar and will be drilled summer 1987 (10,000' of fill-in/step-out drilling now in progress.) Higher grade >0.1 opt Au zones narrow--seldom above an acre. Will make difficult to mine-plan. Reserves could be easily doubled or tripled. Much of early drilling was in barren parts of lower plate. Prelim. metallurgy indicates crushing/agglomer. prob. necessary. If reserves confirmed could go into (cont. page 2)

(For additional space use extra sheets)

JD Sell work from Dunning FW expressing interest

Form Revised-June 1980-JHC MVK-5193

Van Deemen Mine

28. Alteration: prob. metamorphic (mafic schist)

30. Structure: along silicif. faults. Upper plate volc. rotated: dip 30-60° W.

31. Ore Occurrence: Orthogonal Faults offset flat Bx zone locally.

33. Conclusions & Recommendations: production in 1988. Unoxid. mineraliz. maybe not recoverable.

Note: Amir Mines Ltd (VSE) is buying out 54% of AZ Star CGNL 5/22/87 and apparently is making an offer for controlling interest of Fischer-Watt's half. Amir Mines is in cahoots with Glamis Gold on a number of projects in W. US.

FRK - ER File

ASARCO EXPLORATION RECORD

Ex-Tylor/Metoil (Galli Agreement)

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [ ]

Cockrum: 602-565-4486

Section I General Indexing

① Name(s) of Property or Area: Pilgrim Mine (Al Smith Mine) (Pat claims at Mine)					② County: Mohave Co.	③ State or Province: Arizona	
					④ USGS Quad.: Grasshopper 7½	⑤ File or Gore No.	
⑥ Latitude: 35°24'N	⑦ Longitude: 114° 21°W	⑧ AMS Sheet: Kingman	Township: 23N	Range: 19, 20W	Section: 7, 12	⑨ Examined by: F.R.Koutz	⑩ Date: 2/11/87
						⑪ Office: SWED Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 6/25/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Hastings & Gardner	1936-37	USBM IC-6901 & 6945	Mining-Milling at Pilgrim, p.51 +p.1-18	
Dave Cockrum, Geol. Galli Res. (Cd'A Mines) Conversation 2/11/87 (Lives in Chloride)				
Asarco Files	1930-32	Pilgrim Mine (+GCNL 10/25/86, 4/3/86)		

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [?] Too Low Grade
- [?] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] Examine data

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [X] (1942) L-208
- [ ] Dissem-Stock Work
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ] 37°

⑯ Production 100 T PD mill

Commodity	Tons	Grade
Au-Ag(UG)	280,532	opt 0.17Au+.26Ag
Water Source for Ranches below 5th level		

⑰ Reserves

[ ] Measured / [ ] Estimated Commodity	Tons	Grade
Tails	±300,000	opt .01-.015 Au
GCNL (?)	100,000	0.1-0.15
Fischer-Watt	750,000?	.06 Au ?

⑱ Num. Drill Holes +17
Approx Total Footage ±7000'

⑲ Excavations Incline: 7-levels Flooded below 5th level

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au-Ag (±1:1) Values erratic UG-Esp. on strike.

㉔ Ore Minerals-Major: py-Au°-Ag° in late stage greasy yellow-green qtz. Minor: -Tr:gn-cpy-TT,sl.

㉕ Host Rocks-Major: Qtz-lat(Hw) Rhyodac.(Fw) Minor: Rhyol.Intrus (Fw)

㉖ Age of Host Rocks: Miocene Miocene Miocene

㉗ Nature of Exposures: Fair to good. Pilgrim Mine at Range front. Pediment plus other veins outcrop to E. Rolling hills (200-500' relief). 3600' Elev. VnBx zone 4-25'wide UG)

㉘ Alteration: Qtz vein± adularia. Braided fissure filling - cockade in S end. N end dissem.stock work w/adularia-Qtz flooding in volc. Bx ㉙ Total Extent: Alt for X00' E of vein on ped. 5400' long

㉚ Structure: N30W strike ±35-60°W dip braided listric faults. High angle Fx in Hw & FW Cross→ Faults locally offset vein zones. Caldron Margin Zone? Vn dips 35°WSW.

㉛ Ore Occurrence: Fissure Vein. 1930's mined multiple parallel qtz vn. Left low-grade intra-vn. blocks, Other veins to E plus stockwork in FW. Qtz + Adularia flooded Rhyol. Tuff Bx looks like Hardshell-Hermosa ㉜ Age of Mineralization: Miocene

㉝ Conclusions & Recommendations: Galli was mapping/sampling Feb/Mar. for additional zones & planned to drill by fall 87. Galli has 100's of claims in vicinity plus staked more Dec.86. Potential for othet vein/stockwork zones on pediment which Galli will drill. Note that Wm.Wilkenson (Duval) & Fischer-Watt extensively sampled UG+surf. & found only spotty low-grade. FRK has expressed interest to Geologist on property to examine data. Asarco Managers should contact Pete Galli and express interest in Pilgrim Property. FRK was asked (friendly) not to trespass (Ranch & trailers on pat. claims).

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

TAB

ABOVE ER'S Pending

WK - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [X] Submittal

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Payson Area - Lorenzo Barton Claims	USA	Arizona
	④ USGS Quad. North Peak	⑤ File or Gore No. Gila Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
		Phoenix	10N	9E	12	M.A.Miller	9/7/88
						⑪ Office Tucson	⑫ Field Days 1

Section II Sources of Information

Date Typed 9/19/88

⑬ References

Author	Date	Title	Publications	Vol. No.
None				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au?

㉔ Ore Minerals-Major Au? Ag? Minor

㉕ Host Rocks-Major Granite Diorite Minor

㉖ Age of Host Rocks Prob. Meso - Tert. Intrusives

㉗ Nature of Exposures Scattered outcrops and variable float on hillside & ridge tops

㉘ Alteration Very abundant Epidote as Vns and as Qz Epidote Vns.

㉙ Total Extent 1-2'Tk Vns max. <1'' Vns but abundant

㉚ Structure None seen

㉛ Ore Occurrence None

㉜ Age of Mineralization ?

㉝ Conclusions & Recommendations

Sent as submittal with high (up to .2 opt Au + 7 opt Ag reported from soil samples). Repeated sampling by Asarco shows no anomalous values. No further work recommended.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

V-1 SOIL SAMPLE DECOMPOSED GRANITE-
(LB SAMPLE 5988-23 .03 opt-Au 1.05 opt Ag)

V-2 SOIL SAMPLE- W x'D GRANITE 6" DEEP sample.
(LB sample # 5988-21 .04 opt Au, TR Ag)

V-3 SOIL SAMPLE DECOMP GRANITE LB- 5988-19 V-3 TAKEN IN
SAME HOLE AS LB sample. (.04 opt, TR)
ALSO 7228-1, 2, .15 opt Au 1.72 opt Ag
.09 opt Au .8 opt Ag

V-4 Qz EPIDOTE Vns 1' TK N 50° W V. HOST ROCK IS GRANITE

V-5 DECOMPOSED GRANITE- ABU EPIDOTE VEINING CHIP CHANNEL 10' WIDE
HORIZONTAL sample

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 534
September 15, 1988
V (1-5)
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. Mark Miller
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 5 Soil and Rock Samples

ITEM	SAMPLE NO.	FIRE ASSAY/AA Au* (ppm)	Ag* (ppm)
1	V-1	<.02	<.2
2	V-2	<.02	<.2
3	V-3	<.02	<.2
4	V-4	<.02	<.2
5	V-5	<.02	<.2

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. J. D. Sell

ASARCO Incorporated
SEP 19 1988
SW Exploration

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

ASARCO Incorporated

MAY 1 6 1988

SW Exploration

Unpatented Claims adjacent, VASHTI 2,4,5,6,7,8,9
AMC 140307,200039,203396,203397,203349,203350,207142
The cross hatched area is easily found. The path is cut through manzanita. Samples taken for assay. Holes not filled. White PVC pipes form tripod at major sample hole.

My current opinion: complex cross faults producing gangul(a sticky clay when exposed to atmosphere, resembles clay in Missouri river bottoms, gumbo)

I am told Big Bug mine near Mayer a rich gold mine in clay somewhat similar.

General layout, head of Golden Gulch, an "H" formation of ridges, The ridge on the South includes the cross hatched area on the North Slope. The North ridge contains quartz which was gopher hole mined for gold perhaps 30 years ago.

The South ridge is bent at the tension fault. The cross hatched area has a thin layer of rock from higher South ridge. Where I dug this rock layer is only about one foot thick, I estimate the clay area may be as much as 300 feet by 1,000 feet in area, probably less , but considerable.

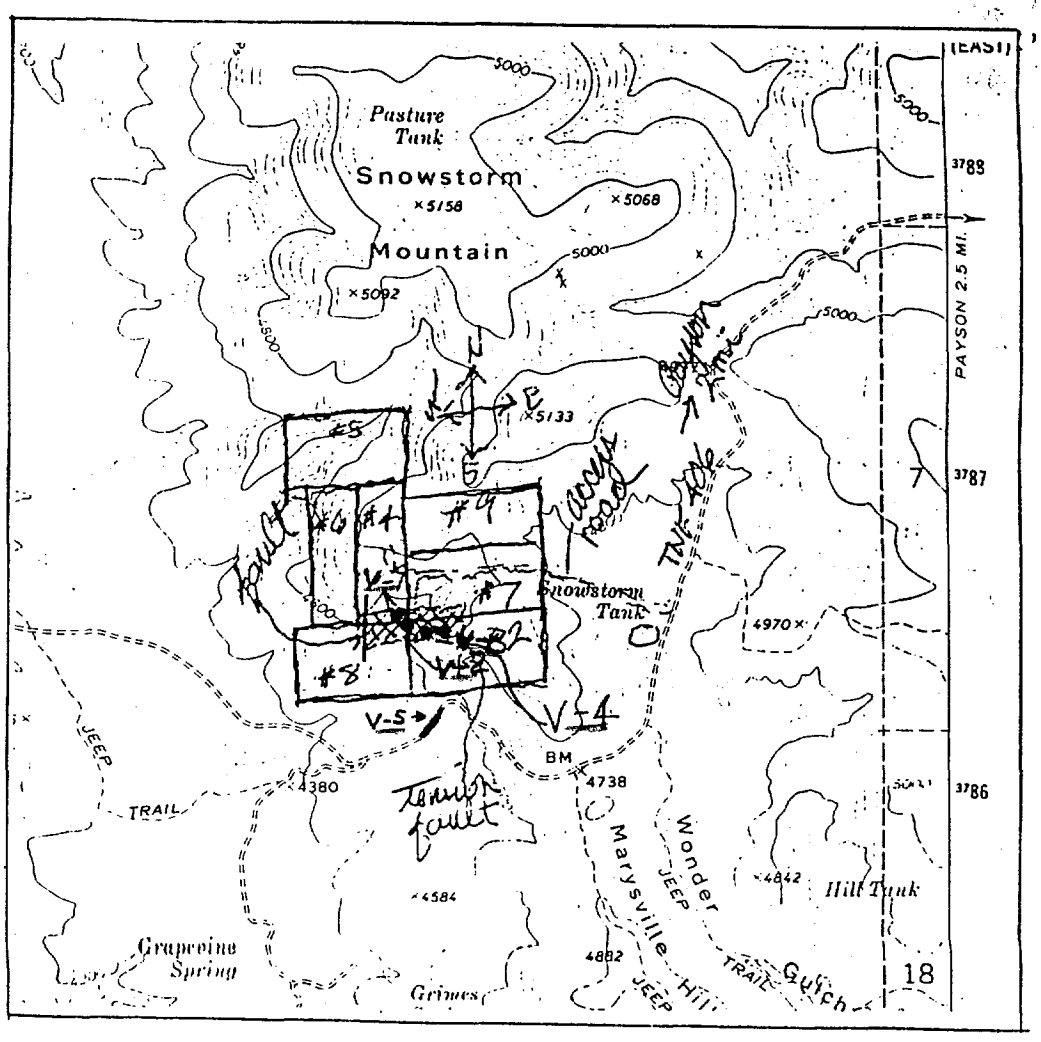
I live at 513 W. Frontier, Apt. 1, no telephone, I doubt if I would be any help geologically, feel free to examine the claims.

Mail address, LORENZO BARTON,P.O. Box 405, Payson AZ,85547.

I have no desire to sell. Wish to lease for % of gross with permanent assignment of 50% of my share to Shriners Childrens Hospital and 10% of my share to a crippled girl(Mechi Stuart)

Lorenzo D.W. Barton

Lorenzo D.W. Barton



ERS File

ASARCO

Southwestern Exploration Division

July 28, 1988

To: J. D. Sell

From: H. G. Kreis

Uragold Prospect
San Bernardino Co., CA

The attached ERS covers the mining operation that you saw when you visited the Gold Bullion Prospect earlier this year. The claim owner, Bill Flowers of Victorville, said the mining operation failed because the lessee could not recover the gold. The assay results in this ERS show a lack of ore grade mineralization which explains why no gold was recovered.

H. G. Kreis

H. G. Kreis

HGK:mek
Att.

cc: W.L. Kurtz

WLK-ERS

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
URAGOLD PROSPECT	USA	California
	④ USGS Quad. Helendale	⑤ File or Core No. San Bernardino

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°38'00"	117°17'30"		6N	4W	SW/4 SW/4 3	H.G.Kreis	6/23/88
						⑪ Office SWED	⑫ Field Days ½

Section II Sources of Information

Date Typed 7/28/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Bowen, O.E., & Ver Planck, W.E., 1965, Stratigraphy, Structures and Mineral Deposits in the Oro Grande Series; CDMG, Spec. Rpt. 84.				
Kreis, H.G., 3-25-85, Mohave Winter Program, Victorville Area; Asarco report.				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No action

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Very Minor		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 0

Approx Total Footage _____

⑲ Excavations shaft, stopes, trenches

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Gold-silver

㉔ Ore Minerals-Major Gold Minor

㉕ Host Rocks-Major Andesite Minor

㉖ Age of Host Rocks Triassic (?)

㉗ Nature of Exposures Scattered outcrops and thin cover. Trenches and cuts from a recent mining attempt.

㉘ Alteration <5 wide; some propylitic alteration in wall rock.

㉙ Total Extent <200' strike length

㉚ Structure N55°E, vertical vein.

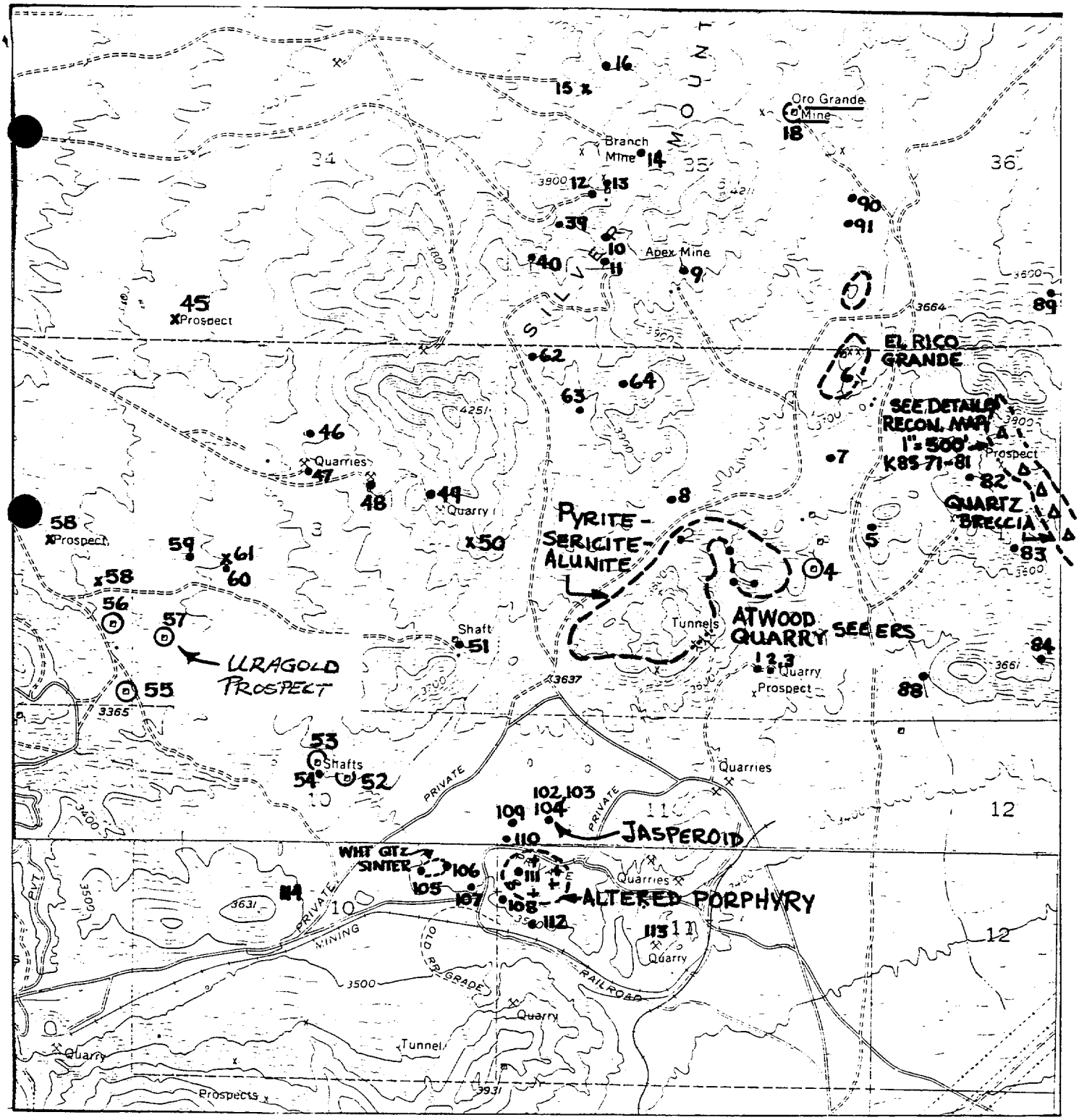
㉛ Ore Occurrence Narrow, discontinuous vein. Weak FeOx staining and strong caliche type calcite in some trenches.

㉜ Age of Mineralization Cretaceous

㉝ Conclusions & Recommendations Owner says assays of trench samples show a 500' wide ore zone running 0.1 oz/ton gold. A recent attempt to mine the area failed.

Samples from the trenches and mine cuts ran 0.18 ppm Au or less, and indicate the mining operation failed because of a lack of ore grade gold mineralization. This area is of no further interest at this time.

(For additional space use extra sheets)



K-85 sample series & field notes

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: San Bernardino

USGS Quad.: Victorville & Helendale Ca. 7 1/2'

Twsp.: 6,7N **Rng.:** 4W **Sec.:** 1-4,10-12 25-27,34-36

Prospect Name:

Owner:

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

State: California

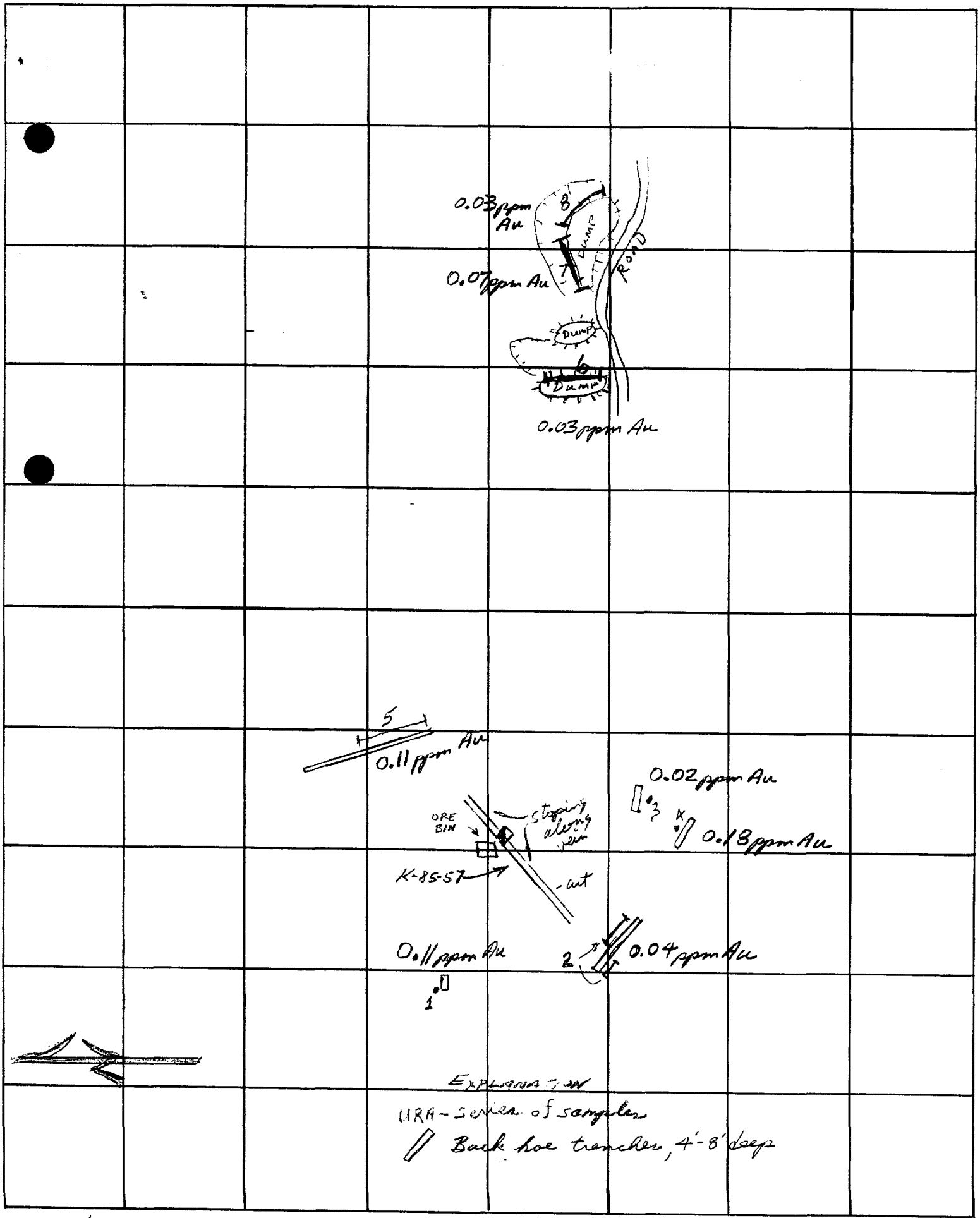
County: San Bernardino

District:

SCALE: 1"=2000'

MILS and/orTerradata no. /

map no. 6145 **date** 3/11/85



MINE URAGOLD LOCATION SW/4 SW/4 SEC. 3 T6N R4W LEVEL

GEOLOGY BY H.G.K. SURVEY DATE 6-23-1988 SCALE 1"=100'

N E EL.

H.G. KREIS
6-23-1988

URAGOLD PROSPECT

* Note: Owner claims 500' wide (N-S) ore zone exposed in N-S trenches thru ore bin.

URA -1 Sample. 40-80% wht & FeO_x stained, caliche type calcite & 20-60% weathered andesite. "High graded" by favoring FeO_x staining. Sampled dump of 15' long 8' deep cut (backhoe)

7x12 bags. (8th samples) -2 Sample, dump of backhoe cut. 10%-40% caliche type calcite and 60-90% highly fract. andesite. 5-10% of rock is FeO_x stained. Andesite is pervasively "mineralized" with caliche

-3 Sample, dump of backhoe cut. Same geol. as URA-2.

-4 Sample, dump of backhoe cut. Same geol as URA-2.

7x12 bag -5 Sample, dump of backhoe cut (4' deep). Someone cut a series of vert. channel samples (T-1 series). Andesite w/ ≤10% caliche type calcite.

7x12 bag -6 Sample of dump from open cut; ½ of pile & sample is andesite with few veinlts of epid, & K-feld, & wk FeO_x on fract. Other half (pile & sample) same as URA-2

7x12 bag -7 Sample of dump from open cut, And. w/ wk FeO_x stain, trace pyrite & former pyrite, tr epid & tr K-feld veinlts.

7x12 bag -8. Sample. Same geol. as URA-7. 5-10% Caliche type calcite. Trace CuO_x in wall of cut.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
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ASARCO Incorporated

JUL 21 1988

SW Exploration

REPORT OF ANALYSIS

JOB NO. TAJ 529
July 19, 1988
880416R TO QP-54

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 24 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (ppm)	Ag (ppm)
2	URA-1	.11	
3	URA-2	.04	
4	URA-3	.02	
5	URA-4	.18	
6	URA-5	.11	
7	URA-6	.03	
8	URA-7	.07	
9	URA-8	.03	

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

WLK- ER file

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
LA COLORADO MINE RECON.	USA	California
	④ USGS Quad. Ogilby	⑤ File or Gore No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
32°55'	114°50'	Salton Sea	14S	20E	28	H.G.Kreis	3/14-15/87
						⑪ Office Tucson, SWED	⑫ Field Days 2

Section II Sources of Information

Date Typed 5/10/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K., 1977, Geol. & Min. Res. of Imperial Co.; CDMG County Report 7				
Koutz, F.R., 8-29-85, Ali Claims; Asarco memo to J.D. Sell				
Kreis, H.G., 3-31-87, March 1987 Monthly Report; Asarco memo to R.L. Brown				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Future Interest

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Nill		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 1
Approx Total Footage ≤500'

⑲ Excavations Few shafts and adits in mine area

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Recon. for Au

㉔ Ore Minerals-Major: _____ Minor: _____

㉕ Host Rocks-Major: Gneissic granite Minor: _____

㉖ Age of Host Rocks: Mesozoic

㉗ Nature of Exposures: Abundant outcrops along edge of pediment.

㉘ Alteration: Local minor chlorite-clay-sericite in structures prospected by shafts; otherwise, none.

㉙ Total Extent: _____

㉚ Structure: Northwest striking Round Top Valley fault separating Cargo Muchacho Mountains from the Ali claim group.

㉛ Ore Occurrence: Scattered, very widely spaced magnetite and quartz-magnetite veins (less than 3" thick but up to 3' locally) in La Colorado Mine area.

㉜ Age of Mineralization: _____

㉝ Conclusions & Recommendations: The La Colorado Mine reconnaissance was initiated because Gold Fields had dropped a large area of claims at this location, and the area is favorably located with respect to the bulk tonnage gold deposits of the district (see attached map). In the area examined, the most favorable potential is along the Qal buried Round Top Valley fault. The Round Top Valley fault does not outcrop in the area of this reconnaissance, and it is not known to be mineralized with gold.

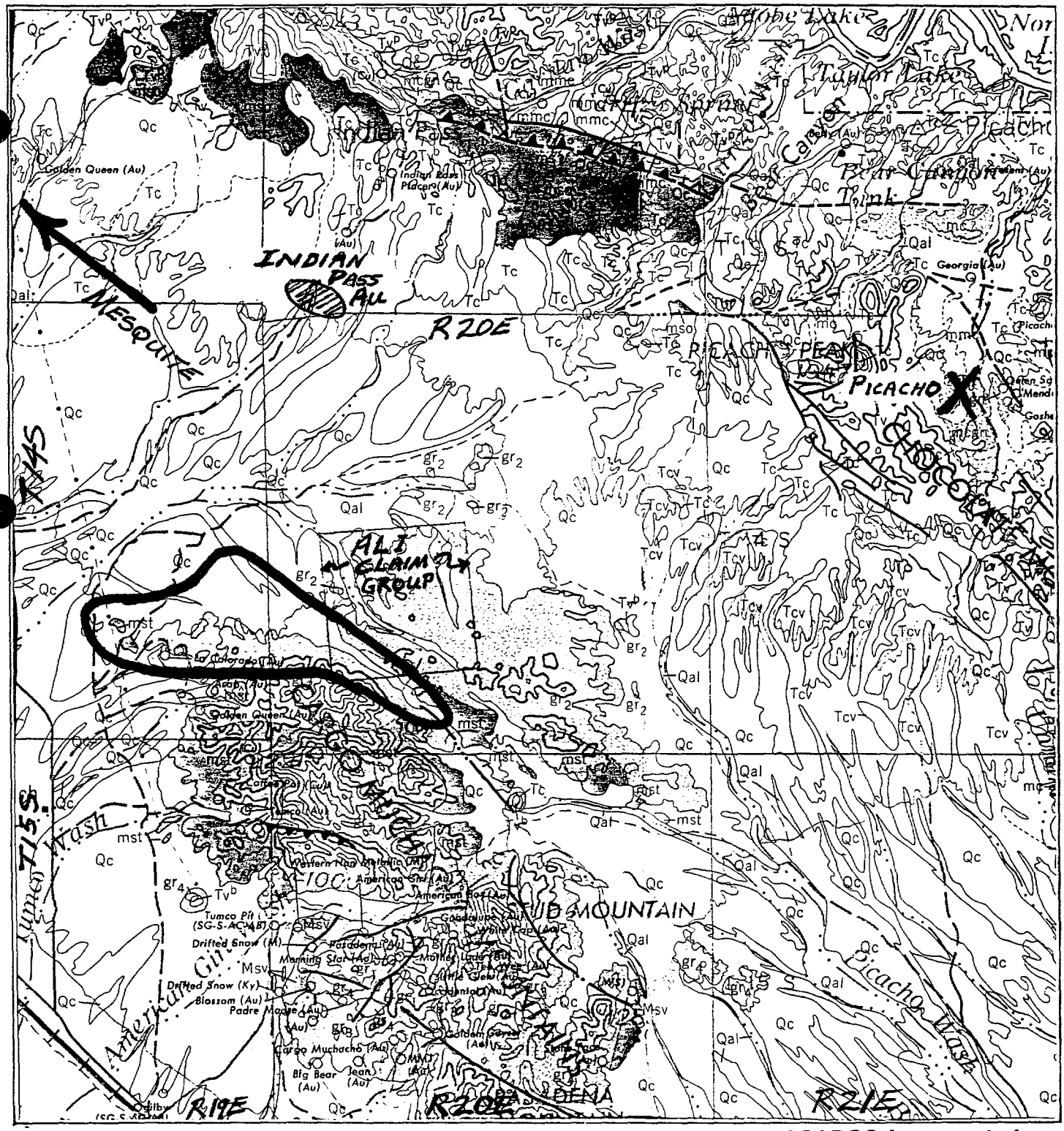
(Continued on page 2)

(For additional space use extra sheets)

33. Conclusions & Recommendations (Continued)

However, the structural setting appears identical to the fault structure that hosts the Madre-Padre gold deposit. Here, as at Madre-Padre, the fault separates the high, rugged Cargo Muchacho Mountains from foothills of low relief. Conceivably, the Round Top Valley fault may host Madre-Padre type gold mineralization along its projection under cover to the northwest.

The next step to evaluate the potential for gold mineralization in the Round Top Valley fault is to sample the Qal in the cross cutting washes and pan out a concentrate for visual inspection. Because of the risks involved and the relatively small Madre-Padre sized target, this work can be done on a low priority basis.



ASARCO Incorporated

1987 GOLD PROGRAM

Twsp.: 14S **Rng.:** 20E **Sec.:** 26

Prospect Name: LA COLORADO MINE RECON.

AREA OF RECON

State: CALIF

County: IMPERIAL

District: CARGO MUCHACHO MTNS

SCALE: 1" = 2 MILES

map no. H.G.R **date** 1987

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemehuevis Formation.

TERTIARY

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tv^{ia} = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite: Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

msc 163 mm yr. (60 mm yr. metamorphic age)

Orocopia Schist

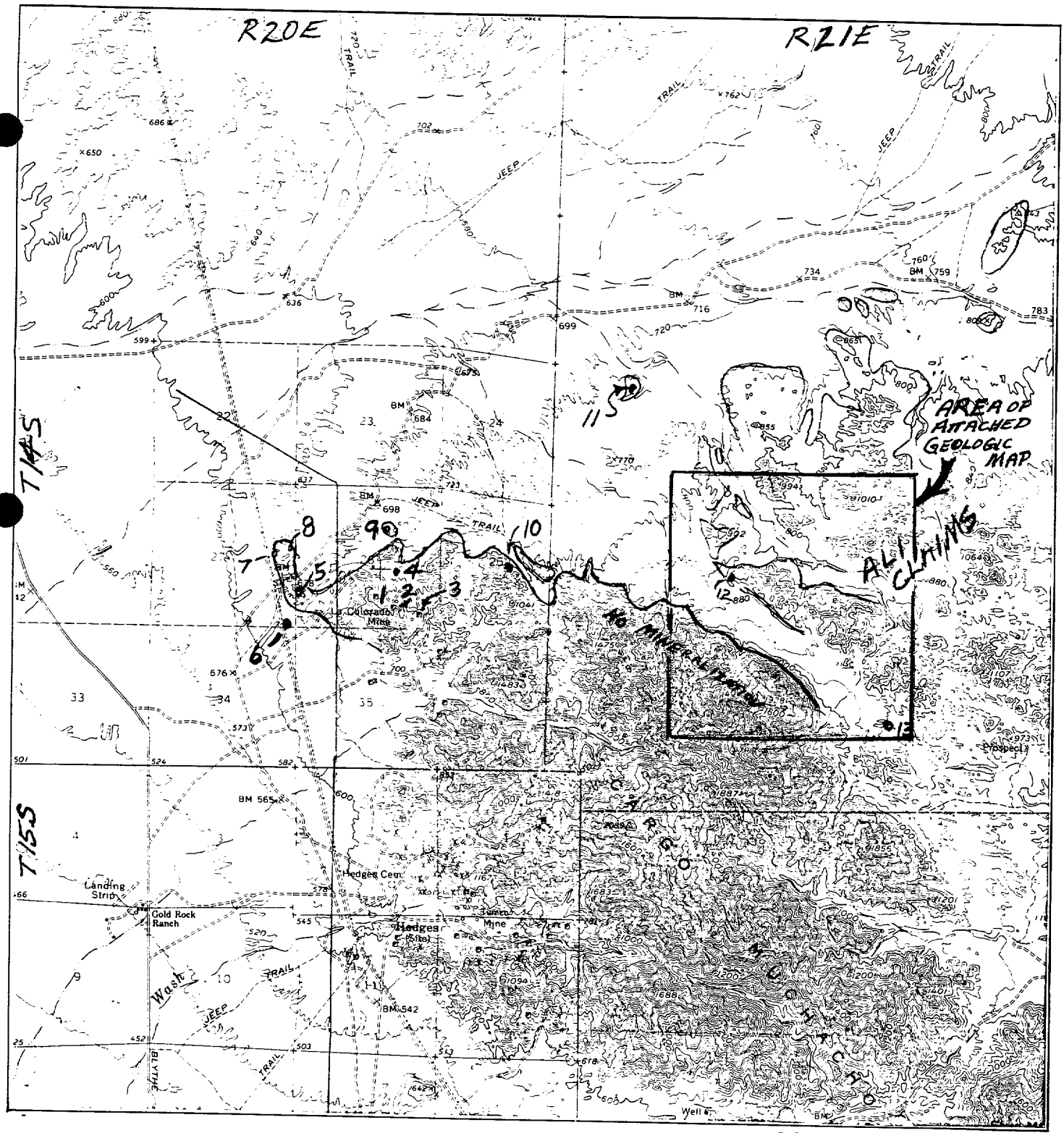
Sericite albite schist, quartz sericite schist, biotite schist, phyllite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc 166-170 mm yr. (bio. gneiss) ≈180 mm yr (hbl. gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), *foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.*

ASARCO Incorporated
1987 GOLD PROGRAM



ASARCO Incorporated

1987 GOLD PROGRAM

Twsp.: 14S **Rng.:** 20E 21E **Sec.:** —

Prospect Name: LA COLORADO MINE RECON.

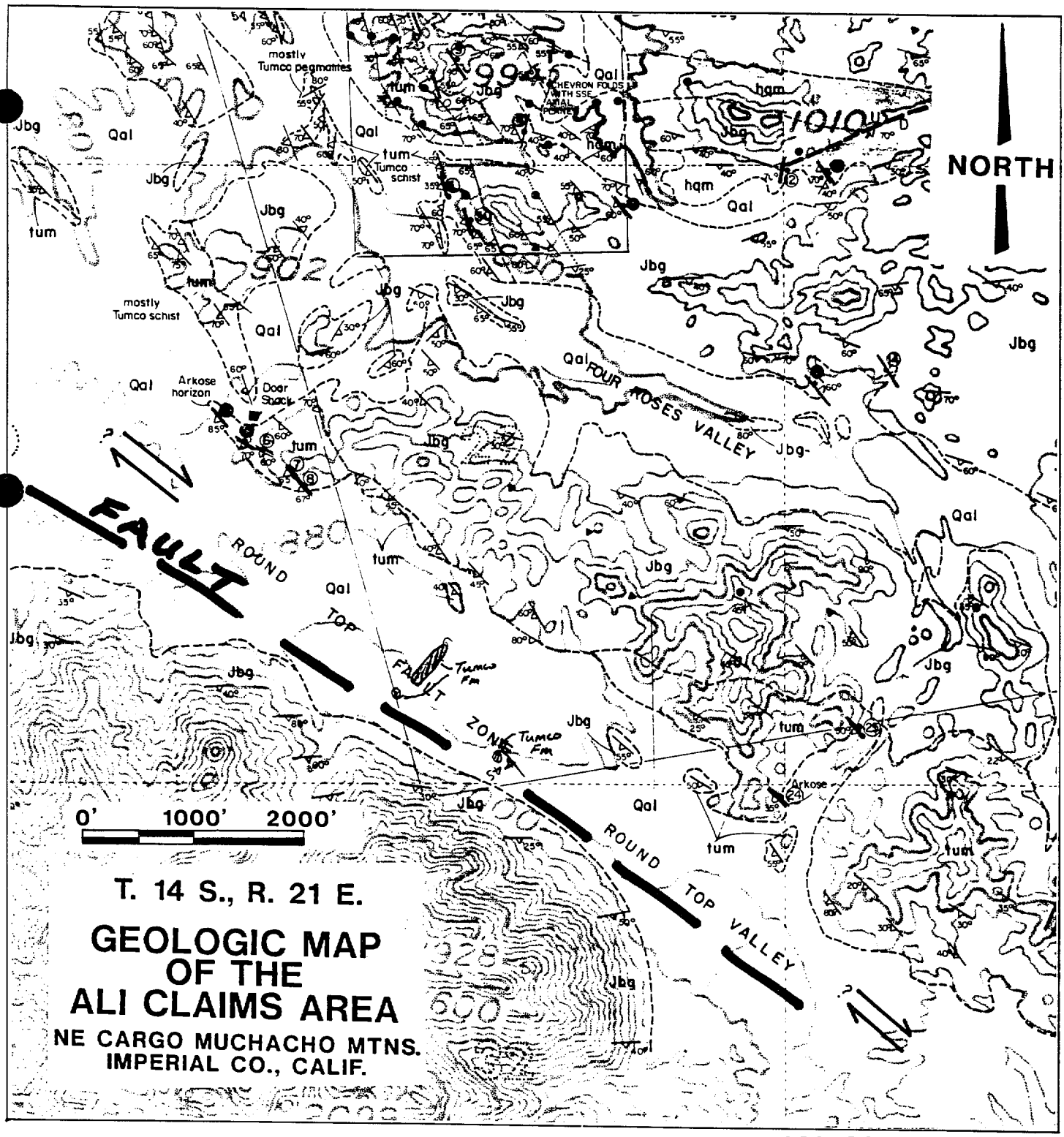
State: CALIF

County: IMPERIAL

District:

SCALE: 1" = 1 MILE

map no. H.G.K **date** 5-1988



GEOLOGY BY JOHN T. DILLON PhD. 1975 UCSB

LOCALLY REVISED AND DETAILED BY F.R. KOUTZ, AUGUST, 1985

TAKEN FROM KOUTZ (1985)

ASARCO Incorporated

1987 GOLD PROGRAM

Twsp.: 14S Rng.: 21E Sec.:

Prospect Name: LA COLORADO MINE RECON.

State: CA

County: IMPERIAL

District:

SCALE: ABOVE

map no. HGK date 5-1988

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

CORRECTED COPY
JOB NO. TAJ 478
June 19, 1987

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
57	LCM-01	<.01	
58	LCM-09	<.01	
59	LCM-12	<.01	
60	LCM-13	.07	

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanaugh

NOTE: Corrected gold values.

William L. Lehmbeck
Manager

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

H.G.K.
1987

1/3

La Colorado Mine Reconn.

LCM-1 Deep shaft. Dump w/ gneissic bio. qtz dio. (to qtz monzonitic in outcrop) having 1/16"-1/2" thick qtz-magnetite seams-veinlets parallelling foliation. Same type of mineralization as Tucson. Took sample with abundant magnetite veinlets to check for gold. Pale green chlorite-clay on some fractures, but otherwise no alteration.

-2 No sample. Drifting & stoping on N60°W, stply W dipping mineralized fault zone (poorly defined dip). Spotty indigenous FeOx pseudomorphs of former sulfide mineral (≤1% F.T.S), few qtz veinlets, pale greenish gray sericitization (≤moderate) in areas of stronger min.-alt^n.

Remark: Have noticed compo. variation from apparently diorite (no pink K-f) to qtz monz (almost granite) with obvious pink K-f. Noted some obvious 2nd K-f along an epidote vein. Some thin sections of white diorite rock needed to check if K-f is present but totally white in color or is all pink K-f secondary in origin.

-3 Adit & shaft intersection on N20°W, 75-90°E strong fault with 1'x4'x5' lense of v. stg FeOx (≈5-10% F.T.S). Suspect this contains Au. Strong faulting throughout adit which goes in at S5-10°E. Below is a S65W cross cutting decline - light needed (have no light).

-4 No sample. Widely spaced magnetite mineralization in veins conforming to foliation and in cross cutting fractures

-5 Very Rare magnetite mineralization & very rare FeOx of any type on north side of hill. Stg FeOx stain at top of south side of hill.

LCM -6 Gold Fields drill hole CM-10.
No mineralization in piles of cuttings
(qtz dio, and minor schist)

-7 Drill hole in area of outcrops. Drill hole
is capped w/ a padlock -- probably a water
level observation well.

-8 Very widely spaced, narrow zones of weak FeO_x staining,
apparently after former sulfides (traces) on fract, that
strike roughly NW'ly and are continuous over 500'
of strike length. Trace CuO_x on SW side of hill.

-9 Sample. 1"-3' wide qtz-magnetite vein, N35°W, stp W dip
More or less parallels foliation in gneissic granite.
Scattered 1" by 1' pods of qtz-py(?)-mag(?) w/ FeO_x halos
on nearby hill (not included in sample).

-10 No sample. Few small prospect pits on traces of
fract. controlled CuO_x (after py?)

Remark: From LCM-10 to 1½ mi to SE along ridge of
pediment the outcrops are totally barren of
FeO_x stain, qtz vns, carbonate veins or any
indication of alt.-min. Some disseminated epidote
& local minor fract. controlled epidote. No wht.
bull qtz pods except some minor pegmatitic qtz.

-11 No sample. Large area of Tumco w/ abundant pegmatites.
Local wk epidote. No FeO_x or qtz veining. N-S to N30W (typically N20W).
40-60° W dipping foliation.

-12 Sample. 2' thk white, brecciated qtz flt-vein.
Parallels foliation; FRK's sample site ALE-6
in nearby. 10' wide band of FeO_x after Tu-½% former
fract. controlled pyrite in immediate FW of vein.

LCM-13 Sample. 5' high, 20' long exposure of qtz vein in north side of 15' deep drainage. White brecciated (healing) qtz with local minor (<1%) pyrite (oxidized). Lower contact on E side of outcrop N60E, 50°N.

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
HYDUKE CLAIMS	USA	California
	④ USGS Quad. Quartz Peak	⑤ File or Gore No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°05'05"	114°53'05"	Salton Sea	12S	20E	NE/4 32	H.G.Kreis	3/22/87
						⑪ Office Tucson, SWED	⑫ Field Days <1

Section II Sources of Information

Date Typed 5/10/88

⑬ References

Author	Date	Title	Publications	Vol. No.
M.Miller, ±1985, Hyduke Claims; Exp. Rec. Sheet Asarco Files				
Morton, P.K., 1977, Geol. & Min. Res. of Imperial Co.; CDMG County Report 7				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geol. Info.

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations Road cuts

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached Duke 1-10

Section IV Geologic Data

㉓ Commodity or Contained Metals Checked Au content of altered and mineralized clasts in fanglomerate.

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major _____ Minor _____

㉖ Age of Host Rocks _____

㉗ Nature of Exposures Excellent exposures of fanglomerate (basin-range fill type) in 6' deep gully (location in attached field notes).

㉘ Alteration Moderately sericitized appearing altered schist clasts in fanglomerate.

㉙ Total Extent _____

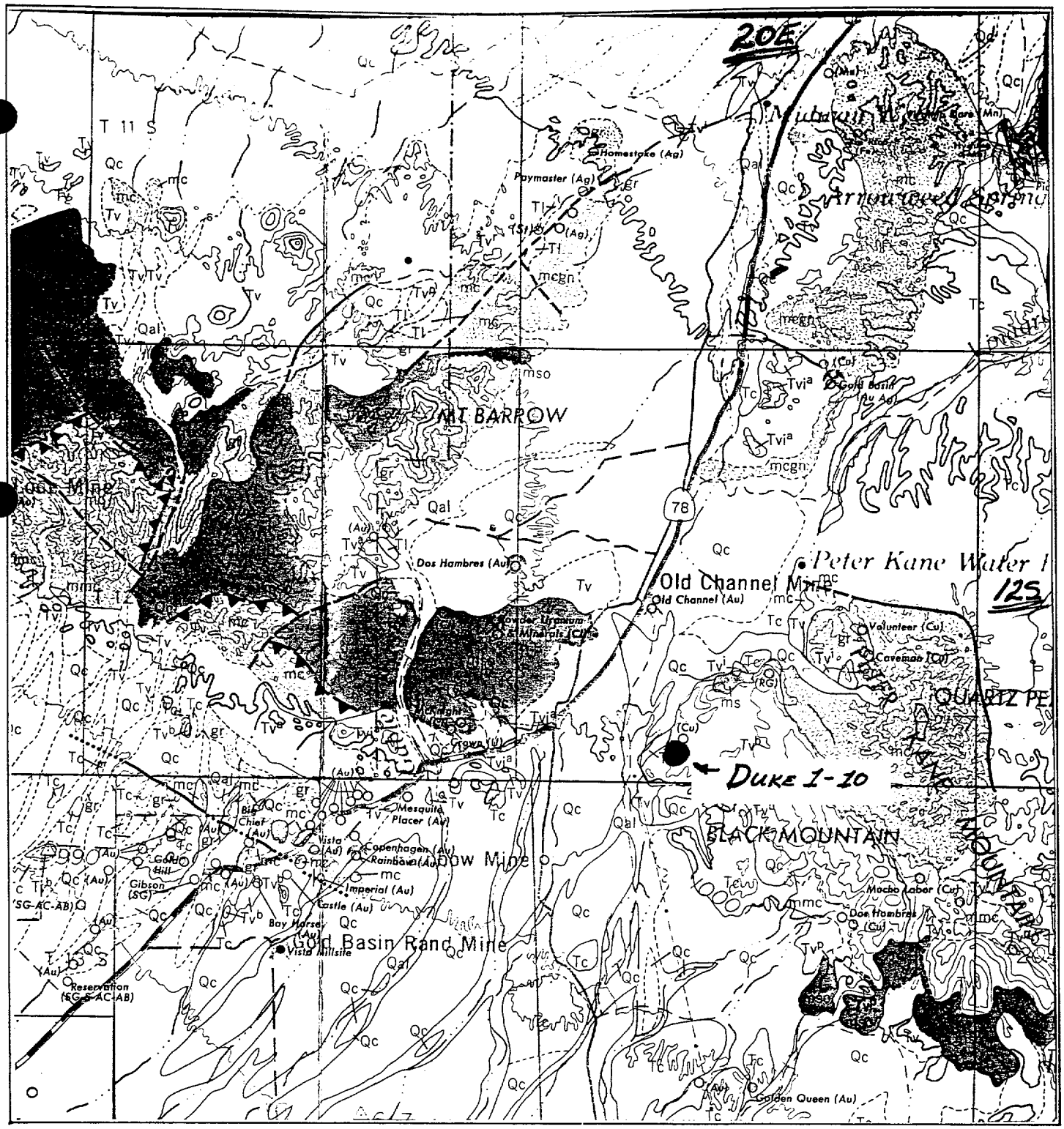
㉚ Structure Northeast striking, 20°NW dipping bedding in fanglomerate.

㉛ Ore Occurrence ≤0.5% of fanglomerate clasts are moderately sericitized schist with strong goethite after disseminated ankerite and/or pyrite.

㉜ Age of Mineralization _____

㉝ Conclusions & Recommendations The altered-mineralized schist clasts in the fanglomerate carry only weakly anomalous gold values, all samples ≤0.05 ppm Au; but the alteration-mineralization is similar to that at Mesquite, the Indian Pass area, and Copper Basin. This information was gathered to assess the Mesquite East pediment area.

(For additional space use extra sheets)



ASARCO Incorporated

1987 GOLD PROGRAM

AMS Sheet: SALTON SEA

USGS Quad.: QUARTZ PEAK

Examined by: H.G. KREIS

Follow-up Recommended: Yes☐ No☐

SCALE: Townships Shown

map no. _____ **date** 7/87

Twsp.: 12S **Rng.:** 20E **Sec.:** NE/4 32

Prospect Name: HYDUKE CLAIMS

Owner: NED HYDUKE

State: CALIF.

County: IMPERIAL

District: _____

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

QUATERNARY

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemehuevi Formation.

TERTIARY

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

msa 163 mm.yr. (60 mm.yr. metamorphic age)

Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phyllite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc 166-170 mm.yr. (bio. gneiss) ≈180 mm.yr. (hbl. gneiss)

Chuckwalla Complex

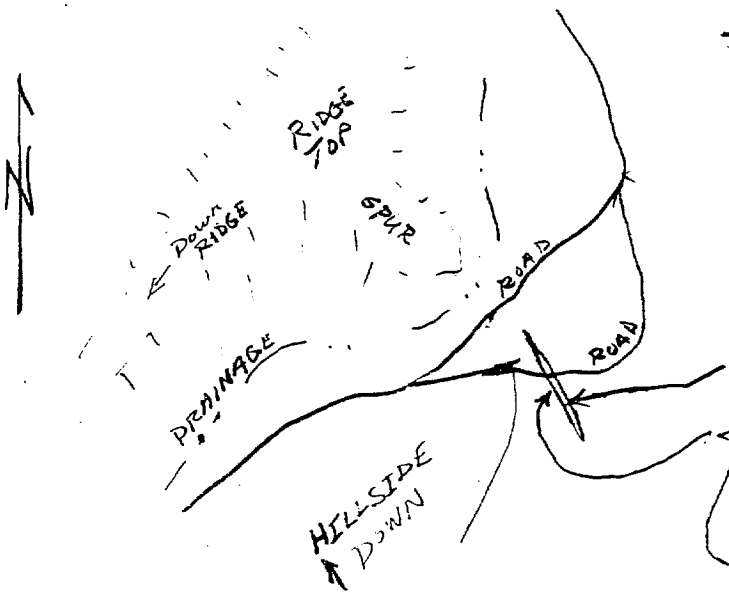
Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

ASARCO Incorporated

1987 GOLD PROGRAM

H.G.K.

HYDUKE CLAIMS



IN GULLY:
± ½% clasts of moderately sericitized schist with strong goethite after disseminated pyrite and/or ankerite.

6' deep gully in conglomerate. Samples taken here. Samples about 1# of pieces from thumb to hand size.

DUKE-1 One hand sized piece as described above. Looks ankeritic.
-2 " " " " " " " . 2% former pyrite
-3 Several small pieces " " " .
-4 Couple pieces of vein matter, 15% crusty FeO_x, most after sulfide
-5 " " " " " , 8% diss pyrite.
-6 Mostly quarter sized pieces of breccia with strong goethite matrix.
-7 Sericitized schist, 3% former pyrite (limonite). 3# sample.
-8 " " " " " " , 2# single piece.
-9 " " " " " " 1" thick g & v vein; 5" diam. boulder; 3# sample
-10 Assortment of mineralized schist as described in the first nine samples. 3# sample of about 10 different clasts

Conglom has poorly developed, sorted clast (by size) type bedding that dips about 20° to NW following slope of hillside. Most clasts in conglom are <4" in diam but there are a number of 1-2' diam. size boulders. Matrix of conglom is silty-sandy but matrix in bottom of gully is tuffaceous.

See M. Miller's report & sample w/ 10 Au.

500'± /050' NNE of DUKE-1 are outcrops of weakly sericitized f-g granite (?) [illegible] dipping

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

CORRECTED COPY
JOB NO. TAJ 478
June 19, 1987

ASARCO INCORPORATED
Attn: Mr. H. G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

ASARCO Incorporated
JUN 26 1987
SW Exploration

Analysis of 62 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
15	DUKE-01	.02	
16	DUKE-02	.03	
17	DUKE-03	.03	
18	DUKE-04	.02	
19	DUKE-05	.01	
20	DUKE-06	.02	
21	DUKE-07	<.01	
22	DUKE-08	.05	
23	DUKE-09	<.01	
24	DUKE-10	<.01	

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Limestone in Palo Verde Mountains	USA	California
	④ USGS Quad. Palo Verde Mt.	⑤ File or Gore No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°18'	114°45'	Salton Sea	10S	21E	--	H.G.Kreis	2-1988
						⑪ Office Tucson, SWED	⑫ Field Days ½

Section II Sources of Information

Date Typed 5/9/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K., 1977, Geol. and Min. Res. Imperial Co.; CDMG County Report 7				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No Action

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals None

㉔ Ore Minerals-Major None Minor

㉕ Host Rocks-Major Limestone Minor

㉖ Age of Host Rocks Tertiary

㉗ Nature of Exposures Well exposed in outcrop and road cuts.

㉘ Alteration None. Fresh limestone.

㉙ Total Extent

㉚ Structure Flat lying to gently dipping bedding in limestone.

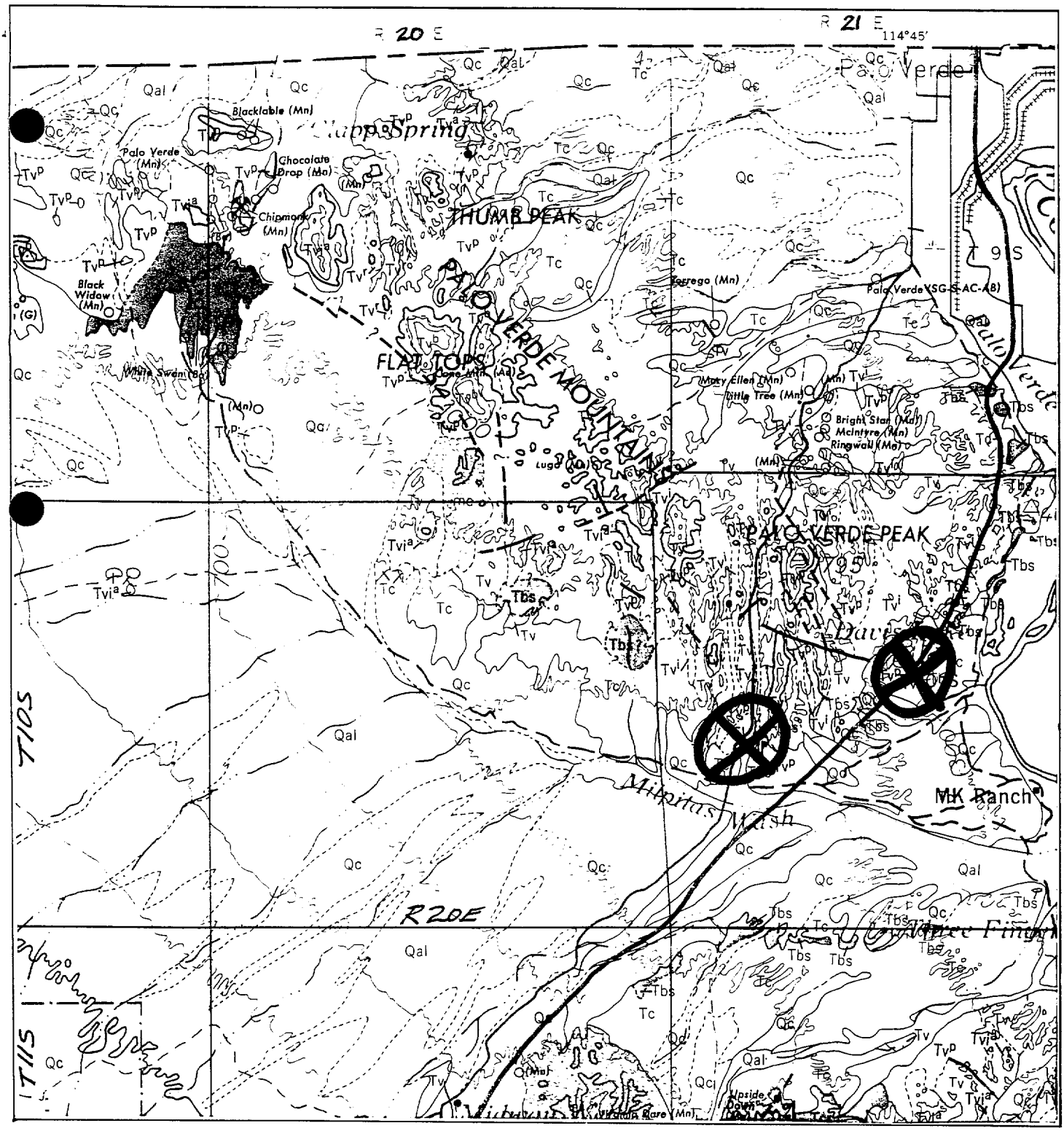
㉛ Ore Occurrence None. Fresh limestone.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations Examined limestone at a couple of widely spaced areas to see if it had any characteristics of the Miocene limestone - hydrothermal - silicification - Ag characteristics as is seen in the Barstow area (Cady prospect). The limestone is fresh and is of no further interest.

(For additional space use extra sheets)

Form Revised-June 1980-JHC MUK-5193



IMPERIAL COUNTY REPORT 7
PLATE 1

ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 10S **Rng.:** 21E **Sec.:** —

⊗ LIMESTONE LOCATIONS

Prospect Name: LIMESTONE IN PALO VERDE MTNS

Owner: —

State: CALIFORNIA

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 2 miles

map no. HGK **date** 5-3-1988

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

Pliocene

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = **yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate.** Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

163 mm yr. (60 mm yr. metamorphic age)

Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

166-170 mm yr. (bio. gneiss)
≈180 mm yr. (hbl. gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), *foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.*

WLK-ER file

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
POKER GULCH PLACER GOLD	USA	California
	④ USGS Quad. Palo Verde Mtns.	⑤ File or Gong No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°21'30"	114°50'00"	Salton Sea	9S	20E	±26	H.G.Kreis	2-1988
						⑪ Office Tucson, SWED	⑫ Field Days 3

Section II Sources of Information

Date Typed 5-6-88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K.,	1977,	Geol.& Min. Res. Imperial Co.,	CDMG County Report 7	
Morey, P. & Jordt, D.,	1987,	Poker Gulch Claim Group; J'VAL company report.		
MILLER, M.,	5-8-1985,	Poker Gulch Claim Group; Asarco memo to J.D. Sell		

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Find gold source

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
Very small amount of placer gold.		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations Shafts and stopes on MnOx veins.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Gold

㉔ Ore Minerals-Major Placer gold Minor

㉕ Host Rocks-Major Qal in andesite terrain Minor

㉖ Age of Host Rocks Tertiary volcanics.

㉗ Nature of Exposures Abundant outcrops throughout nearly all of the area.

㉘ Alteration See "Ore Occurrence"

㉙ Total Extent

㉚ Structure See "Ore Occurrence"

㉛ Ore Occurrence The placer gold occurs in the alluvium of the present day drainages of Poker Gulch and tributaries to Poker Gulch. The drainages are deeply incised into Tertiary andesidic (see page 2)

㉜ Age of Mineralization

㉝ Conclusions & Recommendations Tracking the placer gold to its source may prove to be expensive and time consuming. J'VAL put substantial effort into the task and has yet to conclusively identify any source. Furthermore, the J'VAL report shows at least traces of placer gold are likely to occur in many washes in an area 6 miles long by at least 1½ miles wide (see Morley, 1987, Figure 2). A thorough inspection with sampling of veins over a 5 square mile area is a reasonable alternative method to find the gold source. (see page 4)

(For additional space use extra sheets)

Form Revised June 1980

31. Ore Occurrence (Continued)

An initial step was taken to see how the relatively coarse gold of Poker Gulch responds to -80 mesh stream sediment sampling. Two -10 mesh samples, HYD Pit-1 and -2, were taken from separate pits in Poker Gulch. Each sample consisted of Qal from within inches of bedrock and material swept off the top of bedrock. Each sample was then screened to +80 mesh (-10 mesh, +80 mesh) and -80 mesh, and each fraction was split into three samples (A,B,C) for 1AT FA-AA. The results are as follows:

	Weight (grams) -10 mesh, +80 mesh	Weight (grams) -80 mesh
HYD Pit 1	4435	971
HYD Pit 2	4667	822

	-10, +80 mesh ppm Au	-80 mesh ppm Au
HYD Pit 1 A	.120	.350
HYD Pit 1 B	.100	.190
HYD Pit 1 C	12.00	1.300
HYD Pit 2 A	.020	<.020
HYD Pit 2 B	<.020	.200
HYD Pit 2 C	<.020	1.000

Considering the weights of the samples and their gold grades, half or more of the gold in sample HYD Pit-1 is in the +80 mesh fraction and all of the gold in HYD Pit-2 is in the -80 mesh fraction. More importantly, all but one of the six -80 mesh fractions show anomalous gold values more consistently than the -10 mesh, +80 mesh samples. The next step in evaluating the feasibility of using -80 mesh with FA-AA would be to take -80 mesh Qal samples from both the top of bedrock and well above bedrock for some distance up drainage from HYD Pit-1 and -2. The gold values from these samples would then be evaluated to see how frequently the -80 mesh Qal produces anomalous gold values. Considering the relatively low gold values (≤0.35 ppm) of -80 mesh Qal from the top of bedrock, it is doubtful if many samples >6" above bedrock will have anomalous gold values, and even samples from the top of bedrock are likely to have erratic anomalous gold values. As for an analytical method to track the placer gold to its source, it may prove to be a toss-up between visual inspection of a gravity concentrate (Morey of J'VAL) or -80 mesh with FA-AA.

31. Ore Occurrence (Continued)

volcanics, and the resulting mountainous terrain consists of an abundance of rugged, steep walled, canyons and ridges. The source of the gold remains unknown.

Mr. Morey of J'VAL claims he and Mr. Jordt have followed the placer gold to two fault like structures (see Morey and Jordt, 1987). I spent a day with Mr. Morey in the field, but he was unable to show me the fault structure. Tentative arrangements to have Mr. Jordt show me the structures had to be cancelled when I was reassigned to the Santa Cruz Project. A Newmont geologist was shown the structures some time ago, but failed to get encouraging results (Mr. Morey's opinion of Newmont's assay results which he promised to send but never did). Mr. Morey said they (J'VAL) had sampled the structures some time ago, but have no plans to assay the samples. All considered, it is doubtful the source of gold has been located.

In the Poker Gulch placer gold area there are widely scattered veins of barite, MnOx, and calcite. The most prominent veins are MnOx-calcite veins that strike N40-50°E with a steep east dip (at site 2-88-4 and -5). A few samples of the various types of veins by M. Miller and I carried no significant gold-silver values. The only departure from this type of mineralization was a narrow vein of clay-sericite alteration with a few percent former pyrite, 0.026 ppm Au and 0.45 ppm Ag. These were the highest gold and silver values of all the vein samples. The float in the washes showed no evidence of any other type of mineralization, alteration, or rock type that was different than that observed in outcrop.

The county geologic map shows gold at nearby Cone Mountain, sample sites HYD-4 to -7. The diggings at this location showed no alteration or mineralization. No anomalous gold, silver, or indicator elements were found in any of the samples.

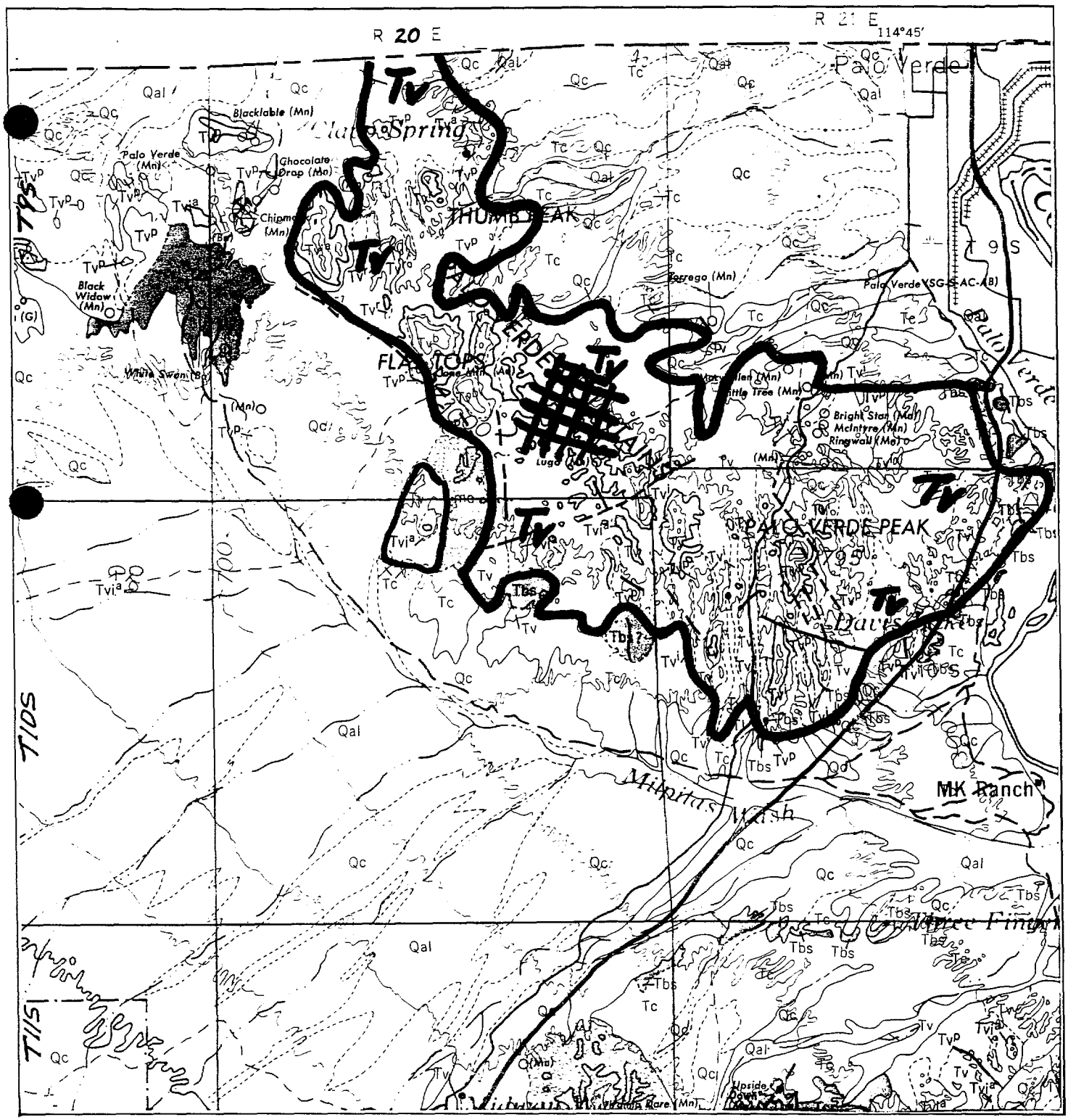
Following the Poker Gulch placer gold to its source apparently is not an easy task to accomplish. Mr. Morey took 105 Qal samples, most of which were from Poker Gulch, determined their placer gold content using gravity separation, and still has been unable to locate a gold source. In trying to follow the placer gold to its source, Mr. Morey made the following observations about the occurrence of placer gold:

> "In general, it was found that gold particles could be recovered only in gravels lying immediately on bedrock, while gravels overlying bedrock more than 3 inchs were usually barren. Bedrock, moreover, had to be level; gravels on sloping bedrock often contained little or no gold. These conditions were prevalent even in drainages with established placer gold values. Care was taken to select more or less uniform sample sites on level thinly-mantled bedrock. Linear channels were found to be the most consistent while gravels associated with complicated stream bed riffles, rock ribs and buttress traps tended to be highly unpredictable and, oddly, lower grade."

33. Conclusions and Recommendations (Continued)

Because of the very rugged terrain and limited vehicle access, it would take about two weeks to accomplish this task.

I recommend a field trip with Mr. Jordt to map and sample the structure he thinks is the gold source. If this proves unsuccessful, I don't recommend any more work until the property can be optioned for little or no expense for the first few months. I suspect the placer gold is from a vein structure; and, if all is favorable, it could be of Copperstone size and grade.



IMPERIAL COUNTY REPORT 7
PLATE 1

ASARCO Incorporated

1988 GOLD PROGRAM

POKER GULCH-
HYDUKE PLACER GOLD

Twsp.: 9S **Rng.:** 20E **Sec.:**

Prospect Name: POKER GULCH

Owner: HYDUKE -- J'VAL

State: CALIF.

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 2 MILES

map no. HGK **date** 5-3-1988

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

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Qc

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Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

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Tbs

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Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

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Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = **yellow-gray, moderately to poorly consolidated, poorly sorted** pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

[redacted] 163 mm yr. (60 mm yr. metamorphic age)

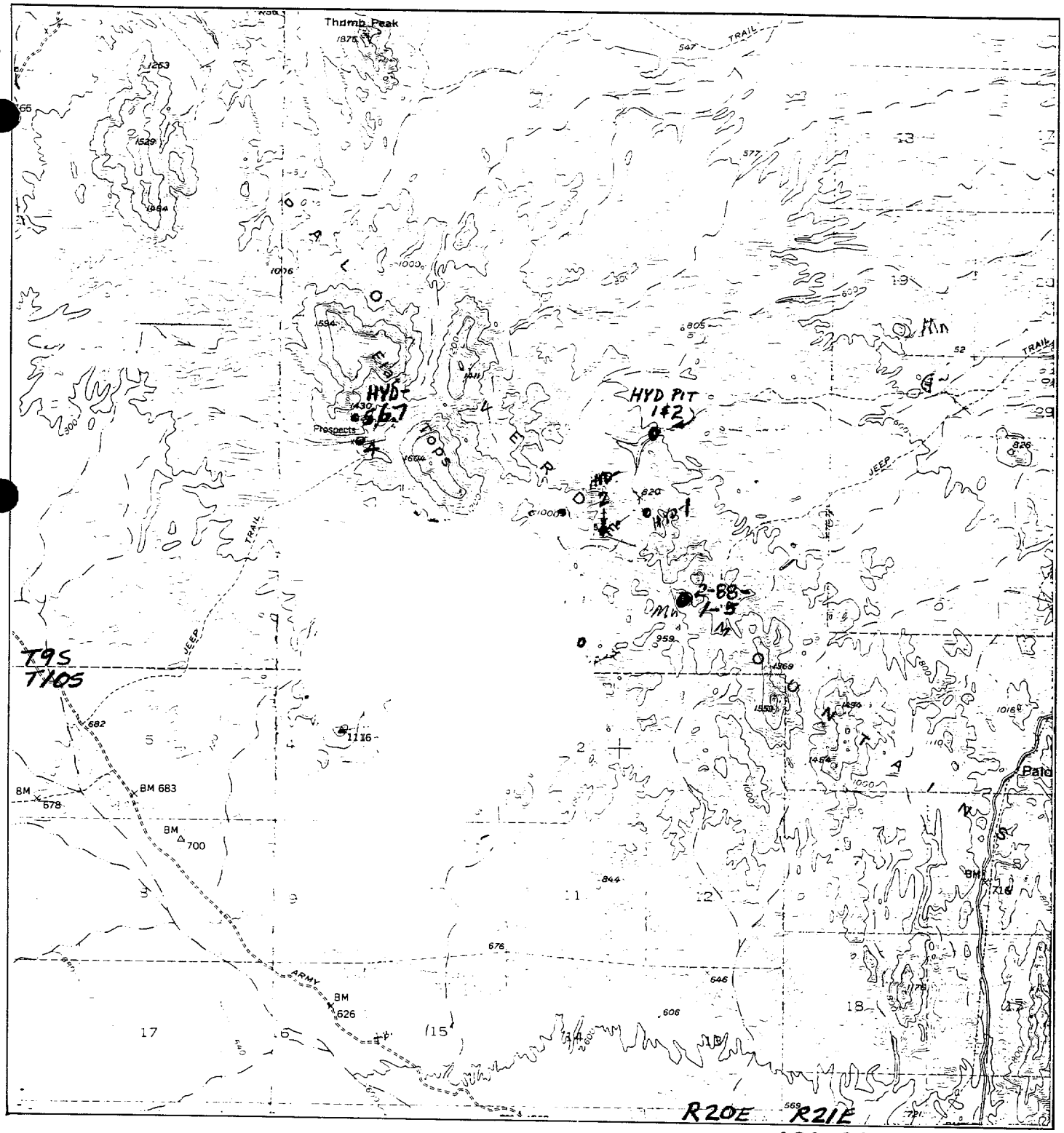
Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc 166-170 mm yr. (bio. gneiss) ≈180 mm yr. (hbl. gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), *foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.*



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 9S **Rng.:** 20E **Sec.:** _____

Prospect Name: POKER GULCH

Owner: HYDUKE -- J'VAL

State: CALIFORNIA

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 1 MILE

map no. H&K **date** 5-3-1988

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 515
March 16, 1988
2-88-1 TO LMM-88-5

ASARCO INCORPORATED
Attn: Mr. Henry G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 61 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)
1	2-88-1	.009
2	2-88-2	.004
3	2-88-3	.010
4	2-88-4	.006
5	2-88-5	.006

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 513
February 22, 1988
K-88-1 TO KH-8

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
FEB 25 1988
SW Exploration

Analysis of 31 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
13	HYD-1	.026	.45
14	HYD-2	.012	.15
15	HYD-5	.006	.05
16	HYD-6	.004	.05
17	HYD-7	.004	.05

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Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 513
February 22, 1988

ITEM	SAMPLE NO.	As (ppm)	Sb (ppm)	Mo (ppm)	Hg (ppm)	Cu (ppm)
15	HYD-5	14.	<1.	4.	.04	
16	HYD-6	8.	<1.	<2.	.02	
17	HYD-7	14.	<1.	<2.	<.01	

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. James D. Sell

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 517
March 31, 1988

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 2 Stream Sediment Samples

ITEM	SAMPLE NUMBER	** Weight (grams)	Weight (grams)	FIRE ASSAY Au (ppm)
1	HYD PIT 1	8365.		
2	HYD PIT 2	9674.		
3	HYD PIT 1 -10 +80		4435.	
4	HYD PIT 1 -80		971.	
5	HYD PIT 2 -10 +80		4667.	
6	HYD PIT 2 -80		922.	
7	HYD PIT 1 -10 +80 A			.120
8	HYD PIT 1 -10 +80 B			.100
9	HYD PIT 1 -10 +80 C			12.000
10	HYD PIT 1 -80 A			.350
11	HYD PIT 1 -80 B			.190
12	HYD PIT 1 -80 C			1.300
13	HYD PIT 2 -10 +80 A			.020
14	HYD PIT 2 -10 +80 B			<.020
15	HYD PIT 2 -10 +80 C			<.020

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	** Weight (grams)	Weight (grams)	FIRE ASSAY Au (ppm)
16	HYD PIT 2 -80 A			<.020
17	HYD PIT 2 -80 B			.200
18	HYD PIT 2 -80 C			1.000

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

**NOTE: Total weight of 2 original samples submitted.

William L. Lehmbeck
Manager

H.G. KREIS
2&3-1988

HYDUKE CLAIMS PALO VERDE MTNS
IMPERIAL CO CA

HYDUKE MnO_x MINE AREA

2-88-1 Sample, taken at creek bed level (only exposure of this alt.-min.) on west side. Clay-ser. alt. vole. with a few percent F.T.S. (py). Appears to be an isolated pod along shear ? zone of wk'ly FeO_x stained vole. Sample site is 950' downstream from sample 2-88-2.

2-88-2 Sample. Fracture filling white calcedonic qtz vein. Taken in general area where Hyduke is said to have panned abundant gold out of calcedony but he could not relocate the exact site upon returning to area. 300' down stream from 870803-2 (J'VAL sample site). Had no succ panning

Note: Looked for but could not find J-VAL's high gold in wash.

2-88-3 Sample. Anomalously FeO_x stained (brownish red) andesite with 0-1% calcite veinlets. Weak clay-chlorite alt^n. 200' E. of remnants of wood frame

2-88-4 Sample. MnO_x - calcite veins, ½ oz. 1" thk., in andesite. Sample include wkly FeO_x stained andesite. Sample site 600', N50°E from wood frame. (strike of veins, N50°E stp dip.)

2-88-5 Sample. 1'-4' thk MnO_x - calcite vein, N40E, vert to stply E dipping. Just north of 2-88-4. Short adit. Sample includes andesite wallrock & inclusions. Vein continues with N40°E, v stp E dip for >1000 to NE. Local stoping along vein. Flt. slicks on some walls.

1/1

H.G. KREIS
2-1988
IMPERIAL CO CA

PALO VERDE MTNS

HYDUKE PLACER AU AREA

HYD-1 N25E, 60°N 1' thk flt-vn bxa w/ calcite & v. minor MnO_x matrix. Sampled vein & float of approx. same material. Owner's (?) flagging PG-30 (rebar). ½ placer pits (2'x2'x1' deep) in bottom

HYD-2 E-W striking, 55°N dipping 2' thick, flt(?) vein like structure in andesitic volcanics. Approx 1% former pyrite with spotty distribution in structure; moderate clay-ser. alt^n exposed in bottom of wash.

SE PALO VERDE MTNS

HYD-3 No sample. Nearly flat lying carbonate and clastic Miocene sediments (some fossil shells) with no evidence of hydrothermal activity. Very porous rock. Sec 11 ± T10S, R 21E

CONE "AU" MINE (FLAT TOP MTNS OF PALO VERDE MTNS)

HYD-4 No sample. Couple of shafts with nothing but andesitic volcanics on dumps

-5 Diggings in andesitic volc. (mostly tuff bxa) that rapidly decompose to mud & pebbles to boulders. No evidence of classical hydro. alt.-min. Traces of opalite, some satin spar float. Took sample in drainage in bottom of diggings (trying to get heavier). No pre or post volcanic rocks in float -- all volcanic ejecta with float of overlying basalt. See sample 6

-6 Sample Pebble to coarse sand sized vesicular fragments cemented(?) or filled with disseminated calcite (2-8%) and local minor opalite. Taken in bottom of diggings. Oxidized fragments (red & brown).

-7 Sample of weathered out fines from side of diggings 5' above bottom of diggings.

WLK-ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Barite-MnOx Veins in Conglomerate Palo Verde Mountains						② Country: USA	③ State or Province: California	
						④ USGS Quad.: Palo Verde Mtns.	⑤ File or Gore No.: Imperial	
⑥ Latitude: 33°22'30"	⑦ Longitude: 114°55'	⑧ AMS Sheet: Salton Sea	Township: 9S	Range: 19E 20E	Section:	⑨ Examined by: H.G.Kreis	⑩ Date: 2-1988	
						⑪ Office: Tucson, SWED	⑫ Field Days: 2	

Section II Sources of Information

Date Typed 5-4-88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K.,	1977,	Geology and Mineral Resources of Imperial Co., CDM&G, County Report 7.		

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No action

⑮
- [ ] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Barite & MnOx	very minor	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
Very small.		

⑱ Num. Drill Holes: None

Approx Total Footage: _____

⑲ Excavations: Open cuts

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Barite - MnOx

㉔ Ore Minerals-Major: Barite - MnOx Minor: _____

㉕ Host Rocks-Major: Conglomerate & sandstone (see next page). Minor: _____

㉖ Age of Host Rocks: Tertiary

㉗ Nature of Exposures: Abundant outcrops.

㉘ Alteration: None

㉙ Total Extent: _____

㉚ Structure: Barite-MnOx veins have attitudes of N20-50°W, 50°-85°SW & N10-35°E, 45-90°W. The sedimentary beds have a NS to NNE strike and a 15-55°E dip.

㉛ Ore Occurrence: There are veins of barite, barite-MnOx, and MnOx. Calcite is common in many of the veins. The veins are typically <3' thick but locally swell to 15'. The veins are very widely (see pg. 2)

㉜ Age of Mineralization: Tertiary

㉝ Conclusions & Recommendations: Published descriptions of barite-MnOx veins in red conglomerate were the basis for a reconnaissance evaluation of this area. The evaluation included searching for bulk tonnage Ag-Au in veins, in adjacent permeable sedimentary wall rocks, and in pediment areas. The sediments are permeable, have an FeOx stain (not from pyrite), and have local interstitial calcite and quartz; but, there are no significant gold-silver values in the veins, the wall rocks, or the sediments on the edge of the pediment (south edge (see pg. 2)

(For additional space use extra sheets)

Form Revised June 1980

25. Host Rocks- Major (Continued)

The conglomerate is a typical Tertiary basin-fill type conglomerate. It is composed of fine sand to boulder sized clasts. There is very little interstitial silt and mud, so the conglomerate appears very permeable. The color of the conglomerate is either red or gray depending on the presence or absence of a FeOx stain.

Interbedded in the conglomerate are units of medium grained sandstone. Like the conglomerate, the sandstone appears permeable and there are red and gray colored beds.

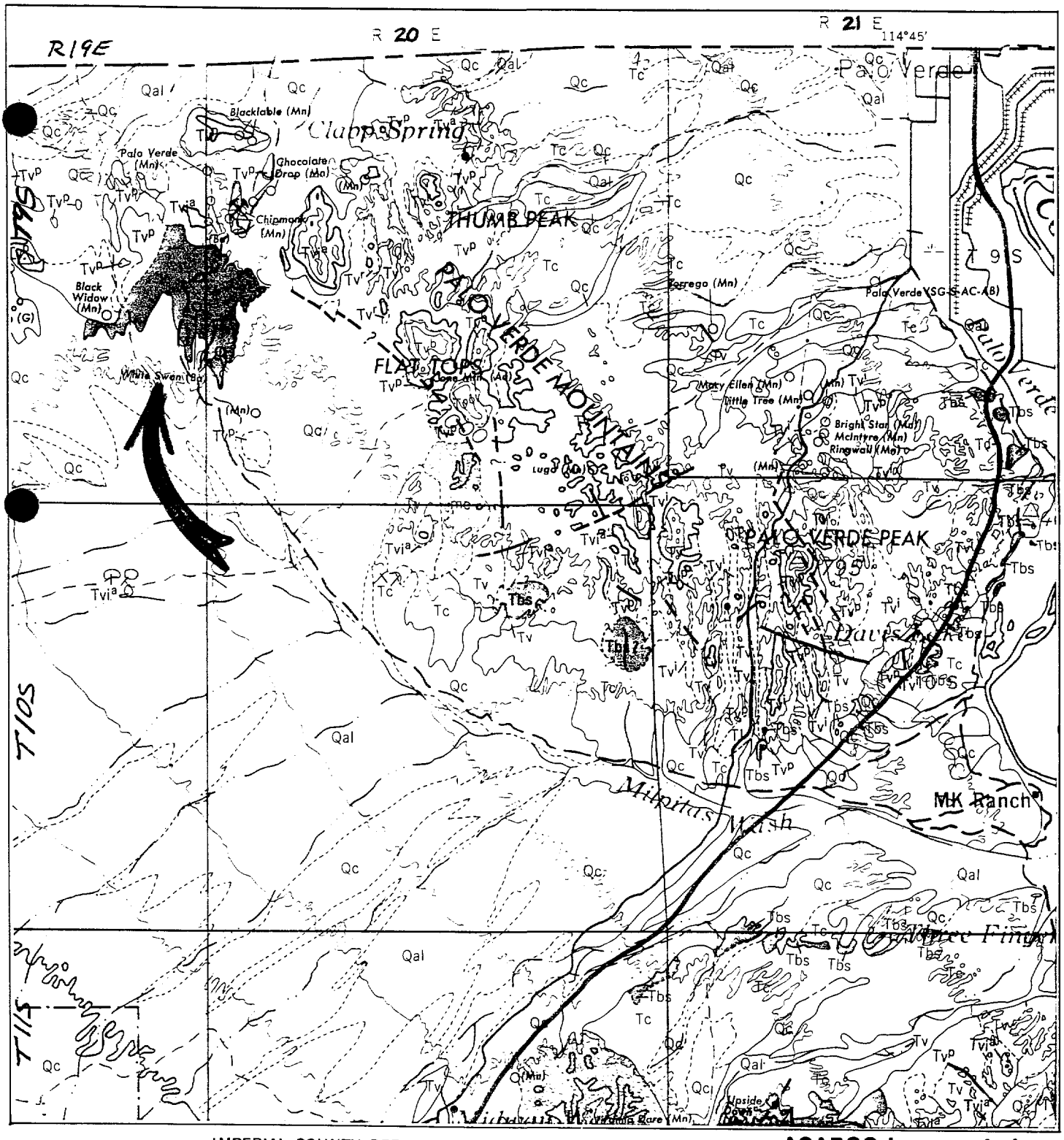
31. Ore Occurrence (Continued)

spaced, and nowhere did they approach an abundance that one would find in a bulk tonnage situation. Barite and MnOx do not disseminate into the wall rocks, but some beds carried abundant interstitial calcite of possible hydrothermal origin. Local minor interstitial quartz is also present.

Of all the vein and wall rock samples, the highest silver value is 6.5 ppm in HYD-9, a sample of 1"-2" thick barite veins. All the other vein and wall rock samples contain <1ppm Ag. None of the samples have anomalous gold values. The highest gold value is 18 ppb in HYD-39. Nine vein and wall rock samples were run for As, Sb, Mo, and Hg; and the range of the values is as follows: 16-65 ppm As, <1 to 7 ppm Sb, <2 to 4 ppm Mo, and <.01 to 0.49 ppm Hg.

33. Conclusions & Recommendations (Continued)

of sampled area). Consequently, this area is of no further interest at this time.



IMPERIAL COUNTY REPORT 7
PLATE 1

ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 9S **Rng.:** 19E 20E **Sec.:**

Prospect Name: BARITE-MnOx VEINS IN CONG.-SS

Owner: —

State: CALIF

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 2 MILES

map no. HGK **date** 5-3-1988

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = **yellow-gray, moderately to poorly consolidated, poorly sorted** pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

[redacted] 163 mm yr. (60 mm yr. metamorphic age)

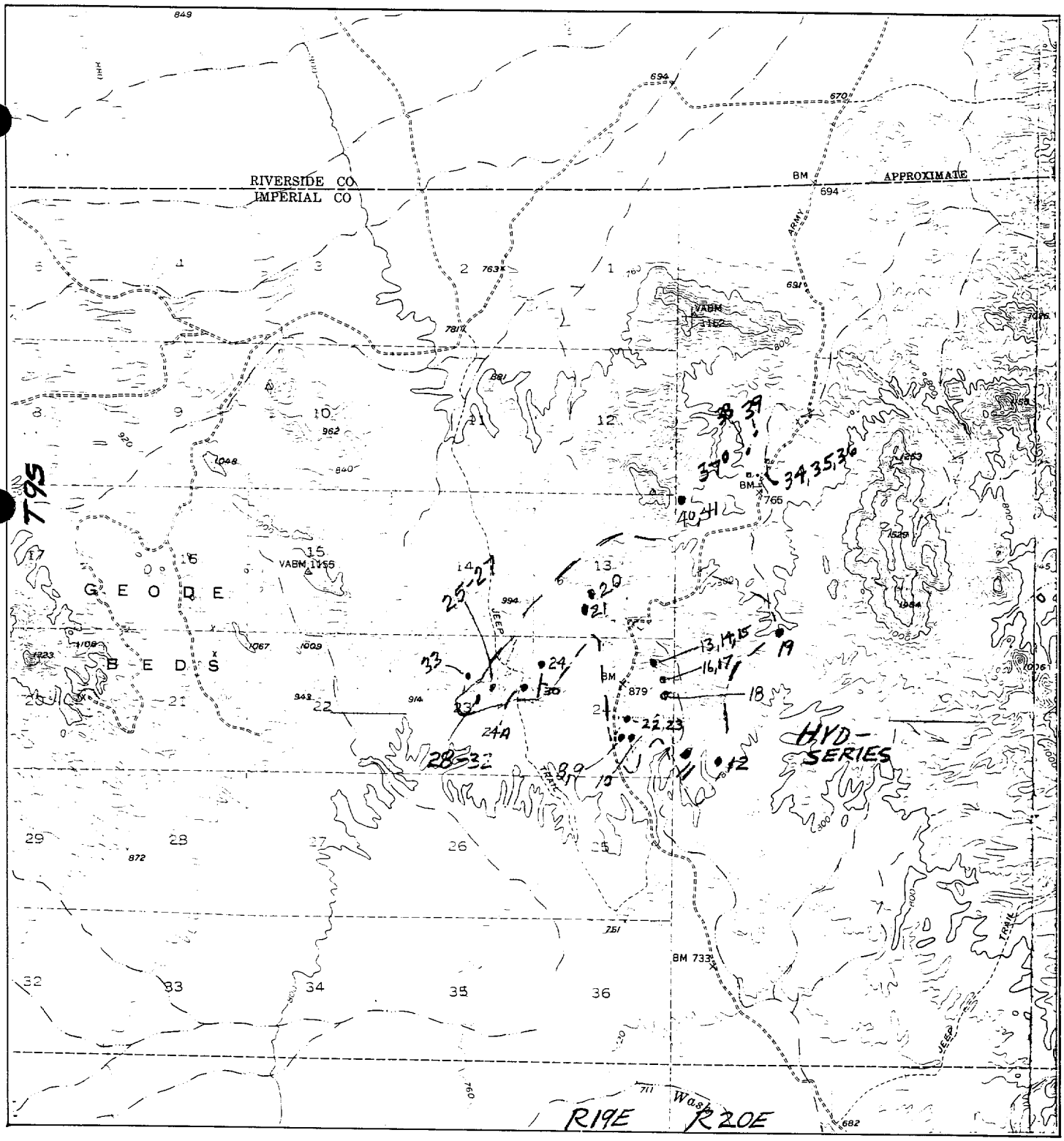
Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mcgn 166–170 mm yr. (bio. gneiss) ≈180 mm yr. (Hbl gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), *foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.*



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 9S **Rng.:** 19E 20E **Sec.:**

Prospect Name: BARITE-MnO_x VEINS

Owner: —

State: CALIFORNIA

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 1 MILE

map no. HGK **date** 5-3-1988

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 513
February 22, 1988
K-88-1 TO KH-8

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
FEB 25 1988
SW Exploration

Analysis of 31 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
18	HYD-8	.009	.65
19	HYD-9	.006	6.50
20	HYD-10	.006	.70
21	HYD-11	.011	.05
22	HYD-12	.006	.05

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ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)
32	HYD-13	.004
33	HYD-14	<.002
34	HYD-15	.003
35	HYD-16	<.002
36	HYD-17	<.002
37	HYD-18	<.002
38	HYD-19	<.002
39	HYD-20	<.002
40	HYD-21	.002
41	HYD-22	<.002
42	HYD-23	.002
43	HYD-24	<.002
44	HYD-25	<.002
45	HYD-26	.004
46	HYD-27	.002
47	HYD-28	.008
48	HYD-29	.003
49	HYD-30	.005
50	HYD-31	.005

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ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)
51	HYD-32	.003
52	HYD-33	.005
53	HYD-34	.004
54	HYD-35	<.002
55	HYD-36	.002
56	HYD-37	<.002
57	HYD-38	.007
58	HYD-39	.018
59	HYD-40	.005
60	HYD-41	<.002
61	LMM-88-5	.002

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REPORT OF ANALYSIS

JOB NO. TAJ 515A
March 25, 1988
2-88-1 TO LMM-88-5

ASARCO INCORPORATED
Attn: Mr. Henry G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 29 Pulp Samples

ITEM	SAMPLE NO.	Ag (ppm)
32	HYD-13	.2
33	HYD-14	.2
34	HYD-15	.2
35	HYD-16	.2
36	HYD-17	.2
37	HYD-18	.2
38	HYD-19	.2
39	HYD-20	.2
40	HYD-21	.2
41	HYD-22	.4
42	HYD-23	.4
43	HYD-24	.2
44	HYD-25	.2
45	HYD-26	.8
46	HYD-27	.2

ASARCO Incorporated
MAR 28 1988
SW Exploration

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
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Tucson, Arizona 85703
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JOB NO. TAJ 515A
March 25, 1988

ITEM	SAMPLE NO.	Ag (ppm)
47	HYD-28	.2
48	HYD-29	.2
49	HYD-30	.2
50	HYD-31	.2
51	HYD-32	.2
52	HYD-33	.4
53	HYD-34	.2
54	HYD-35	<.2
55	HYD-36	.2
56	HYD-37	.4
57	HYD-38	.2
58	HYD-39	.2
59	HYD-40	.2
60	HYD-41	.2

cc: Mr. James D. Sell

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L.
LEHMBECK

William L. Lehmbeck
Manager

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NO.	As (ppm)	Sb (ppm)	Mo (ppm)	Hg (ppm)	Cu (ppm)
15	HYD-5	14.	<1.	4.	.04	
16	HYD-6	8.	<1.	<2.	.02	
17	HYD-7	14.	<1.	<2.	<.01	
18	HYD-8 Conq (Red)	32.	<1.	4.	.02	
19	HYD-9 Bu vein	22.	4.	<2.	.49	
20	HYD-10 Conq. (Red)	65.	7.	<2.	.16	
21	HYD-11 Conq (Red)	55.	6.	<2.	.07	
22	HYD-12 Conq (Grey)	24.	<1.	4.	<.01	
23	BLY-1			<2.		18.
24	KH-1	28.	<1.	<2.		
25	KH-2	42.	<1.	2.		

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. James D. Sell

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

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ITEM	SAMPLE NO.	As (ppm)	Sb (ppm)	Mo (ppm)	Hg (ppm)
43	HYD-24 Cong (Red)	40.	1.	<2.	<.01
51	HYD-32 Cong. (Red)	24.	1.	<2.	.04
56	HYD-37 Cong.	38.	4.	<2.	<.01
57	HYD-38 Lms	16.	<1.	<2.	.04

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. James D. Sell

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DULY SIGNED Arizona U.S.A.

William Lehmbeck
Manager

3/7/88

H.G. KREIS
FEB-MAR 1988

CONGLOMERATE WITH MnO_x-BARITE VEINS
PALO VERDE MTNS, IMPERIAL CO CA

1/4

SECTION 24 ARLA T9S R19E PALO VERDE MTS

HYD-8 Sample. Red sandy conglomerate. Conglom. has a granitic-metamorphic source. Minor very local apparent interstitial silicification & calcite seen only locally in weathering resistant float. Minor interstitial transported FeO_x. Generally the interstices are open and very porous. N-S, 40°E bedding

HYD-9 Sample, 1-2" barite vein => hosted by rocks of HYD-8 type. Tossed out of now buried prospect pit.

-10 Sample. Same geol as HYD-8 only this is 1' thick bed with some interstitial qtz (silicification) & calcite.

Remark: In the topographic low between 10 & 11 the conglom. is only weakly, and FeO_x stained and weakly cemented

-11 Same geol. as HYD-8. Sample taken at ridge top. Bedding has mod. east dip.

-12 Sample. Grey conglomeratic sandstone w/ interstitial strong calcite.

HYD-13 Sample. 1'-5' thk. barite vein with 1-10% MnO_x. Striker N45W, dips 80°SW. Conglomerate walls.

HYD-14 Sample, 6' stat. thkness of red, basin-fill type conglomerate of NE wall, upto 10' from vein of sample HYD-13. Sample excludes larger clasts.

-15 Sample, 3' stat. thkness of same type conglom as HYD-14. Taken 10' SW of vein (HYD-13). Larger clasts (gneiss, granitic & volc.) excluded.

-16 Sample. 10' SW-NE of red friable sandstone with 3% barite-MnO_x veins. Sample taken between 2, N35°W, 80°E barite-MnO_x veins (1'-2' thk.). Shallow dipping bedding (≈10

-17 Sample. Barite >> MnO_x veins (N35°W, 80°E) on both sides of sample HYD-16.

-18 Sample. Red conglom. & sandstone beds 500' SW of vein. These beds are relatively more erosion resistant and up dip from veins of HYD-17. Rare opaline veins (upto 1' thk.

-19 Sample. 1' thk, N10E, vert. MnO_x & minor barite vein in 4'x4'x2' prospect pit. Approx 500' E of Sec 18-19 ¼ corner. Sample of vein and MnO_x dispersed into conglom. wallrock. Location of ¼ co. in field doesn't fit topog.

-20 Sample. Series of 1"-1' thick Calcite > MnO_x veins across ±40' width. N35°E strike, steep dip. Hosted in conglom.

-21 Sample. Resistant red conglom and red conglomerate sandstone on ridge top, local calcite and local possible barite filling interstitices.

-22 Sample. 1' thk barite-MnO_x vein, N10°E 45°W. 6" barite against HW. and 6" MnO_x with barite inclusions against F

HYD-23 Sample. H.W. & F.W. red conglom & sandstone within 5' of barite = MnO_x vein (sample HYD-22)

-24 Sample. Red conglom. Sample taken across strat. section exposed in west slope of hill. Sampled more resistant beds excluding larger clasts.

-24A No sample. Good example of unoxidized, less resistant conglom. exposed in west bank of wash

-25 Sample. N35-50°W, 50°SW, ≈ 4' thk calcite > MnO_x ≥ bari vein.

-26 Sample. Red conglom. (v. poorly exposed) in SW wall of vein (HYD-25). Taken w/in 10' of vein.

-27 Sample. Red conglom, resistant ridge former, about 100' NE of vein in HYD-25. Interstitial calcite & FeO, Bedding N10°E, 55°E.

Taken across vein in cut.

-28 Sample. N20°W, 55°W vein, approx. 14' thick. This sample from lowermost 7'. Vein composed of calcite-barite-chalcedonic qtz-MnO_x. Latite (composition?) footwall of vein not sampled, not signif alt. or mineralized

-29 Sample. Vein (same vein as HYD-28), 7'-12' above FW.

-30 Sample. Vein, 12' to 13.5' above F.W. Sample >90% calcite & barite

-31 Sample. 2' of H.W. conglom adjoining sample HYD-30, 90% red conglom. with 10% MnO_x & calcite veinlets.

-32 Sample. Red conglom (bedding N30°E, 35°SE). Sample taken for 200' along trend of vein (HYD-28 to 31) approx 20' to 50' west of vein. Calcite filled interstitices make rock hard.

#

HYD-33 Sample. 8' thk. of vein sampled. Calcite-barite-MnO_x vein, northern continuation of vein at HYD-28 to-31.

-34 Sample. N15°W, vert, ± 3' thk MnO_x vein, stoped out and inaccessible. Sampled "dump" pieces and veinlets in wall of vein. Conglom host rock (HYD-35)

-35 Sample. Lt from conglom. east wallrock of vein in HYD-34.

-36 Sample, " " " west " " " " " ", Tan colored conglom 50' W. of vein.

-37 Sample. Highly resistant calcite (interstitial) rich conglom. Dips gently north. Forms prominent mesa.

-38 Sample. Lt. gray, porous limestone (sinter?). Appears full of micro sized solution channel ways & worm tube. Appears ≈ 10' thick -- either in or on top of conglom. sequence. Top of lime covered = conglom. debris.

-39 Sample. Lt. gray, porous lime (as in HYD-38). Float of probable subcrop.

-40 Sample, ½"-3" veins, discontinuous, often stockwork like, northerly strike. MnO_x w/ local barite and trace yellow silver (?) salt. Basaltic andesite and volc. agglom host rocks.

-41 Sample. Basaltic andesite & volc. agglom host rocks of HYD-40. Local green clay in vesicles. Locally soft as if clay altered. Much hard & fresh.

WLK-ER file

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Gneiss in Palo Verde Mtns.	USA	California
	④ USGS Quad. Palo Verde Mtns	⑤ File or Gore No. Imperial Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°20'30"	114°51'30"	Salton Sea	9S 10S	20E		H.G. Kreis	2-1988
						⑪ Office Tucson, SWED	⑫ Field Days 2

Section II Sources of Information

Date Typed 5-4-88

⑬ References

Author	Date	Title	Publications	Vol. No.
Morton, P.K., 1977, Geol. and Min.Res. Imperial Co.; CDMG County Report 7				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No Action

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None
Approx Total Footage _____

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals None

㉔ Ore Minerals-Major None Minor

㉕ Host Rocks-Major Granite gneiss (looks like qtz dio.gn) and Minor andesite. Lms at 2-88-31.

㉖ Age of Host Rocks Mesozoic and Tertiary

㉗ Nature of Exposures Abundant outcrops of FW and HW rocks but fault zone is commonly talus covered.

㉘ Alteration Bleaching and weak sericitization along fault zone.

㉙ Total Extent 5'-20' wide along strike length.

㉚ Structure Strongly developed, low to moderately dipping, thrust-like fault zone strikes ± N-S and dips to east. Local folding and high angle faults.

㉛ Ore Occurrence 5' to 20' to locally 50' thick fault zone separating granite gneiss footwall from andesite hanging wall. Local minor quartz associated with bleaching and sericitization (see page 2)

㉜ Age of Mineralization Tertiary

㉝ Conclusions & Recommendations P. Morey of J'VAL spoke of strong quartz mineralization and placer gold along the east edge of the granite gneiss. There is no indication of gold mineralization, and the quartz mineralization is not strong. The sampled fault zone is of no further interest in this area.

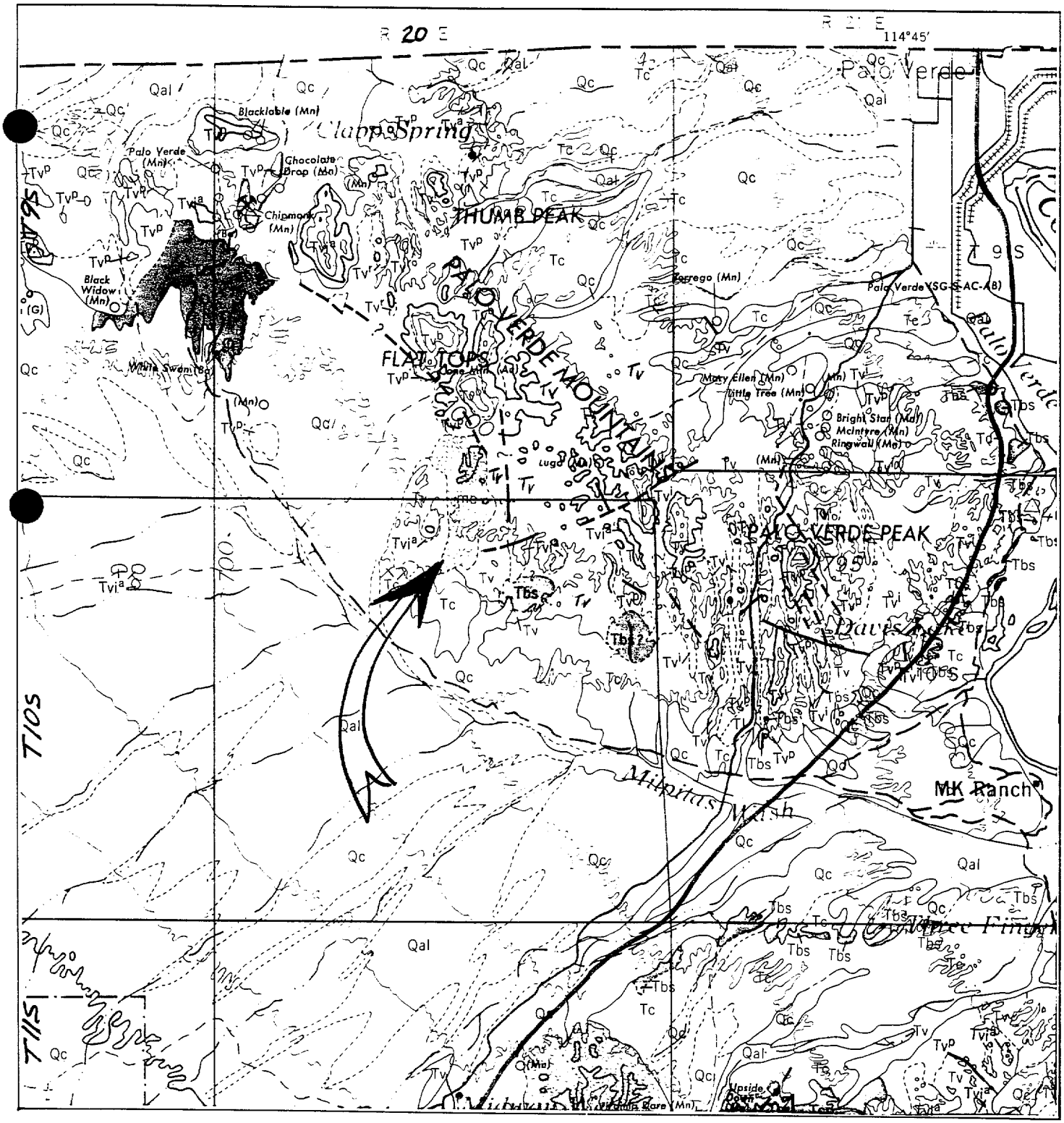
(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5102

31. Ore Occurrence (Continued)

along fault zone. Iron rich calcite veins up to 2" thick are common in the andesite in the southeastern part of the map area and are much less common in the granite gneiss. The calcite veins weather with a brown goethite rich coating. The calcite veins continue more than a mile to the southeast.

The attached geochem sampling was done along the fault zone, and the two highest gold values were 0.060 ppm (2-88-9) and 0.028 ppm (2-88-9). All the other samples were 0.010 ppm or less.



IMPERIAL COUNTY REPORT 7
PLATE 1

ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 9S 10S **Rng.:** 20E **Sec.:** _____

Prospect Name: GNEISS IN PALO VERDE MTNS

Owner: HYDUKE - J. VAL

State: CALIF.

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 2 MILES

map no. H.G.K. **date** 5-3-1988

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

Pliocene

Tb

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = **yellow-gray, moderately to poorly consolidated, poorly sorted** pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Ter

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

[redacted] 163 mm yr. (60 mm yr. metamorphic age)

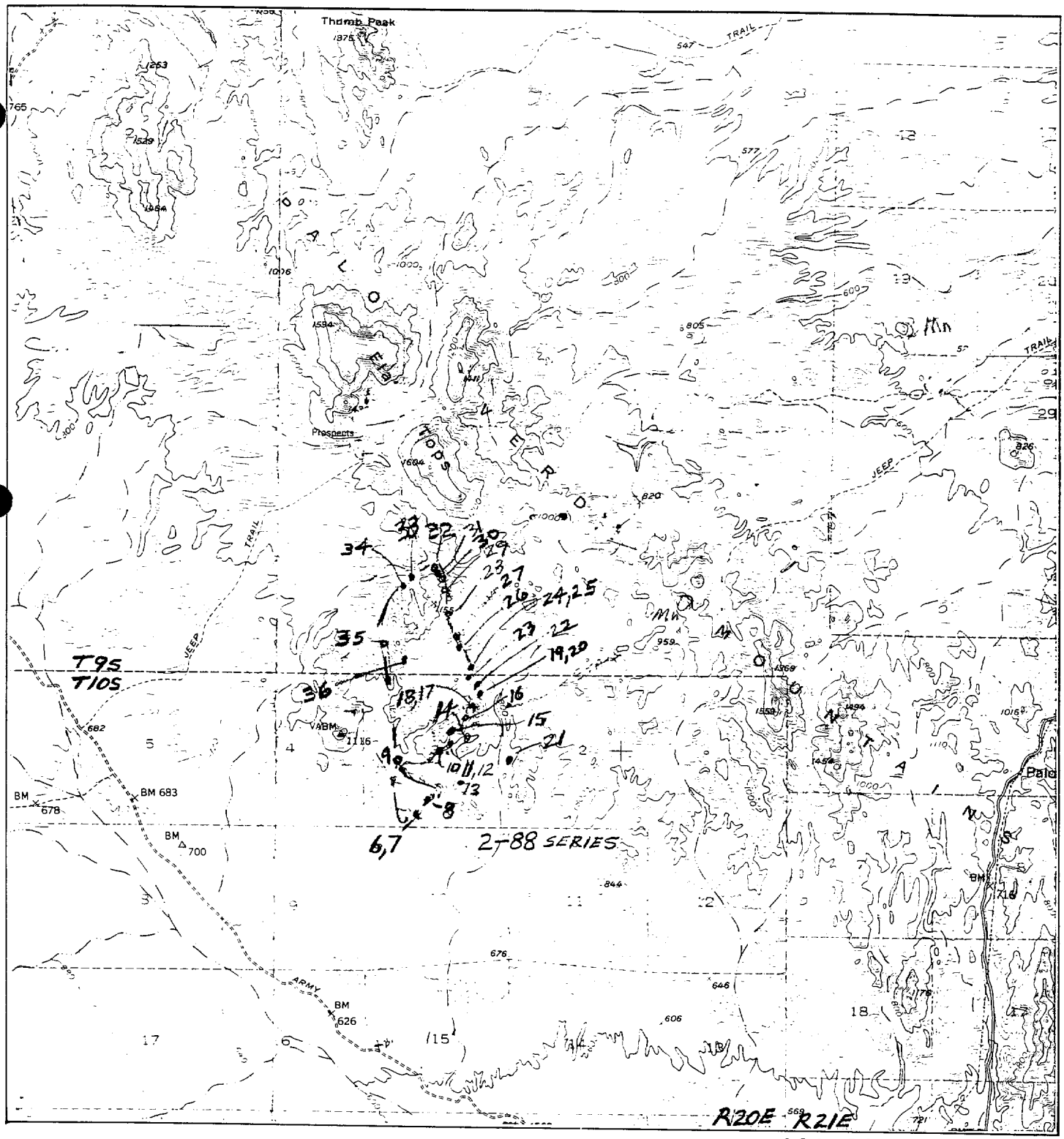
Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc 166–170 mm yr. (bio. gneiss) ≈180 mm yr. (hbl. gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 9&10S **Rng.:** 20E 21E **Sec.:** _____

Prospect Name: GNEISS -- PALO VERDE MTNS.

Owner: HYDUKE -- J'VAL

State: CALIFORNIA

County: IMPERIAL

District: PALO VERDE MTNS

SCALE: 1" = 1 MILE

map no. HGK **date** 5-3-1988

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 515
March 16, 1988
2-88-1 TO LMM-88-5

ASARCO INCORPORATED
Attn: Mr. Henry G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 61 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)
6	2-88-6	.004
7	2-88-7	.007
8	2-88-8	.005
9	2-88-9	.060
10	2-88-11	.003
11	2-88-12	.004
12	2-88-13	.005
13	2-88-14	.028
14	2-88-16	.007
15	2-88-17	.004
16	2-88-18	.004
17	2-88-19	.005
18	2-88-20	.006
19	2-88-21	.004
20	2-88-22	.004
21	2-88-23	.004
22	2-88-24	.005
23	2-88-25	.010
24	2-88-26	.007
25	2-88-27	.002

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)
26	2-88-28	.004
27	2-88-30	.002
28	2-88-31	.002
29	2-88-32	<.002
30	2-88-33	<.002
31	2-88-35	<.002

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

H. G. KREIS
2&3-1988

HYDUKE CLAIMS PALO VERDE MTNS
IMPERIAL CO CA

1/5

HYDUKE MnO_x MINE AREA

2-88-1 Sample, taken at creek bed level (only exposure of this alt.-min.) on west side. Clay-ser. alt. vole. with a few percent F.T.S. (py). Appears to be an isolated pod along shear(?) zone of wk'ly FeO_x stained vole. Sample site is 950' downstream from sample 2-88-2.

2-88-2 Sample. Fracture filling white chalcedonic qtz vein. Taken in general area where Hyduke is said to have panned abundant gold out of chalcedony but he could relocate the exact site upon returning to area. 300' down stream from 8-70 803-2 (J'VAL sample site)

Note: Looked for but could not find J-VAL's high gold in wash. Had no success panning

2-88-3 Sample. Anomalously FeO_x stained (brownish red) andesite with 0-1% calcite veinlets. Weak clay-chlorite alt^n. 200' E. of remnants of wood frame

2-88-4 Sample. MnO_x - calcite veins, 1/2 doz. 1" thk., in andesite. Sample include wkly FeO_x stained andesite. Sample site 600', N50°E from wood frame. (strike of veins N50°E stp dip.)

2-88-5 Sample. 1'-4' thk MnO_x - calcite vein, N40E, vert to stply E dipping. Just north of 2-88-4. Short adit. Sample includes andesite wallrock & inclusions. Vein continues with N40°E, v stp E dip for >1000 to NE. Local stoping along vein. Flt. slicks on some walls.

: WEST AREA

2-88-6 Sample. Dark (FeO_x stained), strongly sheared, gneissic textured one granitic textured rock (v. lt. colored to west) with several 1" thk calcite veins that weather brown (like andesite). ≈25' thk, discontinuous zone along gneiss - andesite contact. (5'N10E, 45°E attitude).

2-88-7 Sample, 1/2" thk brown calcite vein. Hosted in andesite just above 2-88-6.

2-88-8 Sample. Lt. to dk brownish red (most from brown calcite) gneiss with 1-5% brown calcite veinlts and trace opalite. Highly fractured, roughly 30' thick, gn-and. contact.

2-88-9 Sample. Brown FeO_x stained, highly fractured gneiss with 1 to 5% brown calcite veinlts. Near contact w/ andesite.

2-88-10 No sample. Strongly developed folding & shearing in gneiss. Probable major thrust.

2-88-11 Sample. Andesite with weak brown calcite veinlts and an occasional discontinuous qtz vein (<3" thk) High graded sample with emphasis on including vnlts. More qtz vnlts 1"-3" thk, 300' to east.

2-88-12 Sample. 300' E of 2-88-11. High graded 1" to 3" thk. qtz veins in andesite.

2-88-13 Sample. 50' length across zone of stwns, high angle shearing with 5% brown calcite veinlets. Andesite, probably ± 100' or 200' above gneiss.

Note: Calcite (oxidizes brown) continues a least ½ mi SE of area of sample

2-88-14 Sample. Taken across andesite-gneiss contact. 8' vert. sample, 6' gn + 2' and. Relatively weak FeO_x, ≤1% goeth. on fract. Strong shearing & contorted shear structure. Appears to be complex mixture of high angle fault and moderate dipping (ESE) thrust faulting.

S22W to bloyer

2-88-15 No sample. Rock now has much more of a granitic texture. Biotite diorite (?) with partial chloritization of biotite. Much less calcite veining in footwall rocks in this area.

#

2-88-16 Sample, located in saddle of NE-SW trending ridge. Bleached and weakly sericitized gneiss with ≈1-2% goethitic carbonate veins. Wk FeO_x stain. Approx 1/4 of sample is bleached andesite from H.W. Rare qtz veining.

2-88-17 Sample. North & down ridge from top of peak. Bleached and locally weakly sericitized gneiss with local weak FeO_x stain and ≤1% goethitic calcite veinlets. Taken just below andesite

2-88-18 Sample. Structurally just above 2-88-17. 1/2 of sample andesite just above gneiss 1/2 " " "high graded" carbonate (goethitic) veins.

2-88-19 Sample. Gneiss (same as 2-88-17), 0 to 10' from contact with andesite of 2-88-20.

2-88-20 Sample, Andesite immediately above contact with gneiss.

2-88-21 Sample. 1"-3" thk goethitic calcite veins. Andesite host rock accounts for 1/3-1/2 of sample.

2-88-22 Sample. 1/2 "high grade" andesite with calcite and wht. qtz veining (<8% of rock) and 1/2 "high graded" wkly sericitized, bleached, white gneiss w/ 1% disc. goe. after mafics or pyrite. The andesite was taken out of an area of ≈300' x ≈200' of bleaching and moderate FeO_x staining.

2-88-23 Sample. "High graded" qtz veins (2' wht qtz) in gneiss and qtz-carbonate veins in andesite along gn-and. contact. Top of small hill

2-88-24 Sample at N30°E, 55°SE dipping gn-andesite fault contact in wash. Sampled gneiss (actually wk'ly sericitized meta qtz diorite and has been since 2-88-15) with white qtz (up to 2' thick) from and-gn contact 30' horiz. into F.W. <1% dis. goe apparently after magnetite (some mag. remnants)

2-88-25 Sample. Red FeO_x stained andesite, <1/2% goethitic calcite veins. Taken 0' to 20' into H.W.

2-88-26 Sample. White bleached, weakly sericitized qtz dio. with qtz rich ribs just below contact with andesite. The contact here dips 15-25° E'ly. Sample taken 0 to 20' below contact w/ andesite.

Remark: Andesite H.W. rocks at 2-88-26 & 27 are unalt.-unmineralized (rare goethitic calcite veinlets.

2-88-27 Sample. Uniformly white colored (little to nill color contrast between qtz & feldspar(s)) qtz dio. with weak sericitization and possible local silicification. Some rock has appearance of white bull qtz but questionable. Sampled 0'-10' beneath andesite.

2-88-28 Sample. Same geol. as 2-88-27. Taken 0'-6' beneath andesite.

2-88-29 No sample. Barren andesite H.W. and nothing of signif. in F.W.

2-88-30 Sample. 25' stratagraphic thickness of carbonate beds and sed. breccia striking N50°E, 50°SE. Strongly developed layering; layers vary from highly siliceous to totally calcite rich. Contact with overlying andesite (barren) is mod. to stply dipping. Coarse bxa w/ black aphanitic matrix in F.W. & included in sample. Sampled entire width across layering & ~~including~~ coarse bxa.

#

2-88-31 Sample. Strongly bedded (1/4"-1'), gray to black limestone with local minor silica rich (chert?) layers. Sampled across strata for ≈30'. Beds strike N15W, dip 55°E. These are old carbonate beds (Mesozoic?) and nothing like the very young carbonate beds on SE flank of Palo Verde Mtns.

2-88-32 Sample. Sampled high angle fault contact breccia between and. and qtz dio and 30' into qtz dio.

2-88-33 Sample. 10% fracture filling black to locally white qtz in brecciated andesite. High graded qtz rich andesite.

2-88-34 No sample. Qtz dio - and. contact totally covered by talus & Qal in this area.

2-88-35 Sample Barren, gray, fissle sericite schist at contact. Foliation N30W, 55°SW. Sampled schist from 0' to 20' from andesite.

2-88-36 No sample. Very complex low angle (thrust) & high angle faulting. Fault sliver of limestone (2' thk) in qtz dio.

WLK - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Altered Granite, Highway 95 Roadcut	USA	California
	④ USGS Quad. Blythe NE	⑤ File or Core No. Riverside Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
33°43'	114°30'	Blythe	5S	23E	NE¼ 25	H.G.Kreis	2-1988
						⑪ Office Tucson, SWED	⑫ Field Days <½

Section II Sources of Information

Date Typed 5-4-88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Future int.

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Checked for Au, Ag, Cu, Mo

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major Granite Minor _____

㉖ Age of Host Rocks pЄ (?)

㉗ Nature of Exposures Road cut on edge of Colorado River, covered flood plain.

㉘ Alteration Sericite alteration of plagioclase and biotite

㉙ Total Extent >200' by >20' (extensive cover)

㉚ Structure Fractured and faulted.

㉛ Ore Occurrence 1-3% oxidized disseminated pyrite. One sample BLY-1: 0.004 ppm Au, 0.05 ppm Ag, 18 ppm Cu, <2 ppm Mo.

㉜ Age of Mineralization Laramide (?)

㉝ Conclusions & Recommendations Outcrop in road cut is typical of porphyry copper type mineralization and is of future interest.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: DEVIL'S CANYON						② County: Clark	③ State or Province: Nevada
						④ USGS Quad.: Horse Thief Spgs.	⑤ File or Gore No.
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Death Valley	Township: 25S	Range: 58E	Section: 33	⑨ Examined by: T.Dalla Vista	⑩ Date: 1988
						⑪ Office: Tucson, SWED	⑫ Field Days: 2

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Zn, Pb, Ag, Au	?	?

⑰ Reserves
- [ ] Measured
- [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes -0-

Approx Total Footage _____

⑲ Excavations: Adits & Stokes, Shaft

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Base metals + Au, Ag

㉔ Ore Minerals-Major: Pb, Zn (Ls_3) Minor: Cu, Ag, Au

㉕ Host Rocks-Major: Limestone Minor:

㉖ Age of Host Rocks: Pennsylvanian

㉗ Nature of Exposures: Localized SiO_2 and breccia in limestone in outcrops and washes.

㉘ Alteration: SiO_2

㉙ Total Extent

㉚ Structure: Fault and shear zones (alteration)

㉛ Ore Occurrence

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: Lack of Au/Ag mineralization.

(For additional space use extra sheets)

Form Revised June 1980 - J.H.C. MVK-5102

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 521
April 25, 1988

ASARCO INCORPORATED
Attn: Mr. Tony Dalla Vista
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
APR 27 1988
SW Exploration

Analysis of 61 Rock Chip Samples

	ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
	1	KR88-1	.005	.20	8.	<1.	.10
	2	KR88-2	.440	18.00	690.	85.	>5.00**
	3	KR88-3	.020	1.30	32.	1.	1.20
	4	KR88-4	.300	12.00	580.	100.	>5.00**
	5	KR88-5	.005	.20	18.	4.	.08
Kingston Range	6	KR88-6	.005	.20	6.	<1.	.12
	7	KR88-7	<.005	.15	4.	<1.	.06
van Ert	8	KR88-8	.005	.10	<2.	<1.	.03
	9	KR88-9	.005	.20	10.	6.	.06
	10	KR88-10	<.005	.10	<2.	<1.	.12
	11	KR88-11	<.005	.10	4.	<1.	.04
	12	CM88-1	.010	.25	85.	12.	.04
JR Levit	13	CM88-2	.005	.10	50.	3.	.06
Mesquite	14	CM88-3	<.005	.10	26.	<1.	.04
Range	15	CM88-4	.005	.15	38.	<1.	<.01
w of Mountain Pass	16	CM88-5	<.005	.05	60.	5.	.02
	17	DC88-1	<.005	.20	46.	2.	.12
	18	DC88-2	.005	.20	16.	<1.	.10
	19	DC88-3	.010	13.00	60.	<1.	.30
	20	DC88-4	.010	7.40	30.	9.	4.00
DEVILS CANYON	21	DC88-5	<.005	.30	6.	<1.	.10
	22	DC88-6	<.005	.40	20.	<1.	.18
	23	DC88-7	.010	.20	20.	<1.	.10
	24	DC88-8	.005	.25	38.	<1.	.03
	25	DC88-9	.005	.90	8.	<1.	.06

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	DC88-10	<.005	.35	6.	<1.	.14
27	DC88-11	<.005	.05	10.	<1.	.20
28	DC88-12	<.005	.25	22.	<1.	.08
29	DC88-13	<.005	2.30	12.	<1.	.42
30	DC88-14	<.005	1.00	28.	<1.	.30
31	DC88-15	.010	3.60	34.	3.	4.20
32	GV88-27	.015	4.30	6.	2.	.02
33	GV88-28	.005	.55	4.	3.	<.01
34	GV88-29	.015	3.60	22.	12.	<.01
35	GV88-30	.090	3.80	<2.	1.	<.01
36	GV88-31	7.800	90.00	26.	4.	<.01
37	GV88-32	6.000	68.00	6.	2.	<.01
38	GV88-33	.050	1.60	30.	1.	.18
39	GV88-34	.055	.45	34.	1.	.04
40	GV88-35	.490	3.90	20.	2.	.03
41	GV88-36	.760	.10	38.	4.	.03
42	GV88-37	.080	2.40	26.	6.	.04
43	GV88-38	.460	20.00	2.	3.	.03
44	GV88-39	.055	4.70	8.	3.	.04
45	GV88-40	.010	.45	6.	<1.	.03
46	GV88-41	<.005	2.30	12.	3.	.03
47	GS88-1	.005	.80	14.	24.	.56
48	GS88-2	.015	24.00	65.	65.	>5.00**
49	GS88-3	.035	32.00	700.	340.	>5.00**
50	GS88-4	.020	1.10	90.	60.	.42

DEVIL'S Canyon

Tailings

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② County	③ State or Province
RATTLESNAKE MINES	San Bernardino	California
	④ USGS Quad. Kingman	⑤ File or Core No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
		Kingman	12N	18E	30	T. Dalla Vista	1988
						⑪ Office Tucson, SWED	⑫ Field Days 1½

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮

- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Au	unknown	unknown

⑰ Reserves

[ ] Measured [X] Estimated

Commodity	Tons	Grade
Au	90,000?	.08?

⑱ Num. Drill Holes 10
Approx Total Footage 1000

⑲ Excavations: Shafts, trenches

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major: Au Minor:

㉕ Host Rocks-Major: PЄ Gneiss/shists Minor:

㉖ Age of Host Rocks: PЄ

㉗ Nature of Exposures: Small open pit, trenching in otherwise covered formation. Strongly weathered and friable.

㉘ Alteration

㉙ Total Extent

㉚ Structure: Shear zone NW-SE

㉛ Ore Occurrence: In shear zone.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: Zone is too narrow and low grade, even in pit area, to warrant any exploration venture.

(For additional space use extra sheets)

Form Revised-June 1980-JHC MVK-5193

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 518
April 6, 1988
RSM 88-1 TO BAR 88-6

ASARCO Incorporated
APR 8 1988
SW Exploration

ASARCO INCORPORATED
Attn: Mr. T. Dalla Vista
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 30 Rock Chip Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
1	RSM 88-1	.010	.40	4.	<1.	.02
2	RSM 88-2	.005	.85	4.	<1.	.02
3	RSM 88-3	<.005	.25	6.	<1.	.02
4	RSM 88-4	.010	.50	4.	<1.	<.01
5	RSM 88-5	.220	4.60	4.	<1.	.04
6	RSM 88-6	.280	.30	4.	<1.	.06
7	RSM 88-7	.035	.05	4.	<1.	.06
8	RSM 88-8	.010	.25	4.	<1.	.06
9	RSM 88-9	<.005	.25	2.	<1.	<.01
10	RSM 88-10	.010	.20	4.	<1.	.02
11	RSM 88-11	.010	.20	4.	<1.	.02
12	RSM 88-12	<.005	.10	4.	<1.	.02
13	RSM 88-13	<.005	.05	2.	<1.	.02
14	RSM 88-14	.005	.10	4.	<1.	.04
15	RSM 88-15	.020	.10	2.	<1.	<.01
16	RSM 88-16	<.005	.15	2.	<1.	.06
17	RSM 88-17	.005	.05	4.	<1.	.06
18	RSM 88-18	<.005	.05	2.	<1.	.02
19	RSM 88-19	.005	.10	<2.	<1.	.06
20	RSM 88-20	.010	.10	4.	<1.	.08
21	RSM 88-21	<.005	.35	4.	<1.	.02
22	RSM 88-22	.005	.05	6.	<1.	.04
23	RSM 88-23	.240	.30	4.	<1.	.06
24	RSM 88-24	.020	.10	8.	<1.	.06
25	BAR 88-1	.025	.35	8.	<1.	.18

Rathenke

Bonnwell

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

WLK-ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: BARNWELL						② County: San Bernardino	③ State or Province: California
						④ USGS Quad.: Crescent Peak	⑤ File or Gore No.
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Kingman	Township: 14N	Range: 16E	Section: 22	⑨ Examined by: T. Dalla Vista	⑩ Date: 1988
						⑪ Office: Tucson, SWED	⑫ Field Days: 1

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations: Shallow pits

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: None

㉔ Ore Minerals-Major: Cu in skarn contact with limestone Minor: Au?

㉕ Host Rocks-Major: Metamorphics Minor:

㉖ Age of Host Rocks: Precambrian

㉗ Nature of Exposures: About 30% outcrop. Altered PЄ sheared form at silicified zones along shears.

㉘ Alteration: SiO_2, Lim/Quartz

㉙ Total Extent:

㉚ Structure: Shear zones

㉛ Ore Occurrence: None

㉜ Age of Mineralization:

㉝ Conclusions & Recommendations: The metamorphics are weakly silicified and altered at and near shear zones with some degree of brecciation. No Au values (max. .025 ppm) were indicated. No further work is recommended.

(For additional space use extra sheets)

Form Revised-June 1980-LHC MVK-5193

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 518
April 6, 1988
RSM 88-1 TO BAR 88-6

ASARCO Incorporated
APR 8 1988
SW Exploration

ASARCO INCORPORATED
Attn: Mr. T. Dalla Vista
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 30 Rock Chip Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
1	RSM 88-1	.010	.40	4.	<1.	.02
2	RSM 88-2	.005	.85	4.	<1.	.02
3	RSM 88-3	<.005	.25	6.	<1.	.02
4	RSM 88-4	.010	.50	4.	<1.	<.01
5	RSM 88-5	.720	4.60	4.	<1.	.04
6	RSM 88-6	.280	.30	4.	<1.	.06
7	RSM 88-7	.035	.05	4.	<1.	.06
8	RSM 88-8	.010	.25	4.	<1.	.06
9	RSM 88-9	<.005	.25	2.	<1.	<.01
10	RSM 88-10	.010	.20	4.	<1.	.02
11	RSM 88-11	.010	.20	4.	<1.	.02
12	RSM 88-12	<.005	.10	4.	<1.	.02
13	RSM 88-13	<.005	.05	2.	<1.	.02
14	RSM 88-14	.005	.10	4.	<1.	.04
15	RSM 88-15	.020	.10	2.	<1.	<.01
16	RSM 88-16	<.005	.15	2.	<1.	.06
17	RSM 88-17	.005	.05	4.	<1.	.06
18	RSM 88-18	<.005	.05	2.	<1.	.02
19	RSM 88-19	.005	.10	<2.	<1.	.06
20	RSM 88-20	.010	.10	4.	<1.	.08
21	RSM 88-21	<.005	.35	4.	<1.	.02
22	RSM 88-22	.005	.05	6.	<1.	.04
23	RSM 88-23	.240	.30	4.	<1.	.06
24	RSM 88-24	.020	.10	8.	<1.	.06
25	BAR 88-1	.025	.35	8.	<1.	.18

Barnwell

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 518
April 6, 1988

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	BAR 88-2	.015	.75	18.	<1.	.16
27	BAR 88-3	.005	2.90	6.	<1.	.06
28	BAR 88-4	.025	2.10	44.	<1.	.24
29	BAR 88-5	.005	1.10	14.	<1.	.16
30	BAR 88-6	<.005	.20	10.	<1.	.42

Barnwell

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: HACKBERRY MOUNTAINS						② ~~Country~~ County: San Bernardino	③ State or Province: California
						④ USGS Quad.: Lanfiar Valley	⑤ File or Gore No.:
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Kingman	Township: 11N	Range: 17E	Section: 18	⑨ Examined by: T. Dalla Vista	⑩ Date: 1988
						⑪ Office: Tucson, SWED	⑫ Field Days: 2

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes -0-

Approx Total Footage _____

⑲ Excavations Declines shallow shafts.

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major Miocene Volcanics (Rhy) Minor _____

㉖ Age of Host Rocks Miocene

㉗ Nature of Exposures Hot spring related jasperoid in volcanics.

㉘ Alteration SiO_2, Argillic

㉙ Total Extent

㉚ Structure Minor shears and faults.

㉛ Ore Occurrence No ore.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations The area was field examined because of its similarity to the Castle Mountains' Viceroy property; however, no gold values were indicated.

(For additional space use extra sheets)

Form Revised-June 1980-JHC MVK-5193

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	GV88-26	.020	1.50	18.	<1.	.26
27	HBS88-1	.015	<.05	195.	26.	.28
28	HBS88-2	.035	.05	120.	24.	.46
29	HBS88-3	.035	.25	380.	85.	1.40
30	HBS88-4	.010	.15	120.	65.	.12
31	HBS88-5	.020	.15	440.	46.	.06
32	HBS88-6	.010	.15	195.	32.	.34
33	HBS88-7	.010	.05	450.	90.	.50
34	HBS88-8	.010	.15	610.	30.	.24
35	HBS88-9	.010	.10	285.	20.	.15
36	HBS88-10	.015	.25	390.	22.	.12
37	HBS88-11	.010	.20	255.	30.	.20
38	HBS88-12	.005	.05	65.	6.	.14
39	HBS88-13	.005	.15	55.	11.	.28
40	HM88-1	.010	.10	10.	<1.	.08
41	HM88-2	.005	.10	12.	1.	.07
42	DM88-1	.005	.20	2.	<1.	.02
43	DM88-2	.005	.25	4.	<1.	.04
44	DM88-3	.005	.20	4.	<1.	.04
45	DM88-4	.005	.10	6.	<1.	.02
46	DM88-5	.005	.25	6.	<1.	<.01
47	DM88-6	.005	.10	4.	<1.	<.01
48	DM88-7	.010	.20	4.	<1.	.02
49	DM88-8	.040	.25	4.	<1.	<.01
50	DM88-9	.500	7.70	8.	<1.	<.01

Blackberry mts.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: DEAD MOUNTAINS						② County: San Bernardino	③ State or Province: California
						④ USGS Quad.: Homer Mtn.	⑤ File or Gore No.
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by: T. Dalla Vista	⑩ Date: 1988
		Kingman	12N	20E	25	⑪ Office: Tucson - SWED	⑫ Field Days: 1

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations: Shafts, small pits

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: None

㉔ Ore Minerals-Major: None Minor: _____

㉕ Host Rocks-Major: Gneiss/shists Minor: _____

㉖ Age of Host Rocks: Precambrian

㉗ Nature of Exposures: Near pediment contact about 20% outcrop weakly weathered.

㉘ Alteration: FeOx

㉙ Total Extent: 600' x 1000'

㉚ Structure: Low angle fault

㉛ Ore Occurrence

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: The zone was initially examined and sampled because of a low angle fault, weak color anomaly and proximity to small Au prospects in quartz veins. The assays are too low in Au/Ag to suggest existence of a target.

(For additional space use extra sheets)

Form Revised June 1980 - J.H.C. MVK-5183

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 516
March 20, 1988

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	GV88-26	.020	1.50	18.	<1.	.26
27	HBS88-1	.015	<.05	195.	26.	.28
28	HBS88-2	.035	.05	120.	24.	.46
29	HBS88-3	.035	.25	380.	85.	1.40
30	HBS88-4	.010	.15	120.	65.	.12
31	HBS88-5	.020	.15	440.	46.	.06
32	HBS88-6	.010	.15	195.	32.	.34
33	HBS88-7	.010	.05	450.	90.	.50
34	HBS88-8	.010	.15	610.	30.	.24
35	HBS88-9	.010	.10	285.	20.	.15
36	HBS88-10	.015	.25	390.	22.	.12
37	HBS88-11	.010	.20	255.	30.	.20
38	HBS88-12	.005	.05	65.	6.	.14
39	HBS88-13	.005	.15	55.	11.	.28
40	HM88-1	.010	.10	10.	<1.	.08
41	HM88-2	.005	.10	12.	1.	.07
42	DM88-1	.005	.20	2.	<1.	.02
43	DM88-2	.005	.25	4.	<1.	.04
44	DM88-3	.005	.20	4.	<1.	.04
45	DM88-4	.005	.10	6.	<1.	.02
46	DM88-5	.005	.25	6.	<1.	<.01
47	DM88-6	.005	.10	4.	<1.	<.01
48	DM88-7	.010	.20	4.	<1.	.02
49	DM88-8	.040	.25	4.	<1.	<.01
50	DM88-9	.500	7.70	8.	<1.	<.01

DEAD HITS

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
51	DM88-10	.010	.90	12.	<1.	.02
52	DM88-11	.015	.25	4.	<1.	<.01
53	DM88-12	.010	<.05	2.	<1.	.02
54	DM88-13	.025	35.00	40.	3.	.36
55	DM88-14	.025	14.00	24.	3.	<.01
56	DM88-15	.260	12.00	28.	3.	.04
57	DM88-16	.030	1.30	8.	<1.	.04

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

William L. Lehmbeck
Manager

WLK-ERFILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② County	③ State or Province
Gold Valley Prospect	San Bernardino	California
	④ USGS Quad. Mid Hill 15'	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
		Kingman	12N	15E	17	T.Dalla Vista	1988
						⑪ Office: Tucson, SWED	⑫ Field Days: 3

Section II Sources of Information

Date Typed 4/29/88

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Au	unknown	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes -0-

Approx Total Footage _____

⑲ Excavations Adits, shafts open cuts.

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major Au Minor

㉕ Host Rocks-Major Gneiss/shist/diorite Minor hornblendite

㉖ Age of Host Rocks Precambrian

㉗ Nature of Exposures Oxidized outcrop, weakly weathered gneiss outcrop about 20%.

㉘ Alteration SiO_2, Seri, FeOx

㉙ Total Extent

㉚ Structure Quartz veinings and quartz breccia zones along shear/faults.

㉛ Ore Occurrence In quartz veins and stringers

㉜ Age of Mineralization

㉝ Conclusions & Recommendations Sporadic anomalous gold values in quartz structures, nevertheless the property should probably be tested (RDH) on the north end (under pediment) over projection of low angle quartz structures.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5103

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 516
March 20, 1988
GV88-1 TO DM88-16

ASARCO INCORPORATED
Attn: Mr. T. Dalla Vista
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
MAR 21 1988
SW Exploration

Analysis of 57 Rock Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
1	GV88-1	.050	7.80	24.	<1.	<.01
2	GV88-2	.012	.65	6.	<1.	.04
3	GV88-3	.050	4.20	6.	<1.	<.01
4	GV88-4	.260	8.50	8.	<1.	.02
5	GV88-5	.050	.45	4.	<1.	.02
6	GV88-6	.020	1.10	4.	<1.	<.01
7	GV88-7	.140	1.50	4.	<1.	.06
8	GV88-8	.030	2.80	12.	<1.	.04
9	GV88-9	.020	.60	6.	<1.	.06
10	GV88-10	.030	1.70	18.	<1.	.04
11	GV88-11	.950	25.00	10.	<1.	.04
12	GV88-12	.040	.60	2.	<1.	<.01
13	GV88-13	.020	.50	6.	<1.	<.01
14	GV88-14	.030	.55	6.	<1.	<.01
15	GV88-15	.035	.55	4.	<1.	<.01
16	GV88-16	.025	.50	6.	<1.	<.01
17	GV88-17	.040	5.00	6.	<1.	.08
18	GV88-18	.030	.30	4.	<1.	.04
19	GV88-19	1.600	4.10	16.	<1.	.02
20	GV88-20	.620	2.70	16.	<1.	.02
21	GV88-21	.030	.80	4.	<1.	.02
22	GV88-22	.025	.85	4.	<1.	.04
23	GV88-23	.010	.40	4.	<1.	<.01
24	GV88-24	.005	1.20	4.	<1.	.04
25	GV88-25	.010	1.30	2.	<1.	.04

Gold Valley

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

Gold Valley

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	~~GV88-26~~	.020	1.50	18.	<1.	.26
27	HBS88-1	.015	<.05	195.	26.	.28
28	HBS88-2	.035	.05	120.	24.	.46
29	HBS88-3	.035	.25	380.	85.	1.40
30	HBS88-4	.010	.15	120.	65.	.12
31	HBS88-5	.020	.15	440.	46.	.06
32	HBS88-6	.010	.15	195.	32.	.34
33	HBS88-7	.010	.05	450.	90.	.50
34	HBS88-8	.010	.15	610.	30.	.24
35	HBS88-9	.010	.10	285.	20.	.15
36	HBS88-10	.015	.25	390.	22.	.12
37	HBS88-11	.010	.20	255.	30.	.20
38	HBS88-12	.005	.05	65.	6.	.14
39	HBS88-13	.005	.15	55.	11.	.28
40	HM88-1	.010	.10	10.	<1.	.08
41	HM88-2	.005	.10	12.	1.	.07
42	DM88-1	.005	.20	2.	<1.	.02
43	DM88-2	.005	.25	4.	<1.	.04
44	DM88-3	.005	.20	4.	<1.	.04
45	DM88-4	.005	.10	6.	<1.	.02
46	DM88-5	.005	.25	6.	<1.	<.01
47	DM88-6	.005	.10	4.	<1.	<.01
48	DM88-7	.010	.20	4.	<1.	.02
49	DM88-8	.040	.25	4.	<1.	<.01
50	DM88-9	.500	7.70	8.	<1.	<.01

DEAD HITS

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

Gold Valley

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
26	DC88-10	<.005	.35	6.	<1.	.14
27	DC88-11	<.005	.05	10.	<1.	.20
28	DC88-12	<.005	.25	22.	<1.	.08
29	DC88-13	<.005	2.30	12.	<1.	.42
30	DC88-14	<.005	1.00	28.	<1.	.30
	GV-25	.010	1.30	2.	21	.04
31	DC88-15	.010	3.60	34.	3.	4.20
32	GV88-27	.015	4.30	6.	2.	.02
33	GV88-28	.005	.55	4.	3.	<.01
34	GV88-29	.015	3.60	22.	12.	<.01
35	GV88-30	.090	3.80	<2.	1.	<.01
36	GV88-31	7.800	90.00	26.	4.	<.01
37	GV88-32	6.000	68.00	6.	2.	<.01
38	GV88-33	.050	1.60	30.	1.	.18
39	GV88-34	.055	.45	34.	1.	.04
40	GV88-35	.490	3.90	20.	2.	.03
41	GV88-36	.760	.10	38.	4.	.03
42	GV88-37	.080	2.40	26.	6.	.04
43	GV88-38	.460	20.00	2.	3.	.03
44	GV88-39	.055	4.70	8.	3.	.04
45	GV88-40	.010	.45	6.	<1.	.03
46	GV88-41	<.005	2.30	12.	3.	.03
47	GS88-1	.005	.80	14.	24.	.56
48	GS88-2	.015	24.00	65.	65.	>5.00**
49	GS88-3	.035	32.00	700.	340.	>5.00**
50	GS88-4	.020	1.10	90.	60.	.42

WLK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Kramer Hills Carbonate Beds	USA	Calif.
	④ USGS Quad. Hawes	⑤ File or Gore No. San Bernardino Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°57'30"	117°29'	San Bernardino	10N	6W	SW/4 14	H.G. Kreis	2-6-88
						⑪ Office SWED - Tucson	⑫ Field Days ½

Section II Sources of Information

Date Typed 3/30/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Briscoe, J.A.,	12-13-67	Kramer Hills	Asarco Files	

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No Action

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Check for Au, Ag

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major Limestone Minor _____

㉖ Age of Host Rocks Miocene

㉗ Nature of Exposures Elongate, narrow outcrop of limestone in area of thin cover.

㉘ Alteration Variable silicification of limestone

㉙ Total Extent >1000 on strike

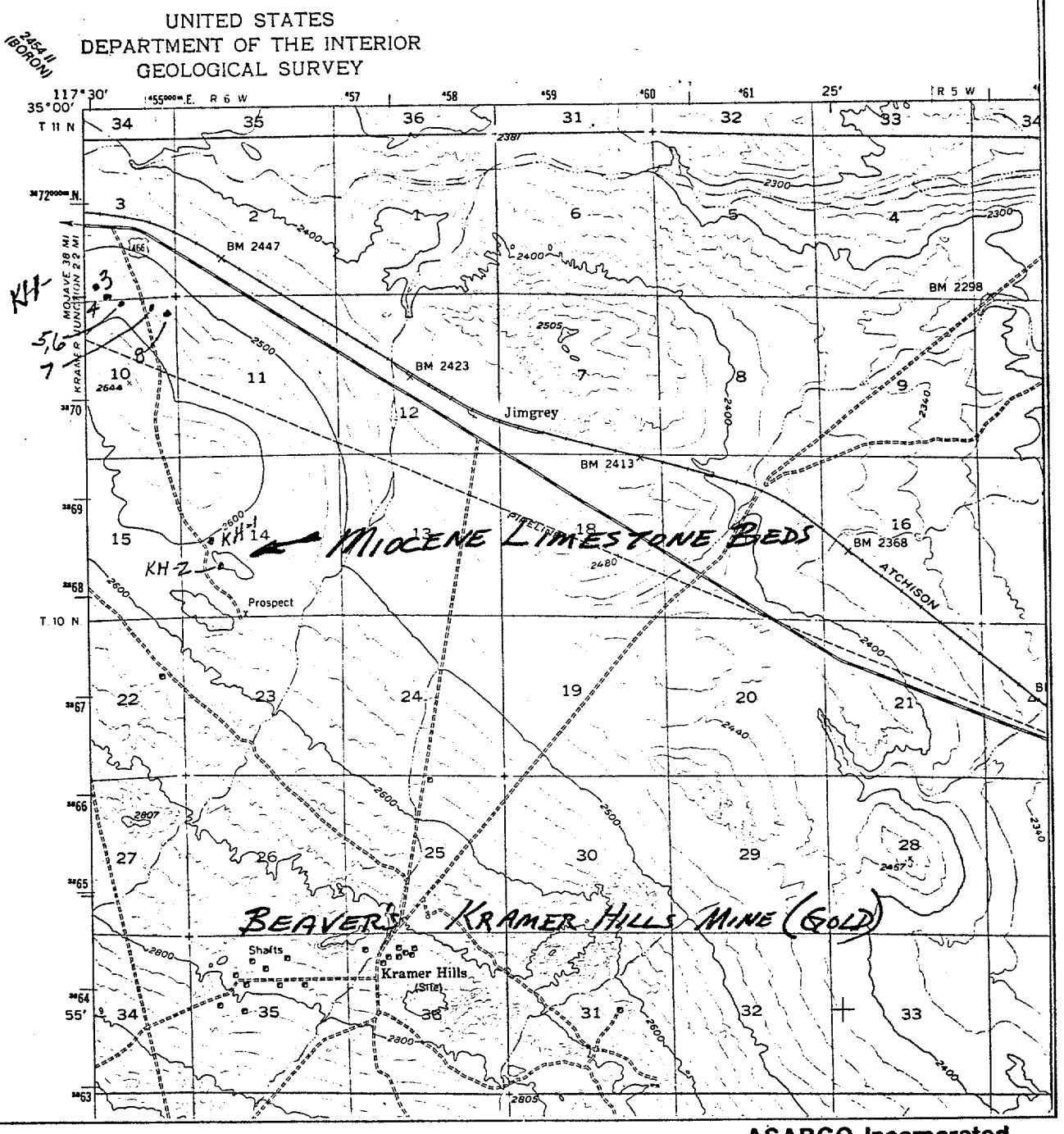
㉚ Structure Northerly striking carbonate beds with moderate to steep westerly dip.

㉛ Ore Occurrence Miocene hydrothermal type silicification.

㉜ Age of Mineralization Miocene (?)

㉝ Conclusions & Recommendations These limestone beds and silicification are similar to the Miocene carbonate beds with silicification in the Barstow-Ludlow areas (see H.G.K.'s Cady prospect report). Sample KH-1 with 0.005 ppm Au did not duplicate Briscoe's 0.14 ppm Au in his sample KB-3. This area is of no further interest at this time.

(For additional space use extra sheets)



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 10N **Rng.:** 6W **Sec.:** 14

Prospect Name: KRAMER HILLS CARBONATE BEDS

County: SAN BERNADINO CA

District: KRAMER HILLS

SCALE: 1" = 1 MILE

map no. HGK **date** 3/1988

HGK
2-1988

KRAMER HILLS
T10N, R6W

SW/4 [illegible]-14 KH-1 Lms, grey, 0 to locally 20% silicification, outcrop & subcrop
See Watson-Briscoe sample results from this area (outcrop?).

-2 Lms, grey, mod. silicified, 10% dark chert like lenses, mod.-stp W'ly dip, 20' sample across strat'ly.

REMARK on KH-1&2 samples: Same lms-hydrothermal environment as at Cady Prospect (E. of Barstow)

SEC 1[illegible] KH-3 Granite subcrop, 1% goeth on fract.
"High graded" goeth rich rock (includes 1/8"-1" thk breccia w/ goe. matrix that is ≤1% of rock in area)

-4 Geology & sampling same as KH-3; trace qtz vlts

-5 Granite, brecciated, ≈ 4% goeth & siliceous matrix. 50' from prospect pit (KH-6)

-6 Qtz-goe.(1-8%)-trace CuOx vein, ≈1' thk, taken from dump of a filled in prospect pit.

-7 Granite, 2% siliceous goeth filled fractures (sheeted). High graded sample to >10% silic-goeth.

-8 Granite bxa, 2-5% silic-goeth (red & brown) matrix.

REMARK KH-3 to KH-8
Widely spaced outcrops & subcrops of granite
Commonly 1/2-1% goeth in fractures which appears to have originated from biot & mag.
Roughly 1% of area consists of siliceous goethite matrix in brecciated or "sheeted" granite; commonly 1/4" to 1' wide. Breccias similar to those at Cady.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
~~21~~	~~HYD-11~~	~~.011~~	~~.05~~
~~22~~	~~HYD-12~~	~~.006~~	~~.05~~
~~23~~	~~BLY-1~~	~~.004~~	~~.05~~
24	KH-1	.005	.05
25	KH-2	.009	.05
~~26~~	~~KH-3~~	~~.002~~	~~.05~~
~~27~~	~~KH-4~~	~~.003~~	~~<.05~~
~~28~~	~~KH-5~~	~~.003~~	~~<.05~~
~~29~~	~~KH-6~~	~~.180~~	~~48.00~~
~~30~~	~~KH-7~~	~~.006~~	~~.20~~
~~31~~	~~KH-8~~	~~.009~~	~~.35~~

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NO.	As (ppm)	Sb (ppm)	Mo (ppm)	Hg (ppm)	Cu (ppm)
15	HYD-5	14.	<1.	4.	.04	
16	HYD-6	8.	<1.	<2.	.02	
17	HYD-7	14.	<1.	<2.	<.01	
18	HYD-8	32.	<1.	4.	.02	
19	HYD-9	22.	4.	<2.	.49	
20	HYD-10	65.	7.	<2.	.16	
21	HYD-11	55.	6.	<2.	.07	
22	HYD-12	24.	<1.	4.	<.01	
23	BLY-1			<2.		18
24	KH-1	28.	<1.	<2.		
25	KH-2	42.	<1.	2.		

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. James D. Sell

WLK - ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: KRAMER HILLS GRANITE						② Country: USA	③ State or Province: California	
						④ USGS Quad.: Hawes	⑤ File or Core No.: San Bernardino Co.	
⑥ Latitude: 34°59'	⑦ Longitude: 117°30'	⑧ AMS Sheet: San Bernardino	Township: 10N	Range: 6W	Section: 3,10	⑨ Examined by: H.G.Kreis	⑩ Date: 2-6-88	
						⑪ Office: SWED Tucson	⑫ Field Days: ½	

Section II Sources of Information

Date Typed 3/28/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Briscoe, J.A.,	12-13-67	Kramer Hills	Asarco Files	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No action

⑮
- [ ] Past Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None

Approx Total Footage: _____

⑲ Excavations: Couple prospect pits

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Checked for Au & Ag

㉔ Ore Minerals-Major: _____ Minor: _____

㉕ Host Rocks-Major: Granite Minor: _____

㉖ Age of Host Rocks: Pre Miocene

㉗ Nature of Exposures: Widely spaced, small outcrops and subcrops in area of extensive thin pediment cover.

㉘ Alteration: Goethite in fractures and matrix of breccia zones.

㉙ Total Extent: >1000' by >600' (not determinable because of cover.)

㉚ Structure: Narrow breccia zones and fractures control goethite

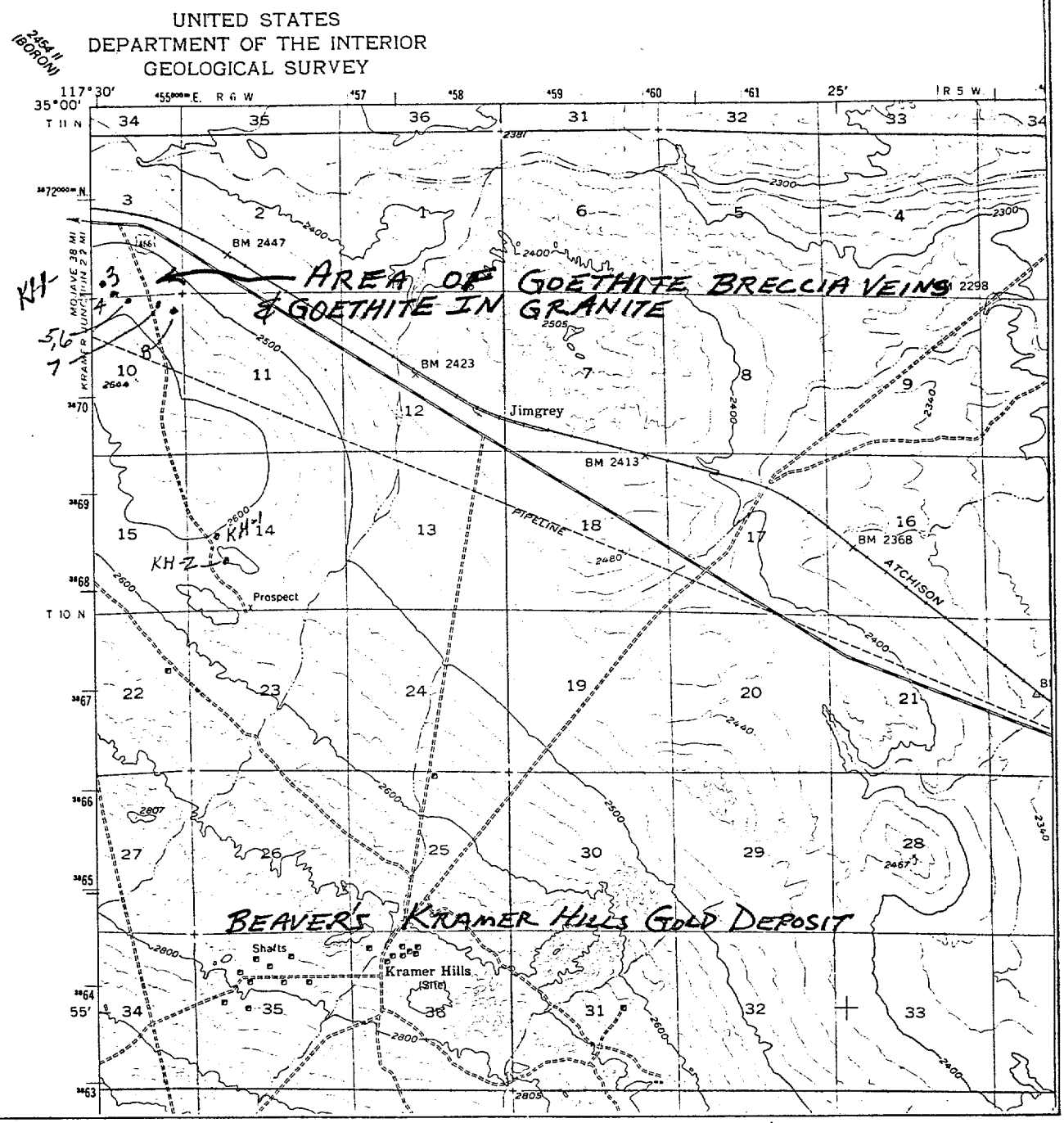
㉛ Ore Occurrence: Approx. 1 to 5% fracture & breccia goethite, somewhat siliceous. Some goethite appears to be from break down of magnetite & mafic minerals & some may be after ankerite.

㉜ Age of Mineralization: Miocene (?)

㉝ Conclusions & Recommendations: Excluding the quartz vein (KH-6) the gold and silver values are ≤0.009 ppm and ≤0.35 ppm, respectively. This mineralization is reminiscent of the FeOx breccias at the Cady prospect near Barstow. Nothing here is of interest at this time.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193



ASARCO Incorporated

1988 GOLD PROGRAM

Twsp.: 10N **Rng.:** 6W **Sec.:** 3, 10

Prospect Name: KRAMER HILLS GRANITE

State: CALIF.

County: SAN BERNADINO

District: KRAMER HILLS

SCALE: 1" = 1 mile

map no. H.G.K. **date** 3/1988

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 513
February 22, 1988

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)	
~~21~~	~~HYD-11~~	~~.011~~	~~.05~~	
~~22~~	~~HYD-12~~	~~.006~~	~~.05~~	
~~23~~	~~BLY-1~~	~~.004~~	~~.05~~	
~~24~~	~~KH-1~~	~~.005~~	~~.05~~	
~~25~~	~~KH-2~~	~~.009~~	~~.05~~	
26	KH-3	.002	.05	
27	KH-4	.003	<.05	
28	KH-5	.003	<.05	
29	KH-6	.180	48.00	QTZ VEIN
30	KH-7	.006	.20	
31	KH-8	.009	.35	

HGK.
2-1988

KRAMER HILLS
T10N, R6W

SW/4 Sec 14 KH-1 Lms, grey, 0 to locally 20% silicification, outcrop & subcrop. See Watson-Briscoe sample results from this area (outcrop?).

-2 Lms, grey, mod. silicified, 10% dark chert like lenses, mod. stp W'ly dip, 20' sample across strata.

REMARK ON KH-1 & 2 samples: Some lms-hydrothermal environment as at Cady Prospect (E. of Barstow)

Sec 10 T3 KH-3 Granite subcrop, 1% goeth on fract. "High graded" goeth rich rock (includes 1/8"-1" thk breccia w/ goe. matrix that is ≤1% of rock in area)

-4 Geology & sampling same as KH-3, trace qtz vlts

-5 Granite, brecciated, ≈ 4% goeth & siliceous matrix. 50' from prospect pit (KH-6)

-6 Qtz-goe.(1-8%)-trace CuOx vein, ≈ 1' thk, taken from dump of a filled in prospect pit.

-7 Granite, 2% siliceous goeth filled fractures (sheeted). High graded sample to >10% silic-goeth.

-8 Granite bxa, 2-5% silic-goeth (red & brown) matrix.

REMARK KH-3 to KH-8
Widely spaced outcrops & subcrops of granite
Commonly 1/2-1% goeth in fractures which appears to have originated from biot & mag.
Roughly 1% of area consists of siliceous goethite matrix in brecciated or "sheeted" granite; commonly 1/4" to 1' wide. Breccias similar to those at Cady.

From the desk of:

3-28-88

H. G. KREIS

W.L.K.

Gold Bullion

Bill, if you would like to see my maps or know more about the Gold Bullion, let me know

H.G.K.

ASARCO

Southwestern Exploration Division

Oro Grande Dist
Intermediate
ER-File

March 28, 1988

To: J.D. Sell

From: H.G. Kreis

Gold Bullion Prospect
San Bernardino County, CA

Attached is an ERS on the Gold Bullion Prospect at Victorville, California. The ERS concludes with a recommendation to acquire and drill as we discussed last week.

H. G. Kreis

H. G. Kreis

HGK:mek
Att.

cc: W.L. Kurtz

P.S. The maps to the ERS are being drafted and will be issued as soon as they are available. Since you have had a rough draft copy of the field mapping since March 11th, this should be no problem for the time being.

WLK- ER- File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [X] Action Now

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Gold Bullion Prospect	USA	Calif.
	④ USGS Quad. Helendale	⑤ File or Core No. San Bernardino Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°37'40"	117°17'	San Bernardino	6N	4W	N/2 10	H.G. Kreis	3-1988
						⑪ Office SWED-Tucson	⑫ Field Days 4

Section II Sources of Information

Date Typed 3/28/88

⑬ References

Author	Date	Title	Publications	Vol. No.
Bowen, & VerPlanck, 1965, Oro Grande Series; CDM&G				
Kreis, H.G., 3-25-1985, Mohave Winter Program; report, Asarco files				
Kreis, H.G., 8-31-1983, Atwood Clay Quarry Area; ERS, Asarco files				

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Past Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ]
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None
Approx Total Footage

⑲ Excavations Several shallow shafts, adit, drift, pits

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au-Ag

㉔ Ore Minerals-Major Unidentified Minor

㉕ Host Rocks-Major Latite outcrops; Qtz.Monz.at depth Minor Qtz.Monz.Porp.

㉖ Age of Host Rocks Triassic(?); Cretaceous Cretaceous

㉗ Nature of Exposures 5 to 30% abundance of scattered outcrops separated by thin talus on gentle slopes. Sufficient outcrops to evaluate surface.

㉘ Alteration Bleaching and weak sericitization in and along veins

㉙ Total Extent 500' by 800' area of widely spaced veins.

㉚ Structure Prominent N70°W,50°N vein structure in Qmp and N15°W to N40°E, 70-80°W set of veins in latite (see attached map).

㉛ Ore Occurrence In general all veins are fault-fracture controlled, have thickness of 1' 5o 5', 2%-6% FeOx after trace to 5% former pyrite, discontinuous quartz vein(s) (¼"-1'thick), and local minor (cont.)

㉜ Age of Mineralization Cretaceous (?)

㉝ Conclusions & Recommendations Although the veins themselves are of no economic interest, there may be leakage from a bulk tonnage gold and/or silver deposit in favorable host rocks beneath the unfavorable latite as shown in the attached cross section. Favorable host rocks are hypothesized to exist between the latite at the surface and the quartz monzonite stock which underlies the area immediately below an estimated depth of 200' to 1000'. The favorable host rocks at depth are hypothesized to exist for the following reasons: (cont.)

(For additional space use extra sheets)

31. Ore Occurrence (Cont.)

CuOx-MnOx. The veins carry anomalous Au-Ag values with 0.04 to 7.00 ppm Au and 1 to 50 ppm Ag. The gold to silver ratio is about 1 Au: 5-100 Ag. The gold and silver values in outcrop are confined to the veins and do not disseminate into the wall rocks.

33. Conclusions and Recommendations (Cont.)

Favorable Environment	Justification
- Favorable volcanic unit in Sidewinder Volcanic Series of which the latite is a part.	- See above ERS describing very strong sericite-clay-alunite-pyrite over an area of 1000' by 2000' in a tuffaceous unit of Sidewinder Volcanics.
- Favorable carbonate bed(s) in Paleozoic sediments.	- There are carbonate beds to the NW, SE, and So. of the Gold Bullion, and carbonate beds may exist beneath the latite at the Gold Bullion. Quartz sinter exists ½ mile to SE.
- Skarn alteration - mineralization with possible Au, Ag, and/or Cu may exist in the Sidewinder Volcanics or the Paleozoic sedimentary rocks just above the basement quartz monzonite.	- Skarn and hornfels are scattered in the outcropping sediments and some fracture controlled garnet and epidote were noted in the Sidewinder Volcanics.

The only way to determine if a favorable host rock exists at depth is to drill. Asarco should stake the open ground in Section 10 and at least the south half of Section 3 and option any existing claims in Section 10 and the south half of Section 3. Two 500' deep drill holes will be sufficient to test the near surface potential for bulk tonnage Au-Ag mineralization.

GOLD BULLION PROSPECT

H. G. KREIS
3-1988

EXPLANATION
"Bleached" includes weak to locally mod. sericitization in stronger veins.
*Dp = latite

		ppm Au/Ag ppm
K-88-1	Dp, ½% goe on fract., bleached dump sample	.47/.75
-2	1"-2" thk qtz vn w/ FeOx stain. High grade pile on dump	.06/5.80
-3	Dp, ½% goe on fract, bleached; dump sample	.17/2.00
-4	Dp, ⅛% CuOx, ¼% goe. on fract, bleached; dump sample	.07/9.60
-5	Qmp, 2% FeOx on fract, Tr MnOx, chloritized bio., couple 1" qtz vns, dump sample	.08/3.40
-6	Dp, ¼-1% FeOx, bleached, outcrop sample.	6.40/50.00
-7	Qtz vein, 2"-6", stg. FeOx, dump sample	7.00/46.00
-8	Dp, ½% FeOx, bleached, dump sample	.09/2.70
-9	Dp, ¼-1% FeOx on fract., loc. traces CuOx; area of anomalously FeOx stained, ragged outcrops	.05/.95
-10	Same geology as K-88-9	.03/.30
-11	Qmp, 2% FeOx on fract, ≤1% qtz vnlts, bleached and sericitized (some fresh bio)	.47/15.0
-12	Dp, vein structure (cut 2' across width of 2'), 4% G-H, 2% qtz, dump sample, bleached, sili.	.93/25.00
-13	Qmp, 6' wide FeOx (2%), chloritized, ½% qtz veining, "shear zone", wall of cut	
-14	Dp, outcrop, ½% FeOx, Tr CuOx, some bleached, lapilli alt. text. (felsic?)	
-15	Qmp, wall of cut, 3% FeOx, bleached, (qtz-felsic above cut), chor. alt. of bio.	
-16	Dp, outcrop, ½% FeOx, bleached	
-17	Dp, 20% of trenched, spotty outcrops, drk. gray, <5% bleaching & wkt field on widely spaced fract.	
-18	Dp, outcrop, gray, ¼-½% FeOx on fract.	
-19	Repeat of sample K-88-6	
-20	Dp, dump sample, bleached, 2% FeOx, 2% qtz vein in sample. Very doubtful this runs 6.4 ppm Au & 1½ oz Ag as reported	
-21	Dp, outcrop, gray to drk gray to locally bleached (in veins) ¼-1% FeOx	
-22	Dp, 2' thk vein, 3% F.T.S, 2% FeOx (some in dig.)	
-23	Qmp, bleached, & wk. alt. of bio., 1% FeOx, 7' horiz. sample across 1' thk qtz vein.	
-24	Dp, wkly bleached, ½-2% FeOx after ≈1% F.T.S. Taken at contact w/ Qmp. 5' horiz. sample. Apparent flow structure, E-W, 45°N. Tuffaceous appearance	
-25	Qmp, chloritized bio., wk clay-ser (weathered), 2% FeOx, 1% F.T.S, 5' horiz, N-S, in cut. ≤1% MnOx	
-26	Dp, outcrop, gray color, ½ FeOx.	
-27	Dp, outcrop, 1' vein of bleaching & 2% FeOx after 4% F.T.S.	
-28	" " " " " " " " " " " "	
-29	Dp, outcrop, 25' north with 2' stg FeOx & bleaching at contact w/ Qmp, otherwise gray w/ ½% FeOx.	

12"x7" bag.
"
"
"
"
"
"

See TAJ-519 for Au, Ag

#

K-88-30 Dump sample, "ore-pile", wht qtz vein w/ FeO_x stain and pyritized (oxid) gmp.

12"x7" bag -31 Dp, portal of adit, 5' horizontal, bleached, 2% FeO_x sheared and faulted.

" -32 Dp, outcrop, ← ½% FeO_x, gray

-33 Dp, outcrop, bleached, 2% FeO_x, Tr-2% F.T.S., 1'-8' wide vein

-34 Dp, " , " , " , " " , 1'-2' " "

-35 Dp, " , " , " , " " , 2'x3' area & 1' vn

-36 Dp, " , " , " , " " , 2' wide vein

-37 Dp, " , " , " , " " , several ≤2' wide veins

-38 Dp, " , " , " , " " , couple 2'x3' patches

-39 Dp, " pit, " , " , " " , ≈6 (-15') wide vein

-40 Dp, " , " , " , " " , same vein as #39 " " "

-41 Dp, " , " , " , " " , 1'-2' wide

-42 Dp, " , " , " , " " , " "

-43 Dp, " , " , " , " " , " "

-44 Dp, " , " , " , " " , " "

-45 Dp, " , ½% FeO_x, 1% CuO_x, ± E-W, ≈2' wide, vein like

-46 Dp, " , bleached, 2% FeO_x, Tr-2% F.T.S., ½% qtz (5% FTS in sample)

-47 Dp, pit, dump, " & c.s., " " , Tr-2% FTS, ≈6" vein (F.H.)

Location Notice placed on Delta #5, 12-18-79, surveyed claim
Ralph Prentin, Southwestern Portland Cement Co, 20 acres
3055 Wilshire Blvd, L.A. Cal 90010 W/2 SW/4 NE/4 Sec 10

-48 Dp, small "spotty" outcrops, bleached, 4% FeO_x, Tr-2% FTS, ±10' wide vein

-49 Dp, outcrop, ½% FeO_x & ½% CuO_x, ≈6' wide

-50 Dp, " (2x4) 3% FeO_x, 3% F.T.S, discont. 2' wide vn.

-51 Dp, pit, 3% [illegible], 1% FeO_x, no obvious vein., CuO_x & FeO_x on fract

#

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 513
February 22, 1988
K-88-1 TO KH-8

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated
FEB 25 1988
SW Exploration

Analysis of 31 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
1	K-88-1	.470	.75
2	K-88-2	.065	5.80
3	K-88-3	.170	2.00
4	K-88-4	.075	9.60
5	K-88-5	.085	3.40
6	K-88-6*	6.400*	50.00
7	K-88-7	7.000	46.00
8	K-88-8	.090	2.70
9	K-88-9	.055	.95
10	K-88-10	.030	.30
11	K-88-11	.470	15.00
12	K-88-12	.930	25.00
~~13~~	~~HYD-1~~	~~.026~~	~~.45~~
~~14~~	~~HYD-2~~	~~.012~~	~~.15~~
~~15~~	~~HYD-5~~	~~.006~~	~~.05~~
~~16~~	~~HYD-6~~	~~.004~~	~~.05~~
~~17~~	~~HYD-7~~	~~.004~~	~~.05~~
~~18~~	~~HYD-8~~	~~.009~~	~~.65~~
~~19~~	~~HYD-9~~	~~.006~~	~~6.50~~
~~20~~	~~HYD-10~~	~~.006~~	~~.50~~

*I suspect Skyline got sample K-88-6 mixed up with one of the vein samples. See recheck sample K-88-19 and adjoining samples K-88-18 and K-88-21.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 519
March 24, 1988
K-88-13 TO K-88-51

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

Analysis of 39 Rock Chip Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	FIRE ASSAY Ag* (ppm)
1	K-88-13	.21	14.0
2	K-88-14	.04	1.4
3	K-88-15	.08	2.5
4	K-88-16	.02	<.2
5	K-88-17	.01	<.2
6	K-88-18	.01	<.2
7	K-88-19	.07	.3
8	K-88-20	.04	1.2
9	K-88-21	.03	.8
10	K-88-22	.20	7.4
11	K-88-23	.19	3.5
12	K-88-24	.22	1.6
13	K-88-25	.08	.9
14	K-88-26	.02	<.2
15	K-88-27	.39	4.5
16	K-88-28	.20	.6
17	K-88-29	.03	3.2
18	K-88-30	.33	1.9
19	K-88-31	.20	.3
20	K-88-32	.01	.2
21	K-88-33	.69	3.7
22	K-88-34	.39	2.8
23	K-88-35	.28	5.4
24	K-88-36	.80	7.2
25	K-88-37	1.30	7.0

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 519
March 24, 1988

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag* (ppm)
26	K-88-38	.10	13.0
27	K-88-39	.08	.9
28	K-88-40	.20	17.0
29	K-88-41	.56	2.9
30	K-88-42	1.00	23.0
31	K-88-43	.06	1.7
32	K-88-44	.08	.5
33	K-88-45	.10	19.0
34	K-88-46	.03	9.5
35	K-88-47	.23	37.0
36	K-88-48	.13	12.0
37	K-88-49	.06	5.1
38	K-88-50	.78	5.5
39	K-88-51	.04	8.5

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: Mr. James D. Sell

WLK- ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: GOLD PRINCE MINE	Queenstake Resources				② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Dos Cabezas 7.5'	⑤ File or Gore No.	
⑥ Latitude: 32°11'10"	⑦ Longitude: 109°34'11"	⑧ AMS Sheet: Silver City	Township: 14S	Range: 27E	Section: 21,22	⑨ Examined by: M.Miller	⑩ Date: 11-18-87
						⑪ Office: SWED Tucson	⑫ Field Days: 3

Section II Sources of Information

Date Typed 12/10/87

⑬ References

Author	Date	Title	Publications	Vol. No.
S.P.Ogryzlo	5/11/50	Shanklin Properties	Asarco Co. Report	
Drewes, Harald	1985	Geol.Map & Struc. Sec. of Dos Cab.Q.	USGS Maps I-1570	
Drewes, et al	1986	Min.Res. of the Dos Cabezas WSA	USGS Bulletin 1703D	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [X] Producer ?
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons (est.)	Grade (est.)
Au	100,000	.5

⑰ Reserves [ ] Measured [X] Estimated Geologic

Commodity	Tons	Grade
Au	250,000	.4 opt

⑱ Num. Drill Holes ? Approx Total Footage ?

⑲ Excavations Numerous Adits, Shafts & p.pits

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au, Ag

㉔ Ore Minerals-Major: Gold, Ag — Minor: Pb

㉕ Host Rocks-Major: Cretaceous SS & Shales — Minor: Permian. Ls ??

㉖ Age of Host Rocks: Cretaceous — Permian.

㉗ Nature of Exposures: Bold outcrop on Hillsides, exposured in numerous adits and shafts ≈15% outcrop.

㉘ Alteration: None seen.

㉙ Total Extent

㉚ Structure: Qz Veins @ Gold Prince Mine → 6'TK. Var. developed H.W. & F.W. contacts. Poss. Sigmoid Loop Structures.

㉛ Ore Occurrence: Assoc. with Qz veins & shear structures in Qz veins. Au poss.assoc. with Pbs - veins seem to occur @ contact between SS & shales with major development in S.S.

㉜ Age of Mineralization: Post Cretaceous

㉝ Conclusions & Recommendations: Gold Prince Area currently controlled by Queenstake Resources, Vancouver. Plans are to drill below workings and increase reserves. Of the 250,000T of geologic reserves ≈ 25,000T are proven + prob. The area holds potential for ≈ 250-500,000T @ .3-.4 opt within the area controlled by Queenstake ≈ 3 miles of strike length. Recommend that Asarco keep watch on area for JV poss. or if Queenstake pulls out. The Gold Prince Mine was operated by P.D. for smelter flux for Douglas until last year (1986).

(For additional space use extra sheets)

DOS CABEZAS MOUNTAINS
Cochise County, AZ
Gold Prince Mining Area

DC-1 Leroy Mine Adit - Sample taken at adit mouth. 3' quartz vein, host rock granodiorite quartz vein has biotite inclusions, some minor Fe staining . N60°E, 60°NW.

DC-2 Wall rock adjacent to vein. No obvious alteration small quartz vein in intrusive. Possible stockwork-extreme jointing present in intrusive.

DC-3 Dump above where DC 1 & 2 were taken. Mostly granodiorite, but some quartz vein material, ~5% diss. pyrite in quartz.

DC-3A AA but quartz vein material only, yellowish stain to quartz vein.

DC-4 Dump at Mascot Mine - 1 adit, 1 caved shaft, abundant Cu oxides on dump - possible Pb.

DC-5 Quartz vein or felsic dike at main Mascot Mine, Consolidated Tunnel. Cu oxides, very heavy fracturing vein/dike ~ 6' thick, N35°W, vertical dip.

DC-6 Possible quartz vein stockwork in S.S. & shale sequence. Previous stoping on structure ±100' on dip, strike length about the same quartz veins in stockwork --1/2" loc 1" Tk. Sample taken on F.W. side of structure in silic S.S. & SH.

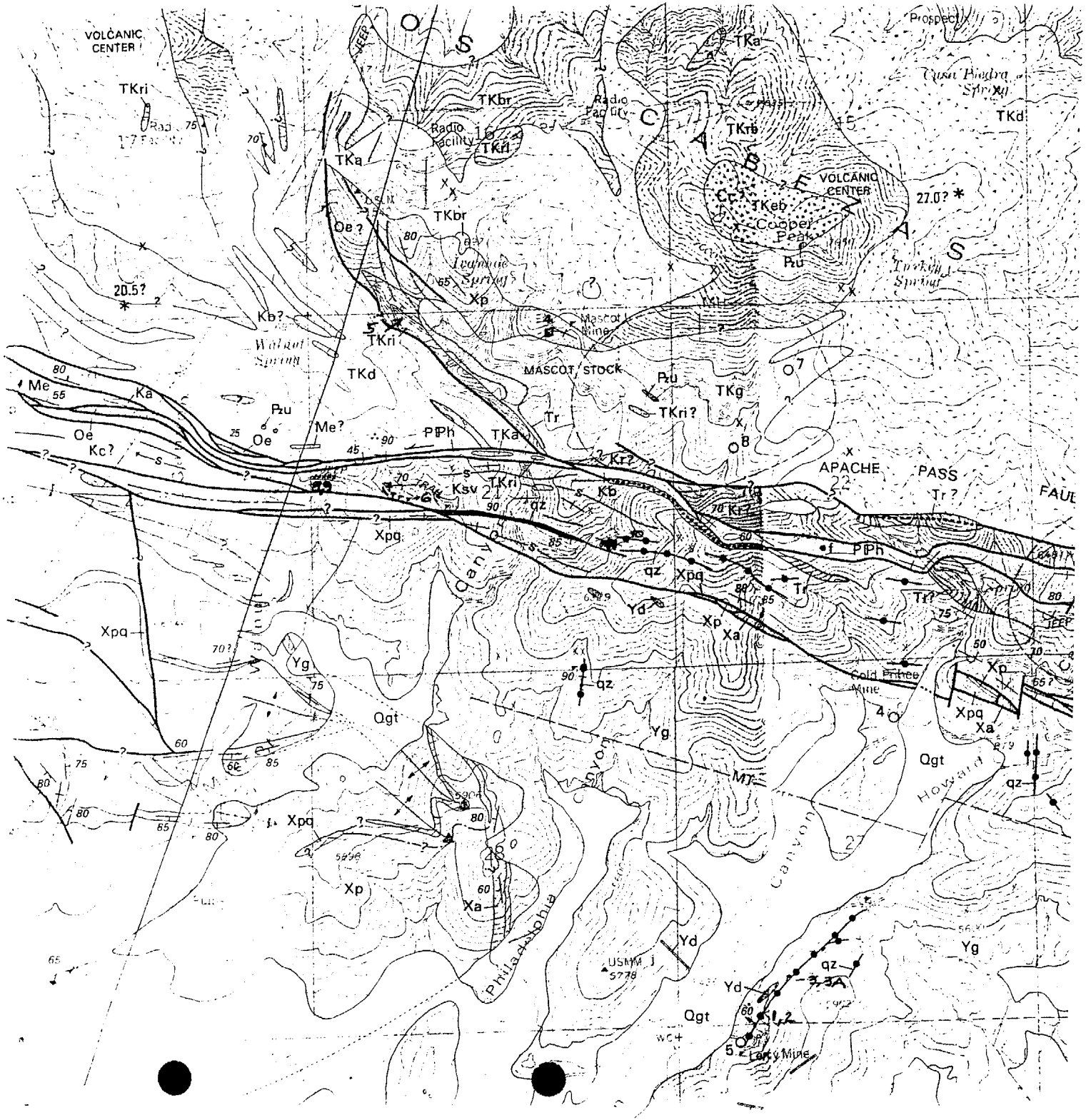
DC-7 X-section through SS/SH sequence. Sample represents ~20' of section SS at H.W. appears to have quartz vein stockwork. Shales heavily sheared. Zone is on strike from DC-6.

DC-8 S.S. Tn/M bedded possible quartz vein stockwork dies at SS/SH contact 25'--E. Some structure evident. Variable strikes and dips.

DC-9 AA but shales below SS; quartz veining continues but becomes interbedded instead of X-cutting. Some limonite in quartz. Rep ~ 10' of section.

DC-10 Dump at Gold Ridge Mine. All black shale from adit driven to intersect vein.

DC-11 Outcrop of S.S. - Sed. breccia/congl.? at Bs of S.S. Well fractured and jointed. Small fault structures perpendicular to bedding usually with quartz veining 50' of outcrop sampled.


VOLCANIC CENTER
TKri
TKbr
Radio Facility
TKa
TKd
TKrb
VOLCANIC CENTER
27.0?
TKeb
Cooper Peak
Pzu
Oe?
20.5?
Kb?
Walnut Spring
Mascot Mine
MASCOT STOCK
TKg
TKri?
Me
Ka
Oe
Kc?
Me?
PPh
Tr
Kr?
APACHE
PASS
Tr?
Ksv
qz
Kb
Xpq
Yd
Xp
Xa
Yg
Qgt
Cold Prince Mine
Mt
Howard
Canyon
Philadelphia
USMM 5778
Lucky Mine
3,3A
1,2

SKYLINE LABS, INC.
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(602) 622-4836

ASARCO Incorporated
JAN 11 1988
SW Exploration

REPORT OF ANALYSIS

JOB NO. TAJ 510
January 7, 1988
PROJECT NO.: DC
DC-1 TO 3A
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. Mark Miller
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 12 Rock Chip Samples

Dos Cabezas

ITEM	SAMPLE NO.	FIRE ASSAY Au* (ppm)	Ag (ppm)	As (ppm)	Hg (ppm)	Sb (ppm)
1	DC-1	2.40	2.80	8.	.24	1.
2	DC-2	1.10	.40	8.	.05	1.
3	DC-3	1.70	15.00	42.	.05	1.
4	DC-4	.10	6.40	18.	.04	1.
5	DC-5	.02	6.80	8.	.06	1.
6	DC-6	.03	.80	14.	.04	1.
7	DC-7	.06	.40	20.	.03	<1.
8	DC-8	.38	.35	22.	.02	<1.
9	DC-9	.05	.45	30.	.02	1.
10	DC-10	.43	.60	24.	.36	1.
11	DC-11	.02	.40	28.	.02	1.
12	DC-3A	>10.00**	32.00	100.	.04	1.

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

**NOTE: Greater than normal geochemical range. Please advise if fire assay is needed.

cc: Mr. James D. Sell

William L. Lehmbeck
Manager
1/9/88

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 510A
February 1, 1988
PROJECT NO.: DC
DC-1 TO 3A
PAGE 1 OF 1

ASARCO Incorporated
FEB 5 1988
SW Exploration

ASARCO INCORPORATED
Attn: Mr. Mark Miller
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 1 Pulp Sample

ITEM	SAMPLE NO.	FIRE ASSAY Au (oz/t)
12	DC-3A	.455

cc: Asarco Incorporated
Attn.: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Az 85703

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK ARIZONA U.S.A.

William L. Lehmbeck
Manager

WKK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: USMX Claims (Stepl. Mtns.)					② Country: USA	③ State or Province: California	
					④ USGS Quad.	⑤ File or Gore No.	
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Needles	Township: 7N	Range: 21E	Section: 11,12 13,14	⑨ Examined by: T.Dalla Vista	⑩ Date: 1987
						⑪ Office: Tucson - SWED	⑫ Field Days: 2

NE¼ T7N Date Typed 8/3/87

Section II Sources of Information

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Past Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
	+7,000 Tons	

⑰ Reserves
[ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____
Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au/Ag

㉔ Ore Minerals-Major: Free Au in Quartz veins Minor: CuOx

㉕ Host Rocks-Major: SiO_2 Minor:

㉖ Age of Host Rocks: PЄ

㉗ Nature of Exposures: Quartz veins in strongly silicified outcrop.

㉘ Alteration: Silicif.

㉙ Total Extent

㉚ Structure: Silicif. zone in PЄ Gr/Gneiss

㉛ Ore Occurrence: Veins

㉜ Age of Mineralization

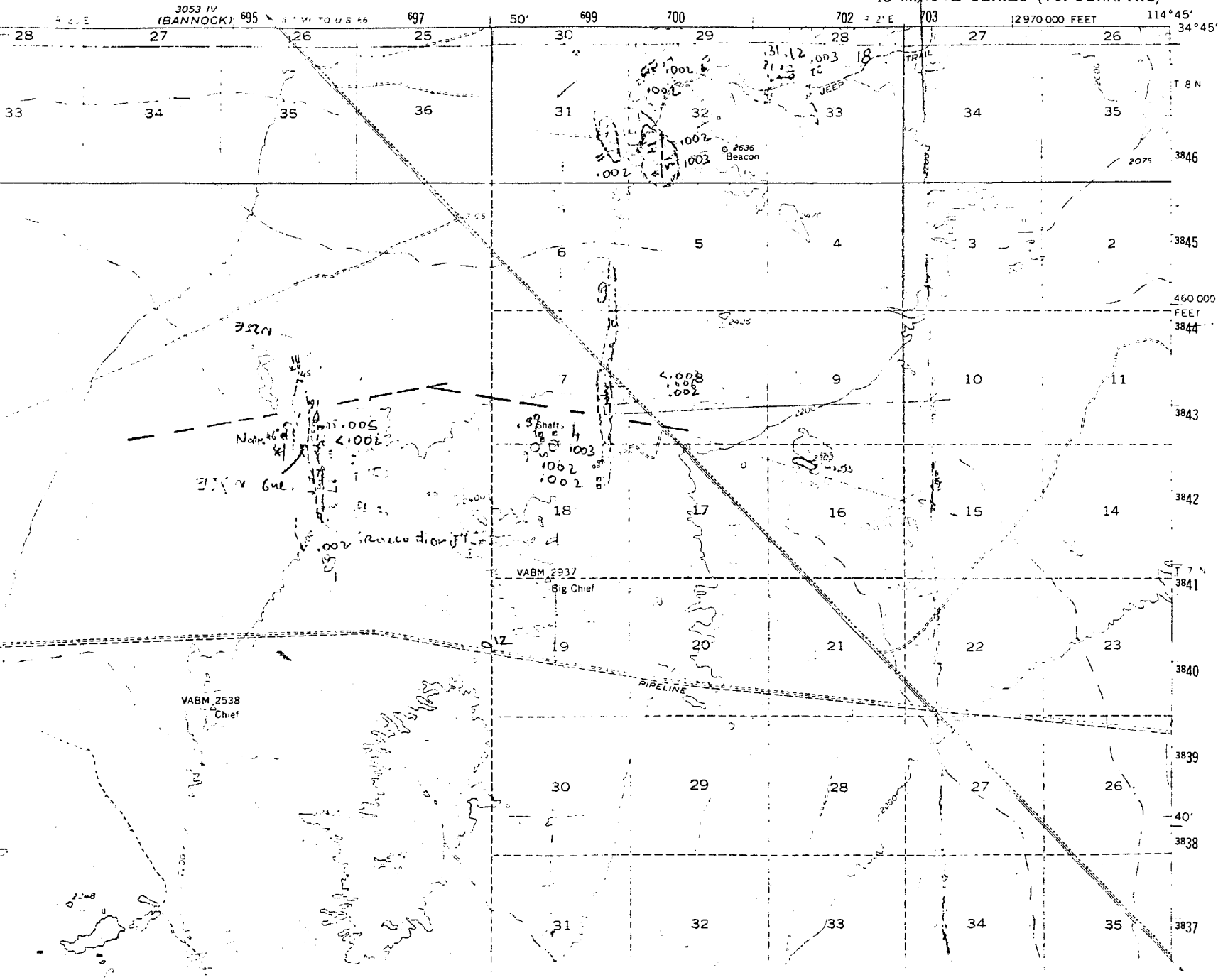
㉝ Conclusions & Recommendations: Too small and low grade.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STEPLADDER MTS. QUADRANGLE
CALIFORNIA—SAN BERNARDINO CO.
15 MINUTE SERIES (TOPOGRAPHIC)



USMX

WKR/ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Table Mountain, San Bernardino County					② Country: USA	③ State or Province: California	
					④ USGS Quad.	⑤ File or Gore No.	
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Kingman	Township: 12N	Range: 15E	Section: 11,12, 14	⑨ Examined by: T. Dalla Vista	⑩ Date: 3/87
						⑪ Office: SWED - Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 7/29/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Unknown

㉔ Ore Minerals-Major: Au Minor:

㉕ Host Rocks-Major: Gr. Minor:

㉖ Age of Host Rocks: Tertiary

㉗ Nature of Exposures: Color anomaly

㉘ Alteration: Lim./sericite/SiO_2

㉙ Total Extent:

㉚ Structure: Quartz Structures in Gr/Gneiss

㉛ Ore Occurrence:

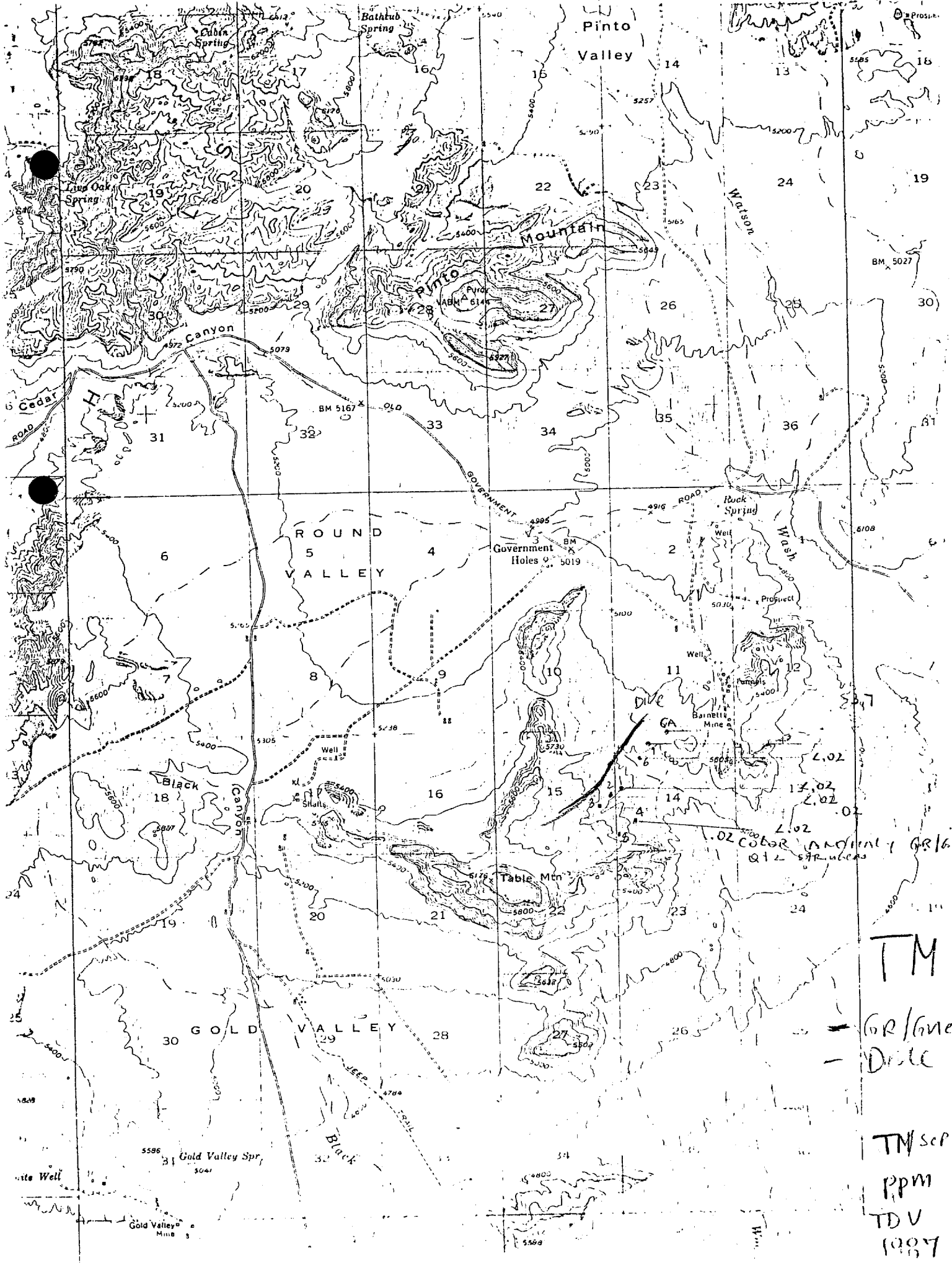
㉜ Age of Mineralization:

㉝ Conclusions & Recommendations

Extremely low anomaly. Not of interest.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193


Pinto Valley
Bathtub Spring
Cabin Spring
Lava Oak Spring
Pinto Mountain
Pinto Peak
VABM 6145
Watson Wash
BM 5027
Canyon
Cedar
ROAD
BM 5167
OLD
GOVERNMENT
ROAD
Rock Spring
Well
Wash
ROUND VALLEY
Government Holes
BM 5019
Prospect
Well
Pumpkin
Barnetts Mine
DIKE
GA
Well
Silts
Black Canyon
Table Mtn
GOLD VALLEY
JEEP TRAIL
Black
Gold Valley Spr
Gold Valley Mine
TM
GR/Gneiss
Dike
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TDV
1987

ASARCO EXPLORATION RECORD

WKK/ER File

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Fischer-Watt, Golden Syncline, San Bernardino County					② Country	③ State or Province: California	
					④ USGS Quad.	⑤ File or Gore No.	
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Needles	Township: 9N	Range: 21E	Section: W½	⑨ Examined by: T. Dalla Vista	⑩ Date: 3/87
						⑪ Office: SWED - Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 7/29/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves
[ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____
Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au?

㉔ Ore Minerals-Major: Au in quartz structures Minor: _____

㉕ Host Rocks-Major: Gneiss Minor: _____

㉖ Age of Host Rocks: PЄ/Tertiary

㉗ Nature of Exposures: Detachment (gneiss underlain volc.) type structure Lower Plate

㉘ Alteration: SiO_2/hem. after mafics

㉙ Total Extent

㉚ Structure: Quartz structures

㉛ Ore Occurrence: Possible Au miner. in quartz structures (veins and stockwork)

㉜ Age of Mineralization

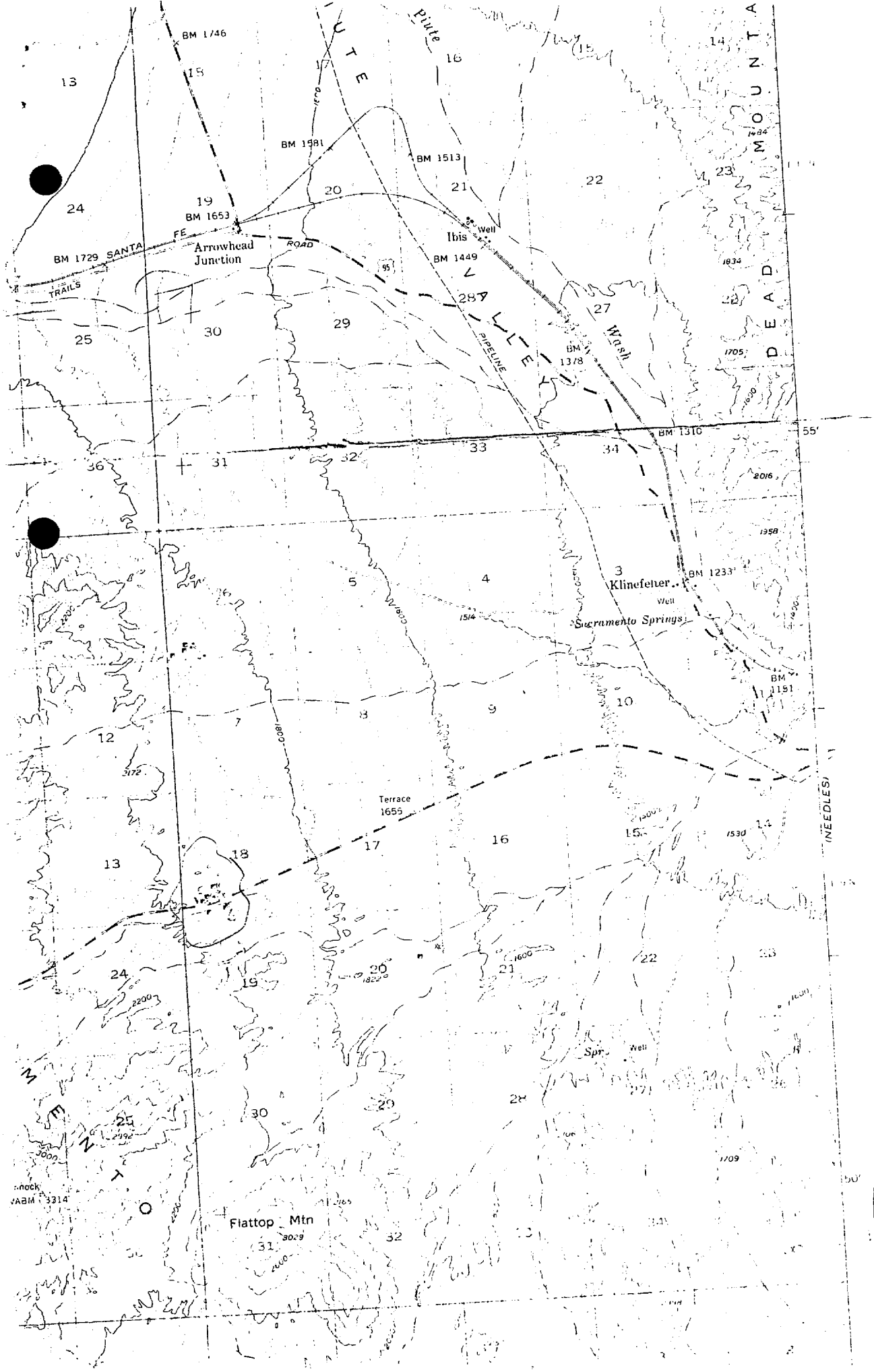
㉝ Conclusions & Recommendations

Highly speculative based on limited exploratory work by other companies.

ASARCO should monitor continued expl on the area

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193


BM 1746
Piute
BM 1981
BM 1513
BM 1653
Arrowhead Junction
BM 1729
SANTA FE
TRAILS
ROAD
Ibis
Well
BM 1449
PIPELINE
Wash
BM 1378
BM 1316
Klinefelter
Well
BM 1233
Sacramento Springs
BM 1151
Terrace
1655
(NEEDLES)
Well
Flattop Mtn
3029
3314

FW

MVK/ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Dead Mountain, San Bernardino County					② Country: USA	③ State or Province: California	
					④ USGS Quad.	⑤ File or Gore No.	
⑥ Latitude	⑦ Longitude	⑧ AMS Sheet: Kingman/Needles	Township: 12N	Range: 20E	Section: 25,26 35	⑨ Examined by: T.Dalla Vista	⑩ Date: Spring 1987
						⑪ Office: SWED Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 7/29/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes 2
Approx Total Footage ±200'

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au/Cu

㉔ Ore Minerals-Major Cu (CO_3)/Au Minor

㉕ Host Rocks-Major Gneiss/Gr Minor

㉖ Age of Host Rocks PЄ

㉗ Nature of Exposures Quartz veins in shallow pits and shafts.

㉘ Alteration FeOx, SiO_2 Bx

㉙ Total Extent

㉚ Structure Quartz vein

㉛ Ore Occurrence

㉜ Age of Mineralization

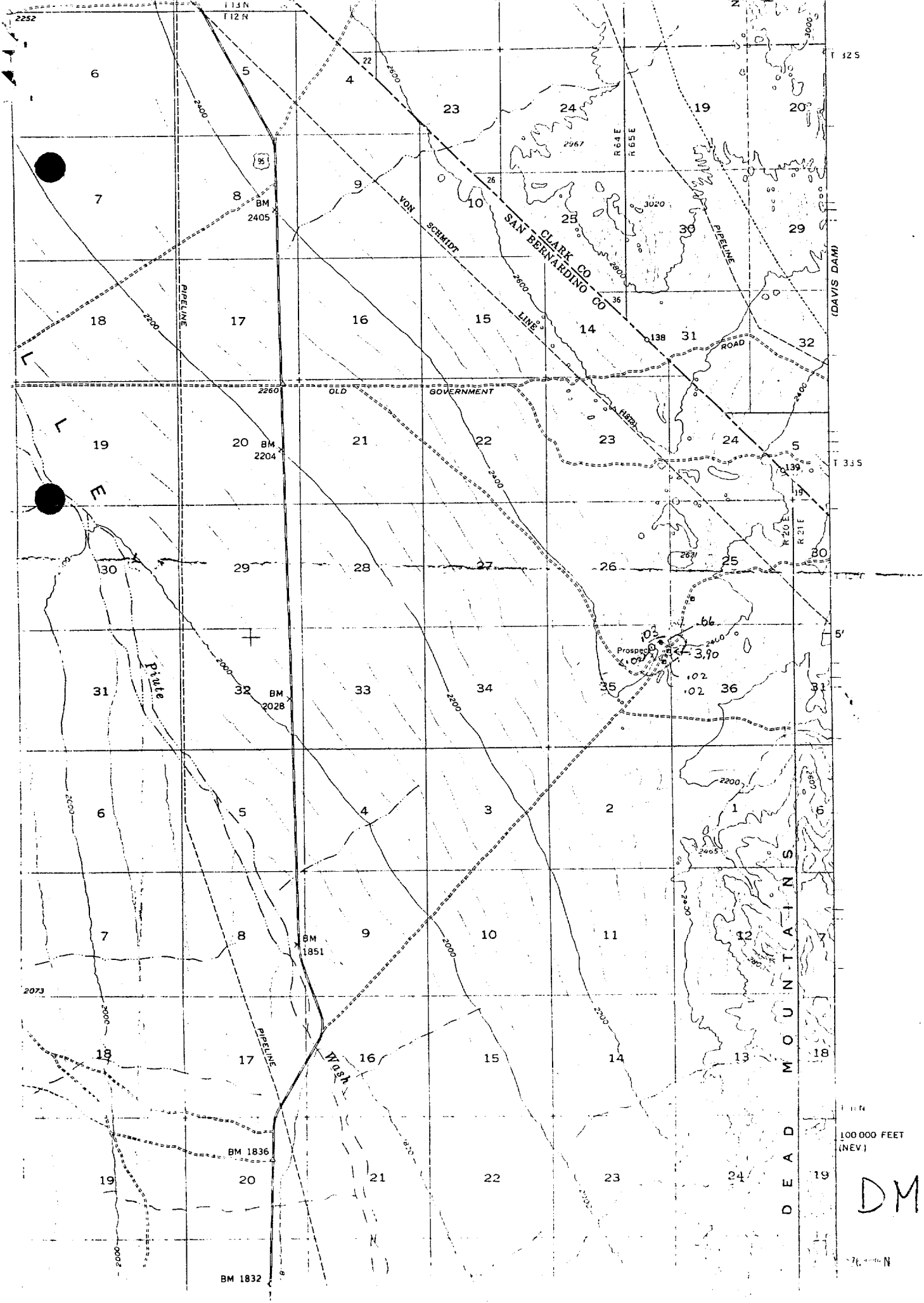
㉝ Conclusions & Recommendations

Good gold values in quartz structures, otherwise barren host rock.

No values in 2 R.D.H. drilled.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193


T 13 N
T 12 N
T 32 S
T 33 S
R 64 E
R 65 E
R 20 E
R 21 E
CLARK CO
SAN BERNARDINO CO
VON SCHMIDT LINE
PIPELINE
OLD GOVERNMENT ROAD
(DAVIS DAM)
BM 2405
BM 2204
BM 2028
BM 1851
BM 1836
BM 1832
Prospect
Pirute Wash
DEAD MOUNTAINS
100 000 FEET (NEV)
DM

WAKER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Piute Mountains, San Bernardino County		California
	④ USGS Quad.	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
		Needles	9N	18E	24 25	T. Dalla Vista	2/87
						⑪ Office SWED - Tucson	⑫ Field Days 1

Section II Sources of Information

Date Typed 7/29/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Possibly Au

㉔ Ore Minerals-Major: Au in quartz vein Minor: _____

㉕ Host Rocks-Major: Gneiss Minor: _____

㉖ Age of Host Rocks: PЄ

㉗ Nature of Exposures: Quartz structures S30E - 37°E

㉘ Alteration

㉙ Total Extent

㉚ Structure: Quartz veins

㉛ Ore Occurrence: Quartz veins and stockworks in FeOx stained gneiss.

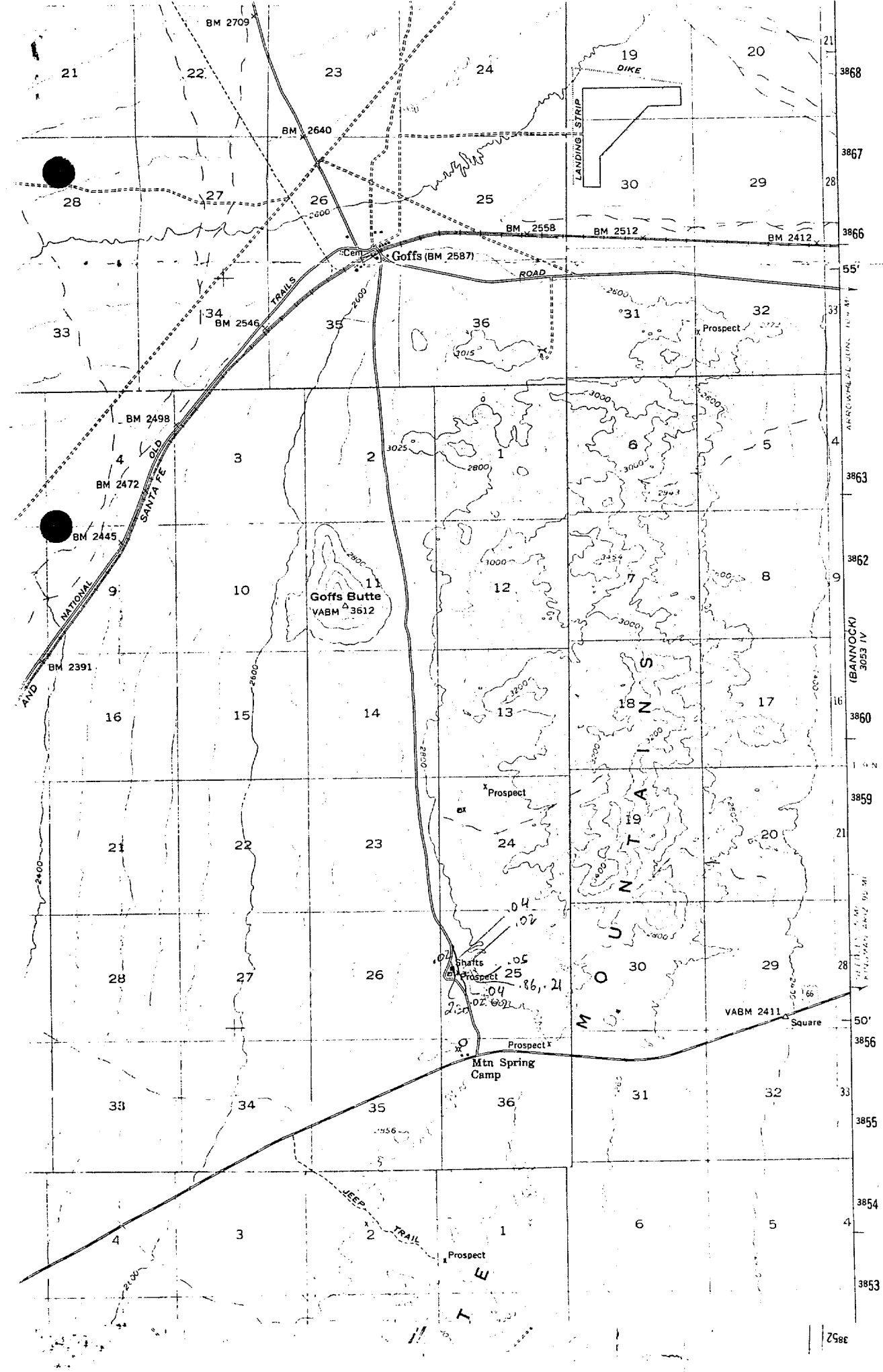
㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Values in one vein and minor anomaly in small quartz stockwork outcrops, otherwise no values. Of no interest.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193


BM 2709
BM 2640
DIKE
LANDING STRIP
BM 2558
BM 2512
BM 2412
Cem
Goffs (BM 2587)
ROAD
TRAILS
BM 2546
Prospect
BM 2498
OLD
SANTA FE
BM 2472
BM 2445
NATIONAL
AND
Goffs Butte
VABM 3612
BM 2391
(BANNOCK)
3053 IV
Prospect
Shafts
Prospect
VABM 2411
Square
Prospect
Mtn Spring
Camp
JEEP
TRAIL
Prospect

WKK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Paymaster Vein Area, Pediment Area, and System of Quartz Veinlets					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Quartz Peak	⑤ File or Gore No.: Imperial Co.	
⑥ Latitude: 33°11'45"	⑦ Longitude: 114°54'	⑧ AMS Sheet: Salton Sea	Township: 11S	Range: 20E	Section: 19,20 others	⑨ Examined by: H.G. Kreis	⑩ Date: March '87
					⑪ Office: SWED Tucson		⑫ Field Days: 4

Section II Sources of Information

Date Typed 7/8/87

⑬ References

Author	Date	Title	Publications	Vol. No.
See previous ERS on Paymaster vein and abundant file information on Paymaster Vein				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No further interest

⑮
- [ ] Past Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves
- [ ] Measured
- [ ] Estimated

Commodity	Tons	Grade
See Paymaster Mine file: 4 oz. Ag, .008 oz. Au		

⑱ Num. Drill Holes: None

Approx Total Footage: _____

⑲ Excavations: None on System of Qtz. vnlts.

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached PM series

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au-Ag

㉔ Ore Minerals-Major: _____ Minor: _____

㉕ Host Rocks-Major: Gneissic granite Minor: _____

㉖ Age of Host Rocks: 180(?) mm years

㉗ Nature of Exposures: Abundant outcrop exposures in Paymaster vein area; few scattered premineral outcrops on pediment NE of Paymaster vein.

㉘ Alteration: None associated with quartz veinlets. Weak FeOx stain some of which is after traces of pyrite

㉙ Total Extent: Qtz. vnlts.: 200' wide, ≥1000' long

㉚ Structure: Strongly developed N60°E strike to Paymaster vein and system of quartz veinlets. Quartz veinlets commonly are vertical to steeply east dipping.

㉛ Ore Occurrence: System of quartz veinlets characterized by 1/16" thick quartz veinlets with well developed micro-sized quartz crystals having an abundance of 1 to 3%. "Hands and Knees" geology.

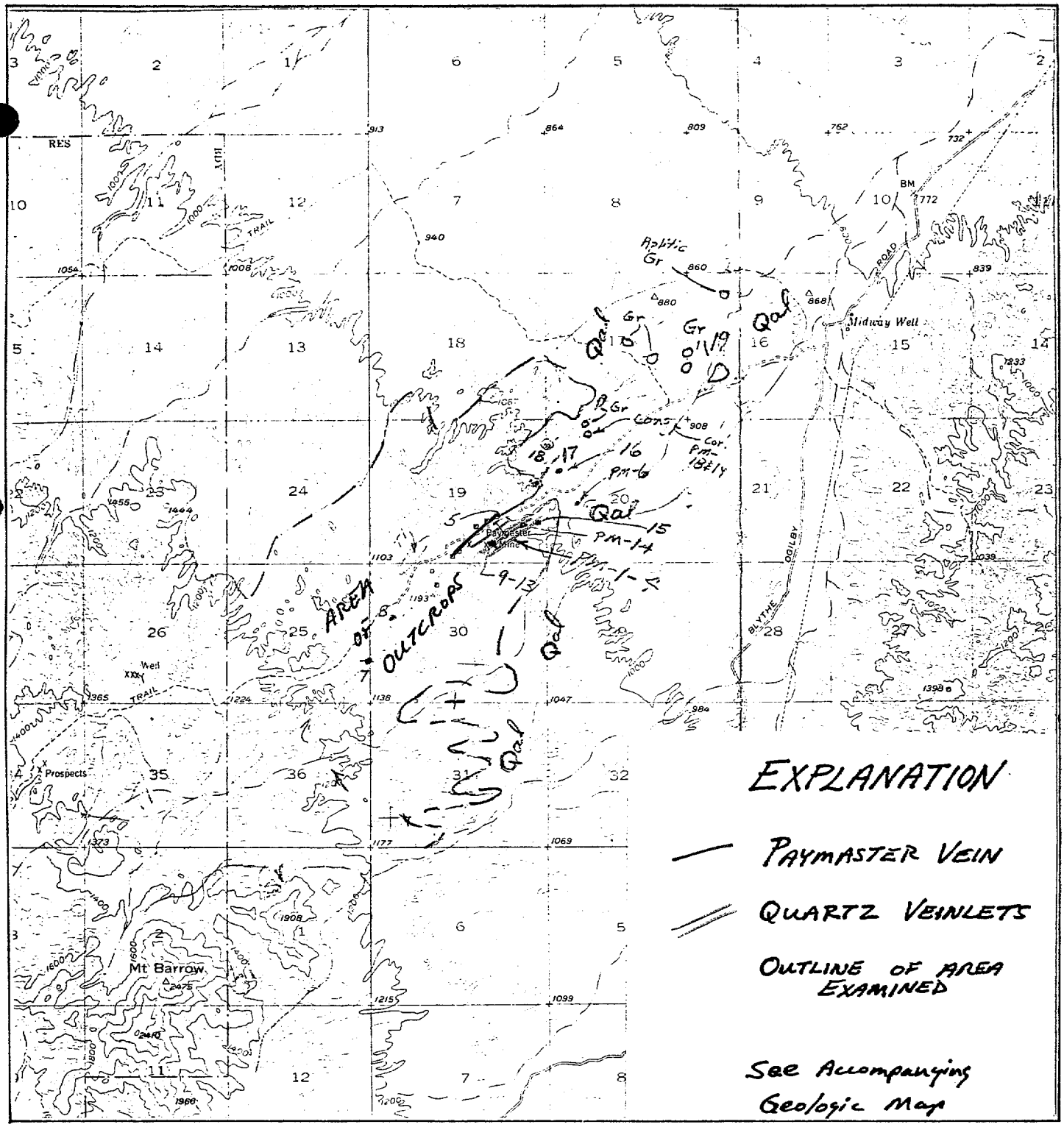
㉜ Age of Mineralization: Between 20 and 60 million years

㉝ Conclusions & Recommendations: Excluding sample PM-05 (Paymaster vein material), none of the samples contained significantly anomalous gold or silver; thus, the system of quartz veinlets is of no further interest. Nothing of interest was found on the pediment extending 2 miles to the NE of the Paymaster vein outcrops. The outcrops along the west edge of the pediment for 2 miles to the south of the Paymaster vein have no alteration-mineralization. There are a number of trenches and drill holes along the Paymaster vein, and most of the work appears (cont. page 2) (For additional space use extra sheets)

PAYMASTER VEIN AREA AND PEDIMENT AREA
SYSTEM OF QUARTZ VEINLETS

33. Conclusions & Recommendations

to have been done within the last few years. The word "Hecla" was stamped on the aluminum tag of a triangulation station, and a 2-11-85 claim notice (Silver #9) was signed by L.H. Loidolt, President, Calif. Exploration Corp., 23011 Moulton Pkwy E-8, Laguna Hills, CA 92653. The observed exploration work may have been done by one or both of these companies.



ASARCO Incorporated

198 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: QUARTZ PEAK

Examined by: H. G. KIZEIS

Follow-up Recommended: Yes☐ No☐

SCALE: 1" = 1 mile

map no. _____ date 7/87

Twsp.: 11S Rng.: 20E Sec.: 19 & Others

Prospect Name: PAYMASTER MINE

Owner: _____

State: CALIF

County: IMPERIAL CO.

District: _____

ASARCO Incorporated

1987 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: QUARTZ PEAK

Twsp.: 11S Rng.: 20E Sec.: 16, 17, 19, 20, 30, 31, 36

Prospect Name: PAYMASTER MINE

Owner: _____

Examined by: H. G. KREIS

Follow-up Recommended: Yes☐ No☐

State: CALIF.

County: IMPERIAL

SCALE: TOWNSHIPS SHOWN

District: _____

map no. _____ date 7/87

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

TERTIARY

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

msa 163 m.y. (60 m.y. metamorphic age)

Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc 166-170 m.y. (bio. gneiss) ≈180 m.y. (hbl. gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

ASARCO Incorporated

1987 GOLD PROGRAM

H.G. Kreis

PAYMASTER MINE AREA

1/3

PM-1 Sample, just 3' above red FeO_x stained small prospect pit. "High graded"; granite (bio → mus?) with 3%, NE'ly striking, 70°E dipping qtz wlts (all ≤ 1/16" thk).

-2 Sample, 150' NW (up ridge) from PM-1. Granite w/ 1-2% qtz veinlets. High graded.

-3 Sample, 50' NW (up ridge) from PM-2; at top of ridge line where NW'ly trending ridge (of PM-1 & -2) intersects ENE trending ridge. A distance of 300' from Paymaster vein. High graded. Granite (No biot. remaining) w/ 1-5% qtz veinlets.

-4 Sample, between PM-3 & vein; ≈ 100' from Paymaster vein. High graded Bio. qtz feld porph. (typical Laramide type) w/ 1% (high graded to 10%) calcite veins, some of the veins are thicker as one approaches the Paymaster vein.

-5 Sample of dump at shaft. Qtz vein, laminated to vuggy to breccia in filling. Tr to 5% FeO_x after former sulfides (Tr-5%). Old ASARCO eval. of vein showed 4 oz Ag, .008 oz Au, & ≈ 4' width.

-6 Sample, 8th-10th. Small outcrop in drainage (300' W, 200' N of a point 2950' S, 3900' W of 17/16 / 20/21. Laramide type bio qtz feld porphyry (probably qtz mons porph), fresh to locally bleached, 1% calcite vnlts, 1/4-1% micro qtz veinlets. Couple 1/2" calcite veins (NW strk, vert). Porphyry: 7% bio phenos, 20% plag phenos, 73% lt. grey colored groundmass.
Claim Notice PM-6, 12-13-82, Nicor Minerals, Bill Fuchs (Denver, Colo.)

-7 Sample. 40' wide zone of carbonate veining and carbonate alteration in andesite; ~~Paymaster fault zone~~ (E. contact of and.). Soft, crumbly rock, East side of N 15° W trending wash. And. may have shallow dipping contact to west.

(Cont.)

(PAYMASTER, CONT.)

PM-8 Sample - Prospect pit on 5'+ wide flt. zone in andesite. Strong carbonate alteration. (weak FeO_x stain.)

Remarks: "Hecla" stamp on aluminum tag on a triangulation station.
Couple (+) drill holes (rotary) on vein & numerous trenches etc.
Claim notice on west edge of vein area:
Silver #9 (Poorman's Mining Dist.), 2-1-85
L.H. Loidolt, President, Calif. Explor. Co.
23011 Moulton Pkwy E-8, Laguna Hills CA 92653
Book 1536 Page 1635

PM-9 Sample 8#, taken within 100' radius of steel claim post. Gneissic diorite & porphyry, <1/8% qtz veinlets. High graded, taking pieces with qtz veinlets.

PM-10 Sample, 10#. Knob 150' due E of PM-9. Wk to FeO_x stained granite. 1/2-1% qtz veinlets. High graded samples (5% qtz veinlets).

PM-11 Sample, 10#. 75' ESE of PM-10. Same geol as PM-10. High graded.

PM-12 Sample, 10#. 200' SE of PM-11; on top of ridge. Granite with 1/2% qtz veinlets and local wk FeO_x stain. High graded.

PM-13 Sample, 10#. 1/2 way between PM-10 and PM-3. Granite, wk FeO_x stain (but anomalously abundant) & 1% qtz veinlets in 10' wide strong shear zone. High graded.

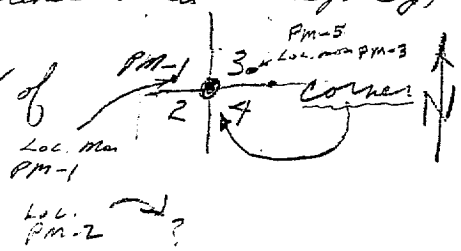
PM-14 Sample, 10#; 500' N65E of PM-3. Granite, wk FeO_x stain & 1% qtz veinlets. High graded.

PM-15 Sample, 10#. Granite, v. wk FeO_x, 1/2% qtz veinlets. High graded. 300' SE of ridge that runs from PM-14 to PM-3.
V. wk qtz veining from PM-14 to -3 ridge to this sample site.
Qtz vein zone offset or is this a parallel zone?

N30W PM-16 Sample, 10#. Small, lone outcrop (10' high).
Granite with NW'ly striking 5' thk porphyry dike.
Both rocks have total ≈ 1% qtz veins and a few calcite veinlets.
High graded sample. MnOx in 6x6 vein.

-17 No sample. The Paymaster vein is probably under the Qal of this wash immediately SE of this site; however, there is a substantial amount of small qtz & carbonate veins continuing in the outcrops for 500' to the NW from the NW edge of the Qal in the wash. The veins vary from 1" to 1' in thickness and have varying degrees of continuity. Some have a N-S strike with a steep dip.

-18 No sample. Knob ≈ 500' N & ≈ 400' W of



-19 Hand sample of Gr.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

CORRECTED COPY

JOB NO. TAJ 478
June 19, 1987

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
25	PM-01	.01	.2
26	PM-02	.02	.4
27	PM-03	.01	.2
28	PM-04	.01	.2
29	PM-05	.21	23.0
30	PM-06	<.01	.2
31	PM-07	.02	.4
32	PM-08	<.01	<.2
33	PM-09	.01	.6
34	PM-10	.01	.2
35	PM-11	.01	.4
36	PM-12	<.01	.2
37	PM-13	<.01	<.2
38	PM-14	<.01	<.2
39	PM-15	.01	.6
40	PM-16	<.01	.2

WMK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Old Channel Mine Shaft						② Country: USA	③ State or Province: California
						④ USGS Quad.: Quartz Peak	⑤ File or Gore No.: Imperial Co.
⑥ Latitude: 33°6'45"	⑦ Longitude: 114°53'15"	⑧ AMS Sheet: Salton Sea	Township: 12S	Range: 20E	Section: 20	⑨ Examined by: H.G. Kreis	⑩ Date: March '87
						⑪ Office: SWED-Tucson	⑫ Field Days: <1

Section II Sources of Information

Date Typed 7/8/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geol. Info.

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None
Approx Total Footage: \

⑲ Excavations: Vertical Shaft open to 225' depth

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached: OC-1 to -3, OC-1A to -3A

Section IV Geologic Data

㉓ Commodity or Contained Metals: Shaft dug for placer and/or lode Au

㉔ Ore Minerals-Major: _____ Minor: _____

㉕ Host Rocks-Major: Basin fill conglomerate Minor: _____

㉖ Age of Host Rocks: Cenozoic

㉗ Nature of Exposures: Older and younger alluvium; no premineral outcrops within 2000' radius about shaft.

㉘ Alteration: No significant evidence of alteration-mineralization in unconsolidated conglom. on shaft dump

㉙ Total Extent

㉚ Structure: None evident but the Qal filled drainage in which the Old Channel Shaft is located may be the topographic expression of a buried fault.

㉛ Ore Occurrence

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: The shaft is open to a depth of 225' and there is no evidence on the shaft dump (unconsolidated alluvium) that bedrock was intercepted. Two sets of three -60 mesh screen samples of dump material were taken and all six samples ran <0.02 ppm Au. The clasts show no significant evidence of alteration-mineralization. The above information from the Old Channel Shaft provides no geologic information with which to evaluate the pediment covered area of current interest. The pediment area of current interest is a one to two (cont. on page 2)

(For additional space use extra sheets)

OLD CHANNEL MINE SHAFT

33. Conclusions & Recommendations (continued from page 1)

mile strip extending 4 miles SSW from the Old Channel Shaft. Texas Gulf has held 2 to 3 square miles of unpatented mining claims about the Old Channel Shaft since May 1984. Texas Gulf's reason for holding the claims is not known to Asarco, but I plan to find out this fall after my work in Nevada has been completed.

ASARCO Incorporated

1987 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: QUARTZ PK.

Examined by: H.G. KREIS

Follow-up Recommended: Yes☐ No☐

SCALE: TOWNSHIPS SHOWN

map no. _____ date 7/87

Twsp.: 12S Rng.: 20E Sec.: 20

Prospect Name: OLD CHANNEL MINE

Owner: _____

State: CALIF

County: IMPERIAL CO

District: _____

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

msa

163 m.y. (60 m.y. metamorphic age)

Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc

166-170 m.y. (bio-gneiss)
≈180 m.y. (hbl-gneiss)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

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1987 GOLD PROGRAM

Old Channel Shaft (Sec 20 T12S, R20E)
Open to 225' depth (vertical).
Dump about collar of shaft is all unconsolidated conglomerate ("alluvium") of subangular clasts of gneiss-schist & volcanic rocks. No indication of mineralization. Nothing to suggest bedrock was intercepted.

OC-1 -60 mesh of dump material on north side of shaft.
-2 " " " " " " east " " ".
-3 " " " " " " south " " ".
Recheck OC-1A, -2A, -3A -60 mesh samples from same sides of dump. Recheck Samples

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 486
June 5, 1987

ITEM	SAMPLE NO.	Au (ppm)
26	QP-40	<.02
27	QP-41	<.02
28	QP-42	<.02
29	OC-1A	<.02
30	OC-2A	<.02
31	OC-3A	<.02

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CORRECTED COPY
JOB NO. TAJ 478
June 19, 1987

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
51	DH-01	<.01	
52	DH-02	.02	
53	DWL-01	.01	
54	OC-01	<.01	
55	OC-02	<.01	
56	OC-03	<.01	

WKK-ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Dos Hambres Shaft					② Country: USA	③ State or Province: Calif.	
					④ USGS Quad.: Quartz Peak	⑤ File or Gore No.: Imperial Co.	
⑥ Latitude: 33°07'	⑦ Longitude: 114°55'	⑧ AMS Sheet: Salton Sea	Township: 12S	Range: 19E	Section: SE corner 13	⑨ Examined by: H.G. Kreis	⑩ Date: March'87
					⑪ Office: SWED	⑫ Field Days: 4	

Section II Sources of Information

Date Typed 7/8/87

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geol. Info.

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations Vertical Shaft open to 95' depth.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached DH-1,-2

Section IV Geologic Data

㉓ Commodity or Contained Metals: Shaft dug for placer and/or lode Au

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major: Basin fill conglomerate Minor _____

㉖ Age of Host Rocks: Cenozoic

㉗ Nature of Exposures: Qal and older and younger conglomerate; no premineral outcrops within 800' radius of shaft.

㉘ Alteration: Weak alt.-min. (as at Mesquite) in ≤5% of schist clasts on dump contain <.01 ppm Au (sample DH-1).

㉙ Total Extent

㉚ Structure: None evident.

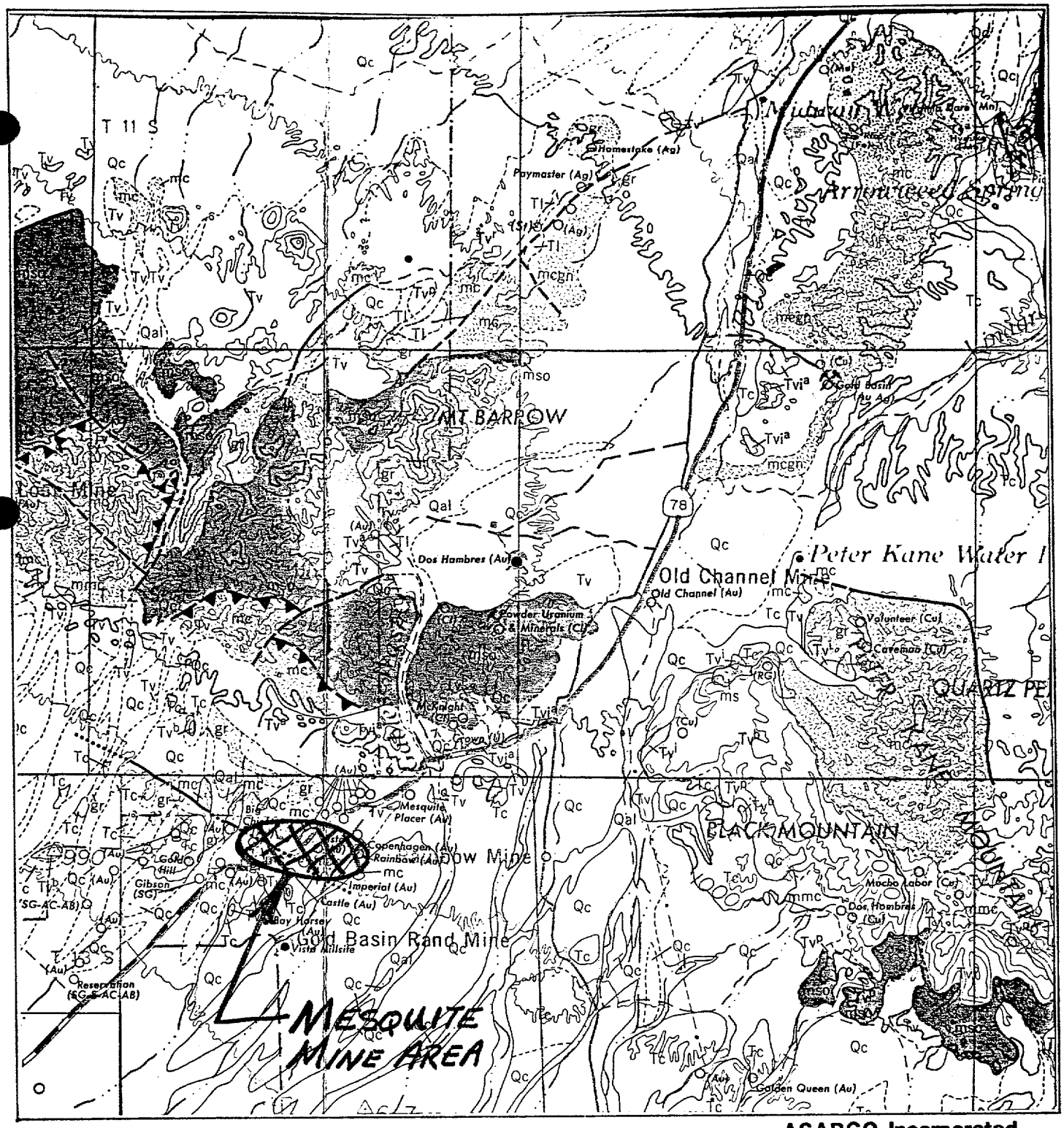
㉛ Ore Occurrence: None.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: Sample DH-1 of weakly altered and mineralized schist clasts and sample DH-2 of -60 mesh material, both from the shaft's dump, ran <0.01 and 0.02 ppm Au respectively. The shaft is open to a depth of 95' and there is no evidence of premineral bedrock on the dump. The above information was gathered to help evaluate the large pediment area extending north and west of the Old Channel Shaft.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193



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1987 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: QUARTZ PEAK

Examined by: H.G. KREIS

Follow-up Recommended: Yes☐ No☐

SCALE: TOWNSHIPS SHOWN

map no. _____ **date** 7/87

Twsp.: 12S **Rng.:** 19E **Sec.:** 13

Prospect Name: DOS HAMBRES

Owner: _____

State: CALIF.

County: IMPERIAL CO

District: _____

IMPERIAL COUNTY REPORT 7
PLATE 1

GEOLOGIC MAP OF IMPERIAL COUNTY, CALIFORNIA

SHOWING MINES AND MINERAL DEPOSITS

Compiled by Paul K. Morton (1966)

EXPLANATION

QUATERNARY

Qal

Alluvium

Unconsolidated clay, silt, sand, and gravel occurring primarily as valley fill and streamwash deposits.

Qs

Dune sands

Unconsolidated sand and silty sand. Includes both Holocene and Pleistocene ages.

Qc

Older alluvium

Partly dissected largely unconsolidated, poorly sorted silt, and gravel of alluvial fans, desert pavement areas, margins of larger canyons, and terraces. Includes Chemihuevis Formation.

TERTIARY

Pliocene

Tbs

Bouse Formation

Interbedded marine to brackish water limestone, siltstone, sandstone and tufa.

Tc / Tcv

Clastic rocks

Tc = non-marine clastic rocks and volcanic conglomerate.

Tcv = yellow-gray, moderately to poorly consolidated, poorly sorted pebbly siltstone, sandstone and conglomerate. Includes both pre- and post-basalt units of widely variant composition.

Tv^b

Basalt flows

Fine-grained vesicular basalt and minor interbedded conglomerate overlie and underlie non-marine clastic rocks.

Tl

Inter-volcanic lakebeds

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.

Tcr

Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.

Tv

Volcanic rocks

Tv^i = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tvi^a = intrusive andesite
Tv = undifferentiated

Tbr

Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.

UNDIVIDED PRE-TERTIARY

Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.

gr

Granitic rocks

Largely Mesozoic in age.

gr_1 = biotite granite
gr_2 = leucogranite
gr_3 = quartz diorite
gr_4 = quartz monzonite

mmc

McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.

Pm

Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.

Pmls = marble

ms

Metasedimentary rocks

All of Precambrian(?) age.

mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.

msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pellitic schist.

ms = undivided

msos

163 m.y. (60 m.y. metamorphic age)

Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phillite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.

mc

166-170 m.y. (bio-grains)
~180 m.y. (hbl grains)

Chuckwalla Complex

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

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1987 GOLD PROGRAM

Don Hamber (SE Cor. Sec 13, T12S, R19E)
Vertical shaft open to 95' depth.
Small dump at collar composed of "Qal" to weakly consolidated conglomerate (ie unconsolidated conglomerate).
Schist & volcanic rocks. 5% of schist is weakly altered (bleached) & mineralized (tr - 12 F.T.S.) as at Mesquite.

DH-1 Dump. Hand sorted clasts of wk'ly alt. & min. schist.

DH-2 -60 mesh of dump material.

WKK - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Carson-Vaughn Property & Jacumba Area	USA	California
	④ USGS Quad. Jacumba 7½'	⑤ File or Gore No. San Diego Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
32°37'10"	116°09'15"	San Diego	18S	8E	10	H.G. Kreis	5/87
						⑪ Office SWED Tucson	⑫ Field Days 3

Section II Sources of Information

Date Typed 7-7-87

⑬ References

Author	Date	Title	Publications	Vol. No.
H.G. Kreis	4-28-87	Carson-Vaughn Gold Prospect	Asarco Files	
P. Locke	1-1936	Carson-Vaughn Property	Asarco Files	
Calif.Div. of Nat.Res.		Areal Geol. of Jac. Quad	Map Sheet #23, Bul. 170	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No further interest

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 1
Approx Total Footage 175'

⑲ Excavations 88' shaft & hundreds of pits 1' to 20' deep have all been filled in.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

JBA-1 to -10 (Corrected Au values)
JAC-11 to -50

Section IV Geologic Data

㉓ Commodity or Contained Metals: Suspected gold (none found)

㉔ Ore Minerals-Major: None Minor:

㉕ Host Rocks-Major: Sandstone conglom. and flows Minor:

㉖ Age of Host Rocks: Tertiary

㉗ Nature of Exposures: W/2 of Sec. 10 is pediment gravel covered. E/2 of Sec. 10 has spotty outcrops (≤10%) of sandstone and conglomerate beneath andesite cap rock

㉘ Alteration: None

㉙ Total Extent

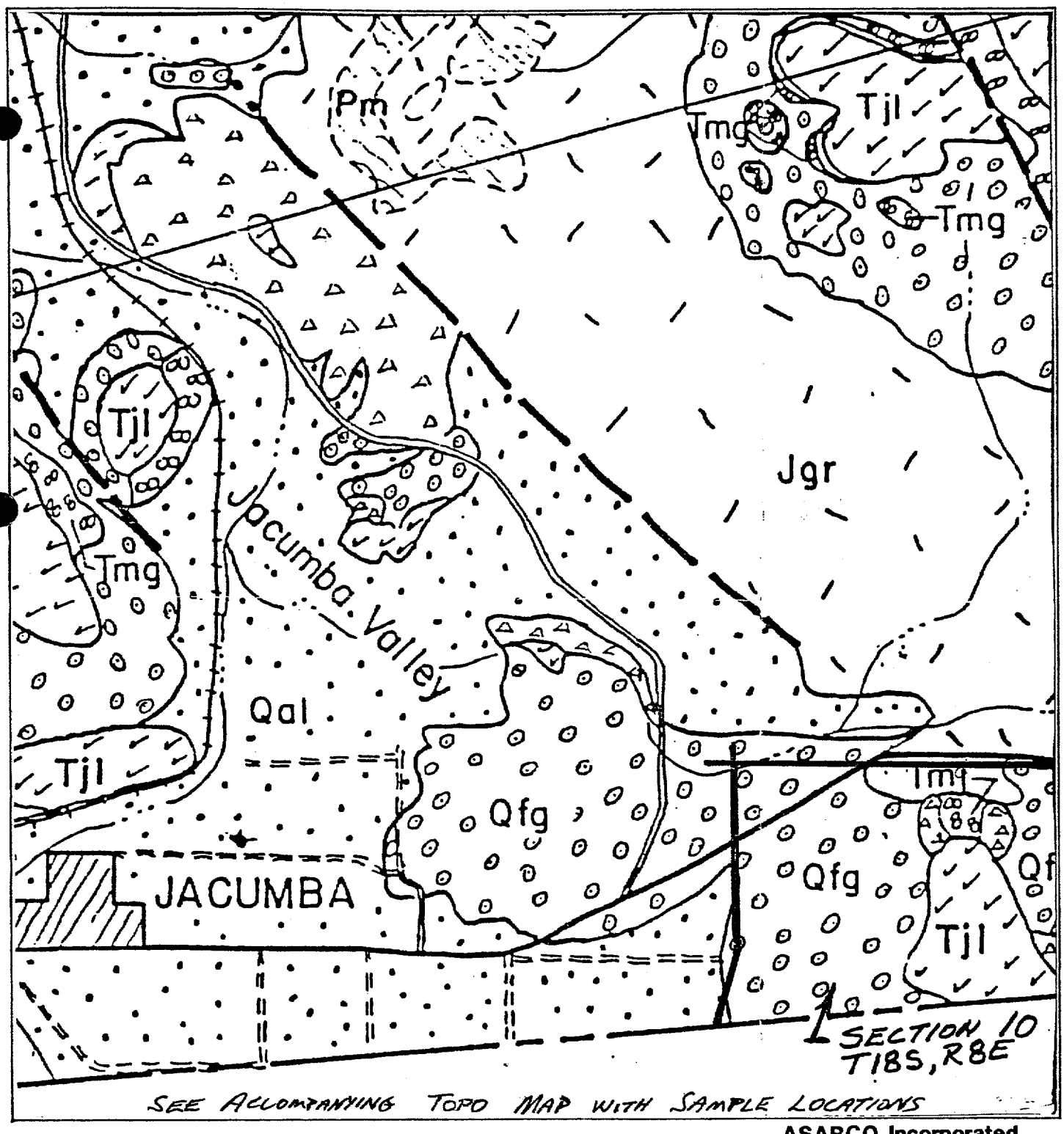
㉚ Structure: Gently dipping sediments and volcanic flows.

㉛ Ore Occurrence: None

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: The 1935-1936 file data, the erroneously anomalous gold values of JBA-1 to 10 in TAJ-478 (April 3, 1987), and the presence of hot springs suggested the possibility of hot springs gold mineralization at the Carson-Vaughn Prospect and elsewhere in the Jacumba area. Follow-up sampling (JAC-11 to 50) and field work on and about the Carson-Vaughn property and elsewhere in the district found no evidence of gold mineralization or hot springs alteration-mineralization. The Carson-Vaughn property is of no further interest.

(For additional space use extra sheets)



SEE ACCOMPANYING TOPO MAP WITH SAMPLE LOCATIONS

EXPLANATION ATTACHED

ASARCO Incorporated

1987 GOLD PROGRAM

GEOLOGIC MAP
JACUMBA AREA

SAN DIEGO CO. CA

1" = 2000'

LEGEND

QUATERNARY

Qal — RECENT ALLUVIUM-Alluvium of the present cycle of deposition. Coarse, arkosic sands and gravels.

Qfg — POST-LAVA FANGLOMERATE- Sands and gravels of older alluvium, now being eroded.

TERTIARY

Tjl — JACUMBA LAVA- Chiefly andesite and olivine basalt flows.

Tja — JACUMBA PYROCLASTICS- White to red tuffs, gray to red agglomerates, with some interbedded gravels. Chiefly andesitic in composition.

Tmg — TABLE MOUNTAIN GRAVELS- Well-rounded to angular fragments of local rocks and rocks similar to the Santiago Peak volcanics near the Pacific coast.

Jurassic Cretaceous

Jgd — QUARTZ DIORITE DIKES- Fine-grained biotite quartz diorite dikes. Finer-grained and more melanocratic than the La Posta.

Jgr — LA POSTA QUARTZ DIORITE- Quartz diorites of at least two different ages. Includes many unmapped pegmatite dikes.

Pre-Jurassic

Pd — DIORITE- Chiefly hornblende diorite. Includes unmapped quartz diorite and pegmatite dikes.

Pm — JULIAN SCHIST- Metamorphic rocks. Includes gneiss, biotite schist, marble, amphibole schist, and quartzite, with many unmapped pegmatites.

——— Contact, well located

------ Gradational contact

8 Attitude of bedding

——— Fault, well located

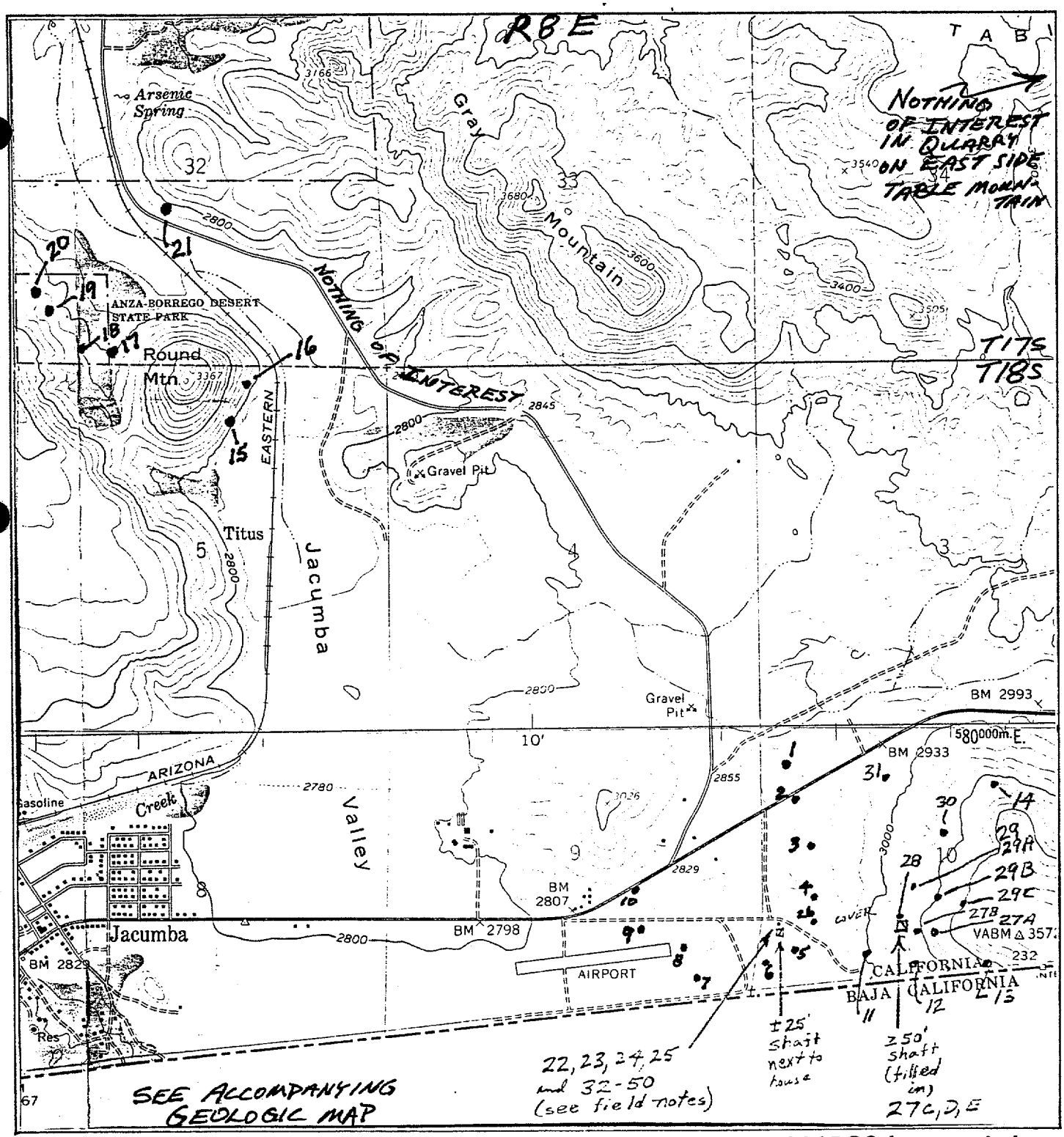
— — Fault approximately located

75 Attitude of foliation

AREAL GEOLOGY MAP OF THE JACUMBA QUADRANGLE

SAN DIEGO AND IMPERIAL COUNTIES
CALIFORNIA

Field Geology Classes of San Diego State College
Edited by Baylor Brooks and Ellis Roberts



SAMPLES: 1-10 are JBA series
11-50 are JAC series

ASARCO Incorporated

1987 GOLD PROGRAM

AMS Sheet: SAN DIEGO

USGS Quad.: JACUMBA (7½')

Twsp.: 18S **Rng.:** 8E **Sec.:** 10

Prospect Name: CARSON-VAUGHN

Owner: V.E. MAZZANTI

Examined by: H.G. KREIS

Follow-up Recommended: Yes ☐ No ☒

State: CALIF.

County: SAN DIEGO

District: JACUMBA

SCALE: 1" = 2000'

date 7/1987

H. G. KREUS
MARCH & MAY
1987
(1 of 3)

CARSON-VAUGHN & JACUMBA AREA
SAN DIEGO CO CALIF
SEC 10 T18S R8E

JBA-1 see below

JBA -2 -60 mesh sample, 4' high road cut in gal.
-3 " " soil in drainage sample.
-4 " " " " " " . Well devel. drainage
-5 " " " " " " . Moderately " "
-6 " " " " " " " " "
-7 " " " " " " . Poor to mod. " "
-8 " " " " " " . " " " " "
-9 " " " " " " . " " " " "
-10 " " " " " " . Well devel. drainage.

JBA-1 Sample. Dump truck sized load dumped here. Clay-sericite altered tuff. Commonly brecciated with a matrix of white hot springs type calcite or veined with same type calcite. Local former pyrite, upto ½% (all oxidized), associated with carbonate mineralization. Typically light brown color. High graded sample taking breccia pieces with stronger FeO_x. Some fragmental-like layering of carbonate looks like sea shells.

CONTINUED NEXT PAGE

Owner of ±W/2 of Sec 10 (since 1957):

Dr. Vincent E. Mazzanti
6114 Terryhill Dr.
La Jolla, CA
619-459-0173

JAC-11 Sample, -60 mesh drainage sediment
-12 " " " soil, road up hill, 150' N. of fence
-13 Sample. Rock chip. F-g, gray colored sandstone & tan colored conglom. matrix. No obvious alt^n-min.
-14 Sample. Rock chip. Gray colored conglom matrix, ~~local~~ trace carbonate lined solution "tubes". Collected on slope over 50' vert. distance
-15 Sample. Soil, -60 mesh at base of steep slope with volc. conglom. outcrops
-16 Sample. -60 mesh drainage sediment.
-17 " " " major " " .
-18 " " " prominent " "
-19 " " " " " "
-20 " " " " " "
-21 " " " " " "
-22 Sample, -60 mesh, soil at "collar" of hole (former shaft?) under out house
-23 Sample. 2' thk outcrop of caliche bed. 200' south of house
-24 " , -60 mesh, drainage sed. (drainage w/ caliche bed).
-25 " , " " , soil about collar of 5x5' fenced off hole filled with garbage. Probable dug well but no dump. Substantial fence like one that would be put around collar of shaft. 80'S, 20' east of SE corner of house
+5' of garbage in collar of old shaft
-26 Sample, -60 mesh, drainage sed.
-27 Sample, gray colored conglomeritic sandstone from granitic source.
-28 Sample, -60 mesh, drainage sed. Scattered outcrops of conglomeritic sandstone & conglom. in this area; some are abundantly rich in granitic source material and other rich in volcanic source material.
-29 Sample, -60 mesh, drainage sed.
-30 Sample, " , " "
-31 " " " "
-29A Sample, outcrop in wash volcanic conglomerate or agglomerate all volc. clasts. Gray ash rich matrix
-29B Sample volc. conglom w/ white tuff matrix (abundant matrix).
-29C Sample volc. breccia, ~15 white tuff matrix

JAC-27A Sample, tan colored volc. conglom., tuffaceous matrix

-27B Sample, volc. agglom or conglom with gray tuffaceous matrix.

-27C Sample, 1450' east of house & 50' N. of JAC-49 Gray conglomeratic sandstone, fine to c. grained, weakly cemented. Old shaft site 20' N of sample site

-27D Sample, sand north side of shaft collar. } Owner filled
-27E " " west " " " " } in shaft.

Owner said he could not see bottom of shaft (before filling it in) and said it was at least 50' deep. Most all of the dump was used to fill shaft. Samples 27D & 27E (sand) may be dump material

-27F Sample, -60 mesh soil, 150'± N of old shaft site.
-27G " " " " , 250' " " " " "

JAC-32	Sample,	-60 mesh	soil,	100',	south	of	house	
-33	"	"	"	200'	"	"	"	
-34	"	"	"	300'	"	"	"	
-35	"	"	"	400'	"	"	"	
-36	"	"	"	500'	"	"	"	(zero reset)
-37	"	"	"	700'	"	"	"	
-38	"	"	"	900'	"	"	"	(50' from fence)
-39	"	"	"	At house.				
-40	"	"	"	100',	east	of	house	
-41	"	"	"	200'	"	"	"	
-42	"	"	"	300'	"	"	"	
-43	"	"	"	400'	"	"	"	
-44	"	"	"	500'	"	"	"	
-45	"	"	"	700'	"	"	"	
-46	"	"	"	900'	"	"	"	
-47	"	"	"	1100'	"	"	"	
-48	"	"	"	1300'	"	"	"	
-49	"	"	"	1500'	"	"	"	(area of 1st outcrop up hill from house)
-50	"	"	"	100'	west	of	house	

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CORRECTED COPY

JOB NO. TAJ 478
June 19, 1987

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Ag (ppm)
41	JBA-01	<.01	
42	JBA-02	.01	
43	JBA-03	<.01	
44	JBA-04	<.01	
45	JBA-05	<.01	
46	JBA-06	<.01	
47	JBA-07	<.01	
48	JBA-08	<.01	
49	JBA-09	<.01	
50	JBA-10	.01	

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REPORT OF ANALYSIS

JOB NO. TAJ 478A
April 28, 1987

ASARCO INCORPORATED
Attn: Mr. H. G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 20 Pulp Samples

ITEM	SAMPLE NUMBER	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
41	JBA-01	.4	20.	<2.	.07
42	JBA-02	.2	5.	<2.	.01
43	JBA-03	.2	10.	<2.	.03
44	JBA-04	.2	5.	<2.	<.01
45	JBA-05	.2	<5.	<2.	.01

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1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
46	JBA-06	.6	5.	<2.	.03
47	JBA-07	.4	10.	<2.	.03
48	JBA-08	.2	5.	<2.	.01
49	JBA-09	.4	5.	<2.	.03
50	JBA-10	<.2	5.	<2.	<.01

cc: ASARCO INCORPORATED
Attn: Mr. J. D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ik

REPORT OF ANALYSIS

JOB NO. TAJ 483
June 9, 1987
JAC-11 TO JAC-50

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 38 Soil and 12 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Au** (oz/t)	As (ppm)
1	JAC-11	<.02		
2	JAC-12	<.02		
3	JAC-13	<.02		
4	JAC-14	<.02		
5	JAC-15	<.02		
6	JAC-16	<.02		
7	JAC-17	<.02		
8	JAC-18	<.02		
9	JAC-19	<.02		
10	JAC-20	<.02		
11	JAC-21	<.02		
12	JAC-22	<.02		
13	JAC-23	<.02		
14	JAC-24	<.02		
15	JAC-25	<.02		
16	JAC-26	<.02		
17	JAC-27		<.005	<5.
18	JAC-27A	<.02		
19	JAC-27B	<.02		<5.
20	JAC-27C		<.005	<5.

ASARCO Incorporated
JUN 11 1987
SW Exploration

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Au** (oz/t)	As (ppm)
21	JAC-27D		<.005	<5.
22	JAC-27E		<.005	<5.
23	JAC-27F	<.02		
24	JAC-27G	<.02		
25	JAC-28	<.02		
26	JAC-29	<.02		
27	JAC-29A	<.02		
28	JAC-29B	<.02		
29	JAC-29C	<.02		
30	JAC-30	<.02		
31	JAC-31	<.02		
32	JAC-32	<.02		
33	JAC-33	<.02		
34	JAC-34	<.02		
35	JAC-35	<.02		
36	JAC-36	<.02		
37	JAC-37	<.02		
38	JAC-38	<.02		
39	JAC-39	<.02		
40	JAC-40	<.02		
41	JAC-41	<.02		
42	JAC-42	<.02		
43	JAC-43	<.02		
44	JAC-44	<.02		
45	JAC-45	<.02		

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 483
June 9, 1987

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (ppm)	Au** (oz/t)	As (ppm)
46	JAC-46	<.02		
47	JAC-47	<.02		
48	JAC-48		<.005	
49	JAC-49		<.005	
50	JAC-50	<.02		

*NOTE: Analysis based on a 20 gram sample. AA

**NOTE: Analysis based on a one assay-ton sample. F.A.-A.A.

cc: Mr. J. D. Sell
Ms. Mary Kavanagh

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

w AK/ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Santa Rosa, et al	USA	California
	④ USGS Quad. Steele Peak 7.5'	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
589,750N 33° 7'05"	1670350 E 117°20'07"	Santa Ana	4S	4W	31	M. Miller	6/87
						⑪ Office Tucson - SWED	⑫ Field Days 1

Calif. Coord. System

Section II Sources of Information

Date Typed 7/1/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Bradley, Walter	10/35	Geology of a Portion of the Perris Block Riverside, CA.	CA Journal of Mines & Geology	31 #4

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] to Urban

⑮

- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations Several Pits 4-5 Inclined & Shafts poss. connected

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Gold Minor:

㉕ Host Rocks-Major: Quartz Diorite Minor:

㉖ Age of Host Rocks: Mesozoic Poss. Jurassic

㉗ Nature of Exposures: Pits and inclined shafts - also O.C. on hillsides Est. 10% O.C.

㉘ Alteration: Weak hematite alteration on hanging wall

㉙ Total Extent: ± 2' on hanging wall

㉚ Structure: Probably quartz vein and/or flat fault.

㉛ Ore Occurrence: Quartz veins - reported as free gold.

㉜ Age of Mineralization:

㉝ Conclusions & Recommendations: Patented claims still untouched but major subdivision development on all sides. No large scale alteration indicating a potential major gold system. Area too urbanized. No interest to Asarco.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

Mohave Reconn — Santa Rosa Mine Area

Perris Dist — Steele Pk Quad

SP Party

— Santa Rosa Mine Area —

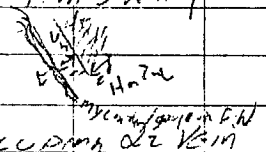
SP-1 — Qz Vein — 1' w IPG in Qz Diorite

Vn Strike N30°W 65°S.

Decomposed H.W — Sample 2' 2'

H.W & Qz Vein — Hm Staining ~2'

above Qz Vein



SP-2 — Wall Rock Excluding Qz Vein

Rks Dip N35°W 55°S — Modfiacty

Faulted Numerous Small 1/4" Gouge

Zones — 6' Channel across Dip

2 Fine Sets ∥ to Bdg & ~65° as

Qz Vein

Several Small Pits —

Poor Fallen Shaft

SP-3 Small Adit — Flat Fault

Strikes E-W Dips 30°S —

Sampled Wall Rock

Qz Diorite — Not visibly altered

6' Channel in H.W —

SP-4 — 6" Fault Qz Vein as above

Sampled

Inclined Shafts Connect —

N10° S60°E 35°S — Directly Shaft

~50 w/ x-cut @ Bottom — H2O

Filled — Developed in H.W of Fault

Shaft Prob goes deeper —

SP-5 — Small Adit Opp Side of Creek —

6' Channel ∥ to Dip

Silicification — N70°E Dips 50°S —

Over H & V Faults 2" Tr Calc —

N10°W V —

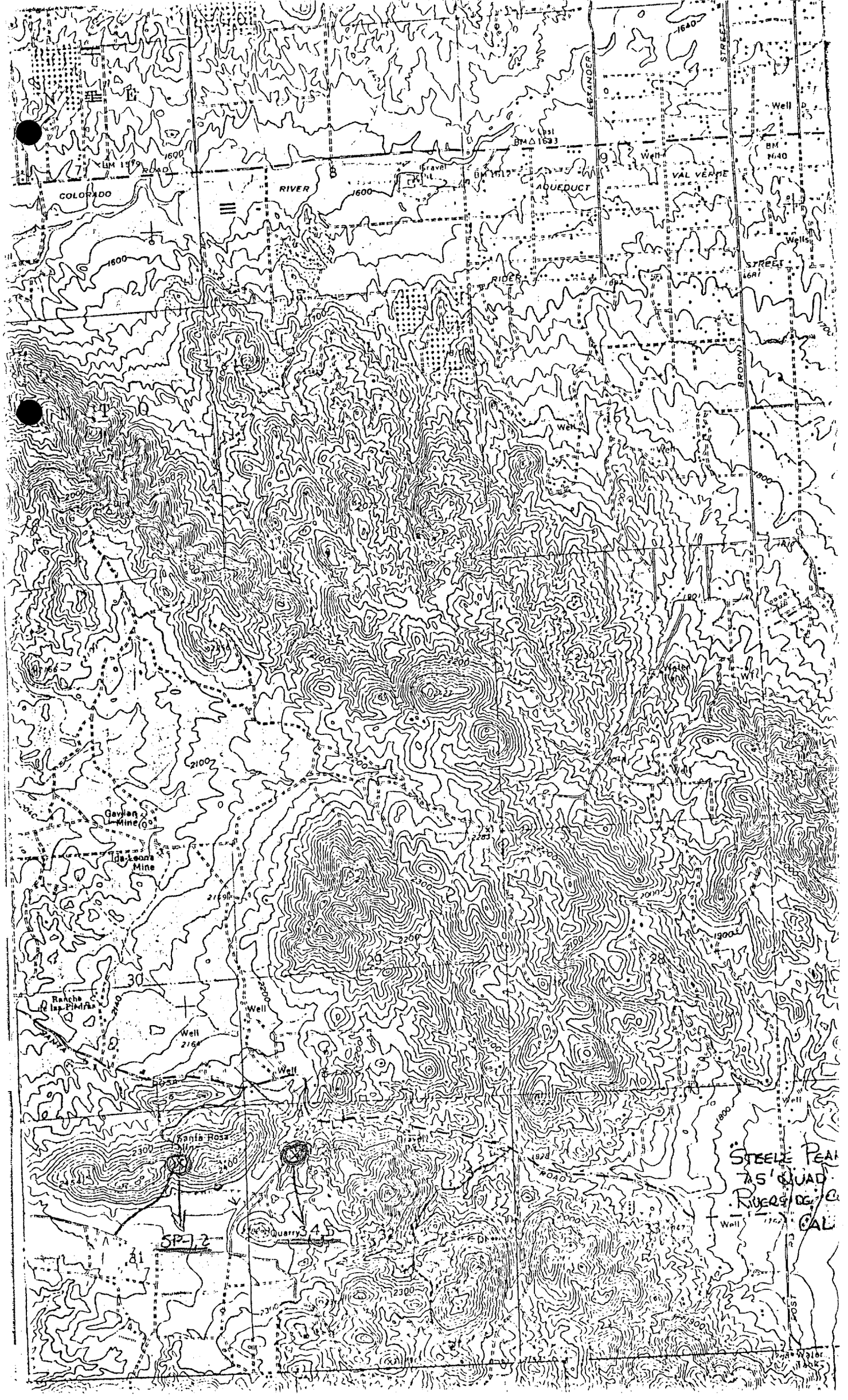
Channel is in Qz Diorite —

Sample

Working N70°W ~45°S —

Poss Contact Between Litan Fels

Contact Rk of Qz Diorite??


COLORADO
RIVER
ROAD
VAL VERDE
AQUEDUCT
RIVER
ALEXANDER
STREET
BROWN
STREET
Well
Wells
Gravel Pit
Water Tank
Gavilan Mine
Ida Leon's Mine
Rancho Las Pimas
Santa Rosa Mine
Quarry
SP-1,2
STEELE PEAK
7.5' QUAD
RIVERSIDE CO
CAL

WAK-ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Ida Leona/Gavilin	USA	California
	④ USGS Quad. Steele Peak 7.5'	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
596,150N 33°48'7"	1670000E 117°20'10"	Santa Ana	4S	4W	19 30	M.Miller	6/87
						⑪ Office Tucson	⑫ Field Days 1

Calif. Coord. System

Section II Sources of Information

Date Typed 7-1-87

⑬ References

Author	Date	Title	Publications	Vol. No.
Bradley, W.	Oct. 1935	Geology of a Portion of the Perris Block Riverside, CA	CA.Journal of Mines & Geology	31 #4

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] To Urban*

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Gold		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes ? Approx Total Footage ?

⑲ Excavations None Seen.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Gold

㉔ Ore Minerals-Major Gold Minor

㉕ Host Rocks-Major Qtz Diorite Minor

㉖ Age of Host Rocks Mesozoic? Poss. Jurassic

㉗ Nature of Exposures None seen but builders and O.C is quartz diorite.

㉘ Alteration None seen.

㉙ Total Extent

㉚ Structure Reported to be quartz veins - in quartz diorite from former Asarco reports

㉛ Ore Occurrence Associated with quartz veins

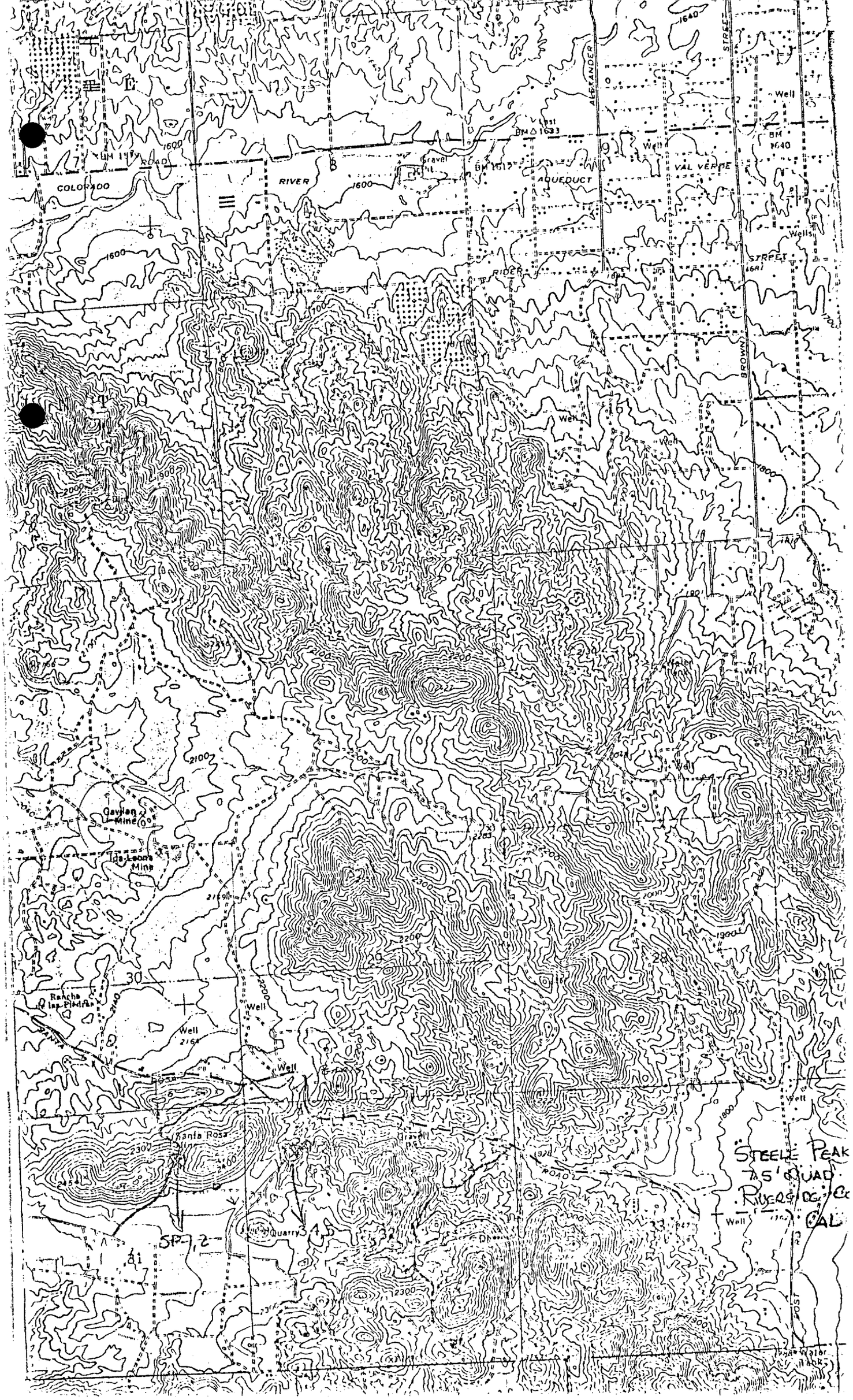
㉜ Age of Mineralization

㉝ Conclusions & Recommendations

*The area is in the thros of "urban sprawl." Patented mining claims are being subdivided for housing lots. Old mine sites are and will be soon covered. No interest to Asarco. This area is about 50 miles SE of Los Angeles.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193


COLORADO
RIVER
AQUEDUCT
VAL VERDE
STREET
ALEXANDER
BROWN
RIDGE
Well
Wells
Gravel Pit
BM 1633
BM 1640
BM 1617
1600
1640
1681
1700
1800
1900
2000
2100
2200
2300
2400
2164
2169
Gaylan Mine
Ida Leona Mine
Rancho Vista Plantation
Santa Rosa Mine
Quarry
ROAD
SP-7,2
20
21
28
29
30
31
32
33
STEELE PEAK
7.5' QUAD.
RIVERSIDE CO.
CAL

WMC - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [X] ASARCO FILE [X] Solicited Submittal

505-881-3050 (Santa Fe/Pacific)

Wanted $200,000 Buy-out

Section I General Indexing

① Name(s) of Property or Area: Secret Pass Project (Santa Fe/Pacific Minerals) Tincup Mine, Union Pass District					② Country: Mohave Co.	③ State or Province: Arizona	
					④ USGS Quad.: Secret Pass 7½	⑤ File or Gore No.	
⑥ Latitude: 35° 07'N	⑦ Longitude: 114° 20'W	⑧ AMS Sheet: Kingman	Township: 20N	Range: 19W	Section: 17 + Vicin	⑨ Examined by: F.R. Koutz	⑩ Date: 2/15+5/4-5
						⑪ Office: Tucson	⑫ Field Days: 3

Section II Sources of Information

(15 mi²) Date Typed 6/25/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Steinpress, M.G., et al	1986-1983	Secret Pass Proj. (SF Min.) + maps	Submittal Data	
Stevens, F.M	1944	Tincup Mine (Secret Pass)	Asarco Union Pass Files	
Durning & Buchanan	1984	Geol.+Ore Deposits-Oatman	AGS Dig. vol.15, p.141-158	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [?] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] RRcheckerbd.

⑮
- [X] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [ ] Prospect
- [$] 1 million spent

"Regional fissure" Cauld. Mg.
- [ ] Geologic Concept
- [X] Geochem Anomaly
- [wk] Geophy Anomaly
- [ ]

⑯ Production 1939-42

Commodity	Tons	Grade
Au Ore (part OP)	42,000(?)	±.32 opt Au
More Previously		

⑰ Reserves [X] Measured w/o [ ] Estimated

Commodity	Tons	Grade
Tincup op 5.6/1	74,000	0.11 .02 c/o
NW Tincup UG	400,000	0.07 .01 c/o
FM area 3/1	108,000	0.053 .02 c/o

⑱ Num. Drill Holes 90+RDH>DDH
Approx Total Footage 32,000'

⑲ Excavations Sev. shallow shafts 100' Diam. open pit + incline

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays ~~Attached~~ 400 + Santa Fe

㉒ [X] Geochem Results ~~Attached~~ to 16 Elements

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au (Ag) (Low As, Sb) Au assoc. with sericite(K_2O zone)

㉔ Ore Minerals-Major: Au (Electrum) Minor: Weak Surface Anomalies (Au-Ag)

㉕ Host Rocks-Major: Rhyol. dikes, Andesite, Granite Minor: peg./aplite, diorite

㉖ Age of Host Rocks: Miocene, Miocene, pЄ, pЄ, pЄ

㉗ Nature of Exposures: E. front of Black Range, 1000' relief, 3000-4000' elev., steep hills-NNW grain. Shallow alluvium in valleys. Grussy weathering pЄ Granite. Volcanics esp. intrusive rhyol. spectacula

㉘ Alteration: Qtz-pyrite-Au vnlts, sericite-minor clay, weak K-spar flooding. Local weak SiO_2 flood. Dissem py + wk chlorite flood.

㉙ Total Extent: 8000'(?) to 1000' wide (?)

㉚ Structure: NW, high angle fissure zones (Cauldron margin?) split & splay to N (& roll to low angles), SW Flank of pЄ granite horst in Miocene volcaniclastics/dikes. E-W to NE cross struct. control mineral.

㉛ Ore Occurrence: Braided fissure zones often associated with rhyolite dikes; wk qtz-pyrite stockwork-fissure vnlts. Multiple dike swarms in district scale fissures. Not massive qtz. veins like Oatman/Gold Road.

㉜ Age of Mineralization: Miocene

㉝ Conclusions & Recommendations: Santa Fe has tested (6 areas) with anomalous surface mineralization & has developed some ±45,000 oz. Au resources in 3 contiguous areas. UG Resource includes 92,000T @0.2 opt 0.1 c/o but predicted ground problems. Typical R.R. follow up of 90' @.6 opt Au in early hole Extensive drilling has eliminated potential for >±50,000 oz. Au (op) & I see no ASARCO-scale targets remaining. 6/87: Fischer-Watt has "daisy-chained" property to International Prospectors LTD (VSE) who will spend $50,000 on 50' center grid drill program for open pit develop. They hope for 370,000T @ 0.15 opt Au (op) ≡ good luck!

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

#295

ER File

ASARCO EXPLORATION RECORD
(Attach Highway-Type Location Map)

FIELD EXAMINATION /X/ LITERATURE SEARCH / /
ASARCO FILE / / SUBMITTAL / /

SECTION 1: GENERAL INDEXING

NAME OF PROPERTY OR AREA:	Oro Fino Placers
MINING DISTRICT:	Oro Fino
COUNTY:	La Paz
STATE OR PROVINCE:	Arizona
LATITUDE:	37°40'
LONGITUDE:	114°20'
FILE:	
AMS SHEET:	Salton Sea
USGS QUADRANGLE:	Middle Camp Mt.
TOWNSHIP:	T4N, R20W
SECTION:	28
EXAMINED BY:	Paul J. Bartos
OFFICE:	RMED
FIELD DAYS:	1
DATE ENTERED:	June 24, 1987

RECEIVED
JUL 2 1987
EXPLORATION DEPARTMENT

SECTION 2: SOURCES OF INFORMATION

REFERENCES:

Keith, S.B., 1978, Index of mining properties in Yuma Co., Arizona: State of Arizona Bur. Geol. & Mineral Tech. Bull. 192.

SECTION 3: APPRAISAL

CONCLUSIONS: Action Now / /; Too Low Grade /X/; Too Small / /; Ownership Problem / /; Access Problem; / /

BASIS: Geologic Concept /X/; Geochemical Anomaly / /; Geophysical Anomaly / /; Other / /

SUPPORT DATA: Spectrographic Analysis Attached / /; Assays Attached / / Geochemical Results Attached / /; Geophysical Results Attached / / Geologic Map Attached / /; Other /X/ Assays, geologic map in Marquitta Pass report.

HISTORY: Producer / /; Past Producer /X/; Prospect / /; Mineral Deposit / /; Mineral Occurrence / /

PRODUCTION (Commodity, Tons, Grade): 6000 oz. Au, 750 oz. Ag

RESERVES (Commodity, Tons, Grade): Measured / /; Estimated / /

NUMBER OF DRILL HOLES: ?

APPROXIMATE TOTAL FOOTAGE: ?

EXCAVATIONS: Many placer piles, some shafts on quartz veins.

SECTION 4: GEOLOGIC DATA

COMMODITY: Placer Au
ORE MINERALS (Major and Minor Au°, quartz
HOST ROCKS (Major and Minor): gravels quartz monzonite
AGES OF HOST ROCKS: Quaternary Cretaceous?
NATURE OF EXPOSURES: Steep mountains and covered washes
ALTERATION: Small selvages on bull quartz veins
TOTAL EXTENT OF ALTERATION: Minimal
STRUCTURE: Quartz veins and shears ENE-trending, steeply dipping
ORE OCCURRENCE: Erratic pods in 1 to 5-ft.-thick bull qtz veins
AGE OF MINERALIZATION: ?
CONCLUSIONS AND RECOMMENDATIONS: The exposures north of the Oro Fino placer camp were examined in an attempt to determine the source of the coarse gold (which suggested a proximal source). Sampling (sample descriptions and assays [MP-42 to MP-53] and geologic map in Marquitta Pass report) suggested that the gold was confined to the bull quartz veins. There does not appear to be any potential for wallrock dispersion or stockwork zones in this area. The veins themselves are not of exploration interest (too thin, very erratic values and generally, too low grade).

AUTHOR'S SIGNATURE: Paul J Barton

DATE: June 24, 1987

ASARCO

Southwestern Exploration Division

June 16, 1987

FILE NOTE

Copper Bottom
La Cholla Mining District
La Paz County, Arizona

In reference to P.J. Bartos' Exploration Record Sheet of June 11, 1987, I would add the following to his Conclusions and Recommendations:

1. The four anomalous samples (CB-32, 33, 34, 35) all are on or near the hematite-stained Cunningham Mountain Fault (CMF), a 30° or less SE dipping, detachment style fault.

2. The three anomalous samples (CB-24, 28, 29) lie on or near the northwest trending, unnamed, fault which offsets rock units and probably also the Cunningham Mountain fault. Thus implying mineralization post the faulting of the CMF and the unnamed fault.

3. The anomalous "hanging wall" samples CB-11, 12, 14, 18, and possibly CB-9, 16, 17, 21, located in and around the old mine workings, are 2000 to 3500 feet away from the anomalous trace of the Cunningham Mountain Fault.

4. Thus, if the overturned fold-axis in the Copper Bottom Mine area reflects a shear zone control (see P.J. Bartos' "Structure" paragraph) which intercepts the flattish CMF, then a better prepared structural intersection may host improved ore grades. The tourmaline enriched and pyritic samples in the hanging wall exposures may indicate a halo relationship to gold mineralization as such features do across the river at Tumco, California. The reported production of 100 tons of 1.6 oz./ton gold certainly suggests some economic pods in the hanging wall units.

5. Yes, even the old-timers who dug the pits and tunnels found the area intriquing--and so with us.

James D. Sell

James D. Sell

JDS:mek

cc: P.J. Bartos
W.L. Kurtz
Copper Bottom ERS

ASARCO EXPLORATION RECORD
(Attach Highway-Type Location Map)

FIELD EXAMINATION /X/ LITERATURE SEARCH / /
ASARCO FILE / / SUBMITTAL / /

SECTION 1: GENERAL INDEXING

NAME OF PROPERTY OR AREA: Copper Bottom
MINING DISTRICT: La Cholla
COUNTY: La Paz
STATE OR PROVINCE: Arizona
LATITUDE: 33°35'
LONGITUDE: 114°20'
FILE:
AMS SHEET: Salton Sea
USGS QUADRANGLE: Cunningham Mtn. 7½
TOWNSHIP: T3N, R20W
SECTION: 28
EXAMINED BY: Paul J. Bartos
OFFICE: RMED
FIELD DAYS: 2
DATE ENTERED: June 11, 1987

RECEIVED
JUN 15 1987
EXPLORATION DEPARTMENT

SECTION 2: SOURCES OF INFORMATION

REFERENCES:

Marshak, S., 1980, A preliminary study of Mesozoic geology in the southern Dome Rock Mountains, southwestern Arizona: Arizona Geol. Soc. Digest, v. 12, p. 123-133.

SECTION 3: APPRAISAL

CONCLUSIONS: Action Now / /; Too Low Grade /X/; Too Small / /;
Ownership Problem / /; Access Problem; / /
BASIS: Geologic Concept /X/; Geochemical Anomaly / /;
Geophysical Anomaly / /; Other / /
SUPPORT DATA: Spectrographic Analysis Attached / /; Assays Attached /X/
Geochemical Results Attached / /; Geophysical Results Attached / /
Geologic Map Attached /X/; Other / /
HISTORY: Producer / /; Past Producer /X/; Prospect / /;
Mineral Deposit / /; Mineral Occurrence / /
PRODUCTION (Commodity, Tons, Grade): 100 tons, 19% Cu, 1.6 oz/T Au, 27 oz/T Ag
not more in 1513 samples
RESERVES (Commodity, Tons, Grade): Measured / /; Estimated / /
NUMBER OF DRILL HOLES: 0
APPROXIMATE TOTAL FOOTAGE: 0
EXCAVATIONS: Several tunnels and shafts on property

SECTION 4: GEOLOGIC DATA

COMMODITY: Au, Ag, Cu
ORE MINERALS (Major and Minor): quartz, tetrahedrite, native Au
HOST ROCKS (Major and Minor): Calcareous quartz sandstone interbedded with phylite
AGES OF HOST ROCKS: Mesozoic
NATURE OF EXPOSURES: Steep cliff face. Major NW left lateral fault, poorly exposed in wash.
ALTERATION: Minimal (Qtz veins in qtzite w/ little or no selvages).
TOTAL EXTENT OF ALTERATION: ---
STRUCTURE: Veins localized by a pair of overturned synclines. Major left-lateral strike-slip fault occurs in area. Detachment fault underlies the mine at shallow depth.
ORE OCCURRENCE: Ore occurs as a series of qtz-tourmaline ± bn calcite veins perpendicular to bedding.
AGE OF MINERALIZATION: ?
CONCLUSIONS AND RECOMMENDATIONS:

Copper Bottom consists of a series of metamorphic(?) quartz-tourmaline veins perpendicular to bedding in quartzite. The veins die out in the interbedded phyllites. Crude channel samples of veins and wallrock contain scattered anomalies of As, Sb, Te, and rarely Mo and Ag but NO Au. The anomalies are not particularly consistent and they typically occur on developed workings or associated with locally occurring Cu-oxides. A detachment fault occurs at shallow depth beneath the metamorphic veins. A hematized portion of the detachment is anomalous in As, but overall the detachment does not look like a particularly favorable structure. Although intruiging, I do not believe any further work in Copper Bottom is warranted.

AUTHOR'S SIGNATURE: Paul J Bartos
DATE: June 11, 1987

GEOCHEMICAL SERVICES INC.

GEOCHEMICAL ANALYSIS REPORT

LOT ID: ASC-70319D

Ag>1 As>10 Hg>1 Sb>10 Te>1

SAMPLE ID	#	Ag ppm	As ppm	Au ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Tl ppm	Zn ppm	Bi ppm	Cd ppm	Ga ppm	Pd ppm	Pt ppm	Se ppm	Sn ppm	Te ppm
CB 1	14	.106	<1.30	.003	14.1	<.09	1.31	31.8	1.07	<.45	4.24	<.225	<.249	<.45	<.09	<.225	<.901	<.45	<.45
CB 2	15	.100	<.963	.003	28.5	<.096	1.04	1.90	3.60	<.482	4.71	<.241	<.241	<.482	<.096	<.241	<.963	.507	<.482
CB 3	16	.110	<1.12	.003	10.8	.140	1.39	1.02	2.81	<.433	4.06	<.217	<.217	<.433	<.087	<.217	<.867	.456	<.433
CB 4	17	.087	<2.03	.003	16.2	<.093	1.35	.852	3.86	<.467	3.93	<.234	<.234	<.467	<.093	<.234	<1.31	.469	<.467
CB 5	18	.097	1.26	.003	23.6	<.087	1.14	.691	3.94	<.435	4.29	<.217	<.217	<.435	<.087	<.217	<1.74	<.435	<.435
CB 6	19	.038	1.47	.003	60.6	.217	.845	1.18	1.71	<.462	18.2	<.231	<.231	<.462	<.092	<.231	<1.93	.516	<.462
CB 7	20	.228	<.862	.002	5.49	<.086	.525	1.11	.453	<.431	3.92	<.216	<.216	<.431	<.086	<.216	<.862	<.431	<.431
CB 8	21	.071	4.67	.003	8.44	.139	3.90	3.65	1.20	<.484	21.5	<.242	.311	<.484	<.097	<.242	<1.64	<.484	<.484
CB 9	22	.09	1.65	.003	151.	.105	3.28	2.58	1.20	<.454	7.20	.664	<.227	<.454	<.091	<.227	<.907	<.454	.483
CB 10	23	.071	6.09	.003	40.6	.092	2.13	6.85	4.44	<.453	28.3	.386	.352	<.453	<.091	<.226	<1.93	<.453	<.453
CB 11	24	.932	298.	.024	3973	19.3	3.33	3.04	1167	<.441	419.	<.22	5.53	<.441	<.088	<.22	<.999	<.441	<.441
CB 12	25	.098	8.57	.003	86.0	.363	2.10	1.25	30.1	<.436	32.8	<.218	.256	<.436	<.087	<.218	<1.52	<.436	<.436
CB 13	26	.026	1.25	.003	8.83	<.084	.416	3.29	3.33	<.422	41.2	<.211	<.311	<.422	<.084	<.211	<1.37	.500	<.422
CB 14	27	.118	6.53	.003	88.4	.169	1.64	.915	12.0	<.447	11.1	<.224	<.224	<.447	<.089	<.224	<2.91	<.447	<.447
CB 15	28	.065	3.34	.005	64.5	<.087	1.44	.840	2.34	<.433	8.27	.266	<.217	<.433	<.087	<.217	<.867	.485	<.433
CB 16	29	.067	1.55	.005	116.	<.095	.339	1.27	1.34	<.475	22.3	.295	.416	<.475	<.095	<.238	<2.07	<.475	<.475
CB 17	30	.144	2.98	.002	147.	<.092	2.08	1.16	5.78	<.461	5.90	<.231	.370	<.461	<.092	<.231	<.923	.470	<.461

2741 Toledo Street Suite 211 • Torrance, California 90503 • Telephone 213/320-3680
55 Glen Carran Circle • Sparks, Nevada 89431 • Telephone 702/359-6600

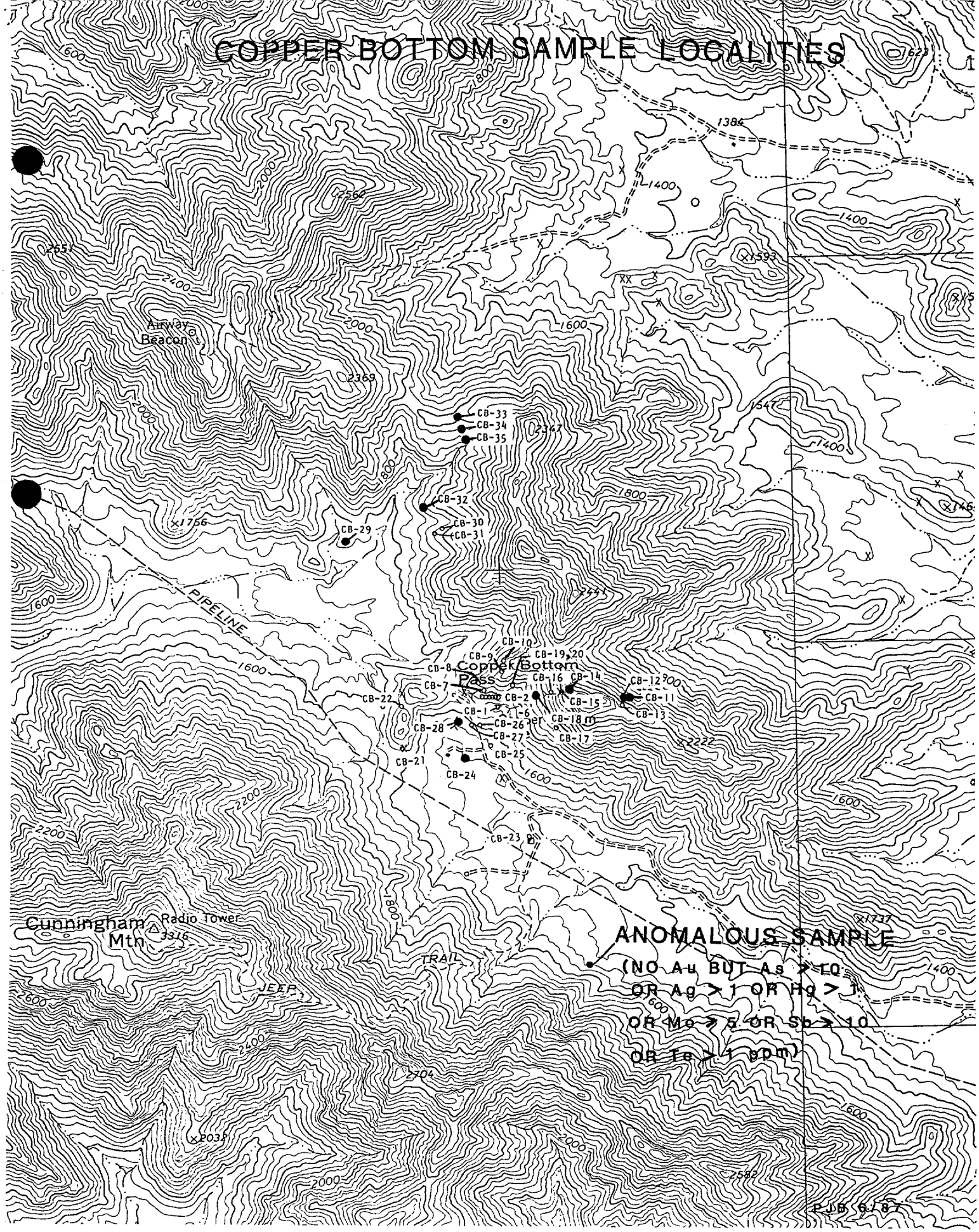
GEOCHEMICAL SERVICES INC.

GEOCHEMICAL ANALYSIS REPORT

LOT ID: ASC-70319D

SAMPLE ID	#	Ag ppm	As ppm	Au ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Tl ppm	Zn ppm	Bi ppm	Cd ppm	Ga ppm	Pd ppm	Pt ppm	Se ppm	Sn ppm	Te ppm
CB 18	31	.463	16.7	.004	206.	.171	2.24	14.8	52.2	<.461	75.5	<.231	1.19	<.461	<.092	<.231	<1.07	<.461	1.45
CB 19	32	.136	2.78	.003	95.3	<.087	2.38	2.65	3.55	<.433	5.61	<.216	.340	<.433	<.087	<.216	<.865	.595	<.433
CB 20	33	<.024	<1.17	.003	14.3	<.095	.176	1.96	<.238	<.476	23.9	<.238	<.238	<.476	<.095	<.238	<.952	<.476	<.476
CB 21	34	.049	4.95	.017	3.35	.156	1.70	35.7	<.233	<.466	8.94	.337	.819	<.466	<.093	<.233	<1.33	<.466	8.84
CB 22	35	.066	<.967	.003	5.20	.130	.851	13.9	<.242	<.484	6.57	.717	.985	<.484	<.097	<.242	<1.50	<.484	.696
CB 23	36	.028	.876	.003	7.03	<.084	2.73	5.97	1.38	<.419	8.22	<.21	.283	<.419	<.084	<.21	<1.13	<.419	<.419
CB 24	37	<.022	9.17	.004	42.2	.188	38.3	9.10	3.82	<.43	34.2	97.3	.352	<.43	<.086	<.215	12.4	<.43	47.2
CB 25	38	.143	2.70	.004	60.2	<.095	1.76	6.24	7.65	<.475	6.94	.646	.505	<.475	<.095	<.238	<.987	<.475	<.475
CB 26	39	.084	1.69	.003	33.9	<.088	2.13	2.26	3.21	<.438	6.73	4.62	<.219	<.438	<.088	<.219	<1.12	.572	.557
CB 27	40	.082	<1.06	.003	4.41	<.107	.558	2.65	<.231	<.461	22.4	<.231	.303	<.461	<.092	<.231	<1.38	<.461	<.461
CB 28	41	2.14	9.48	.01	11.7K	10.6	11.0	75.8	8.29	<.488	12.7	1.67	.674	<.488	<.098	<.244	<.984	<.488	<.488
CB 29	42	.100	78.8	.002	96.6	.132	4.35	20.7	<.235	<.47	83.6	.356	.465	2.16	<.094	<.235	<1.39	.569	<.47
CB 30	43	<.023	2.35	.002	22.3	<.091	2.09	3.67	<.229	<.457	5.65	<.229	.256	<.457	<.091	<.229	<.970	.467	<.457
CB 31	44	<.023	5.90	.003	5.17	<.092	<.092	3.58	<.231	<.461	16.0	<.231	.235	<.461	<.092	<.231	<1.90	<.461	<.461
CB 32	45	.026	27.3	.004	70.5	<.094	.953	3.30	<.235	<.471	109.	.241	.345	5.26	<.094	<.235	<1.34	<.471	<.471
CB 33	46	.032	27.8	.003	65.2	<.085	1.58	3.58	<.212	<.423	123.	<.212	.381	5.04	<.085	<.212	<.846	<.423	<.423
CB 34	47	.053	36.0	.004	83.6	<.088	4.47	4.37	<.240	<.44	144.	<.22	.454	6.40	<.088	<.22	<1.76	<.44	<.44
CB 35	48	.057	48.9	.004	126.	<.09	2.34	3.67	<.261	<.448	189.	<.224	.435	9.68	<.09	<.224	<1.10	<.448	<.448

COPPER BOTTOM SAMPLE LOCALITIES



Copper Bottom
La Paz County, Arizona
Sample Description

CB-1 Qtz-tourmaline veins in white bleached(?) qtzite. Veins 1-4" across, strike 340, (NNW) 85°, sample approx. 15', includes wallrock and veins. Vein zone (higher up hill approx. 60' wide). This appears to be hanging wall of Copper Basin Mine.

CB-2 Same as CB-1, approx. 10' channel sample of veins and qtzite wallrock, approx. 25% qtz vein.

CB-3 Same as CB-1, approx. 20' channel sample of qtz-tourm veins and qtz wallrock.

CB-4 Approx. 30' channel sample of qtz-tour veins (1-6") and white qtzite wall, tourmaline principally restricted to vein-wallrock contact.

CB-5 Same as CB-4 (behind small ridge), approx. 30 ft. of vein zone. Samples started east and in qtzite are working west.

CB-6 Slightly lower, approx. 20 channel sample of tourmaline bearing, pyritized schist, poorly exposed, mostly covered by talus below qtzite, more or less below sample CB-5, contact: 31S, 45N. Veins pinch down in the phyllite.

CB-7 Brecciated, sheared qtzite, no qtz veinfilling, zone of shearing (multiple directions) approx. 30'.

CB-8 Irregular qtz-brown calcite-tourmaline vein pod in sericite-tourmaline-pyrite phyllite and qtzitic ss. Vein pod essentially restricted to coarser grained qtzitic ss.

CB-9 White qtz stockwork zone at qtzite-phyllite (w/ large py cubes up to 3/4") contact, veins tend to strike 350° -- some veins clearly // to bedding. Most veins die upon reaching the phyllite.

CB-10 Qtz-(brn cal)-tour stockwork in qtzitic-muscovite tourmaline ss.

CB-11 Qtz vein stockwork in white qtzite. Local amounts of Cu-oxide veins approx. 2-3 per foot. Veins (1/2-3") are perpendicular to bedding. Phyllite below qtzite has only minimal veins. It appears that the qtz veins are "metamorphic segregations" from the ss bed. Strike of bed: 240, 24S. Veins have same strike (approx. vertical dip).

CB-12 Contact between qtz-tour-(brn calc) veined qtzite and weakly pyritized phyllite which has a feq qtz vnlts. Sample approx. 50% of each rock type.

CB-13 Grey phyllite above qtzite, sericite py casts (3-5%), essentially no qtz veining.

CB-14 Qtz-tourmaline vein in qtzite. Again underlying phyllite is qtz vnlt free (but does have pyrite). Sample is of veins and wallrock, approx. 10 ft. channel sample.

CB-15 Light tan qtzite cut by qtz-tour-bn cal vnlts.

CB-16 Pyritized (5%) sericite phyllite adjacent to vein adit sunk on 2-3' qtz-bn calc, CuOx stained vein in qtzite. Bornite-chalcocite seen in vein frags.

CB-17 Qtz-tourmaline-bn cal veins in white qtzite.

CB-18 Qtz-tour vein zone in qtzite, approx. 10' channel sample, 30% vein, 70% wallrock.

CB-19 Qtz-tour vein zone through white qtzite.

CB-20 Grey sericitic phyllite underlying qtzite, tr. py casts, no

qtz veining.

CB-21 Prospect pit: irregular "pegmatite" qtz-bn calc-tour vein in muscovite-tourmaline schist. Sample is approx. 50% vein, 50% wallrock.

CB-22 40' zone of white qtz-calcite veining. Anastomosing veins, very little wallrock.

CB-23 Qtzite w/ weak patchy hematite staining.

CB-24 Qtzite cut by white qtz-brn calcite vnlts (2-3" thick), 1 vein per yard sample across 10 ft.

CB-25 Massive qtz vein up to 10' wide in tan qtzite, sample taken of a 50' diameter.

CB-26 Tan qtzite cut by 1' qtz vnlts w/ tour, 1 vein per 4', approx. 30 ft. channel sample.

CB-27 Grey sericite phyllite, 2-3% py casts, approx. 20' beneath qtz veined qtzite. Phyllite cut by rare 1-2" qtz-tourmaline veins sub// to bedding. Qtzite cut by many qtz veins perpendicular to bedding.

CB-28 Qtzite cut by abundant stockwork qtz veins & vnlts, patch CuOx (malachite) seen.

CB-29 Fe-stained phyllite cut by thin qtz vnlts.

CB-30 1-2" qtz veins in qtzite, 1 vein per foot.

CB-31 Schist associated w/ Cunningham Mt. (detachment?) fault. Silver grey, near phyllitic. Does not appear to be altered.

CB-32 Slightly Fe-stained (hem) schist w/in detachment fault? caused by 1% fine py cubes.

CB-33 Red and green schist, stockwork bleached zone. Strong red hem anomaly approx. 100 ft. wide.

CB-34 Strongly hematized schist (hem)10%), bleached stockwork, zone approx. 70' across.

CB-35 Hematite stained schist. Hematite zone strikes 337°, oblique to schistosity.

Summary of Cunninham Mt. (detachment?) fault -- not a whole lot to be seen. Difficult to state exactly where the fault is (just that it's probably within a schist zone). Schist doesn't look particularly brecciated or altered. I suspect it would be a poor ore hosting structure (but this is based on a limited traverse).

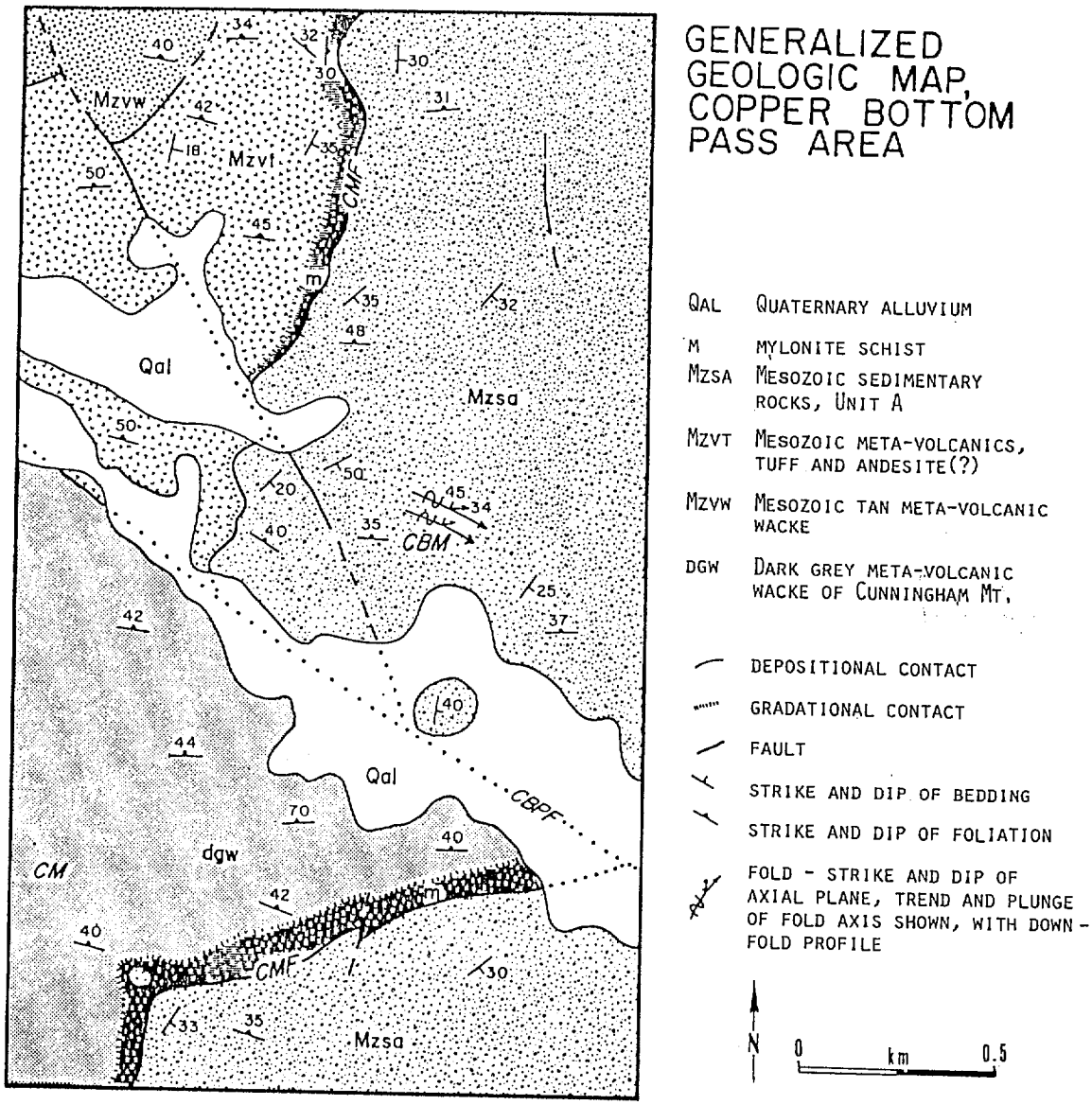
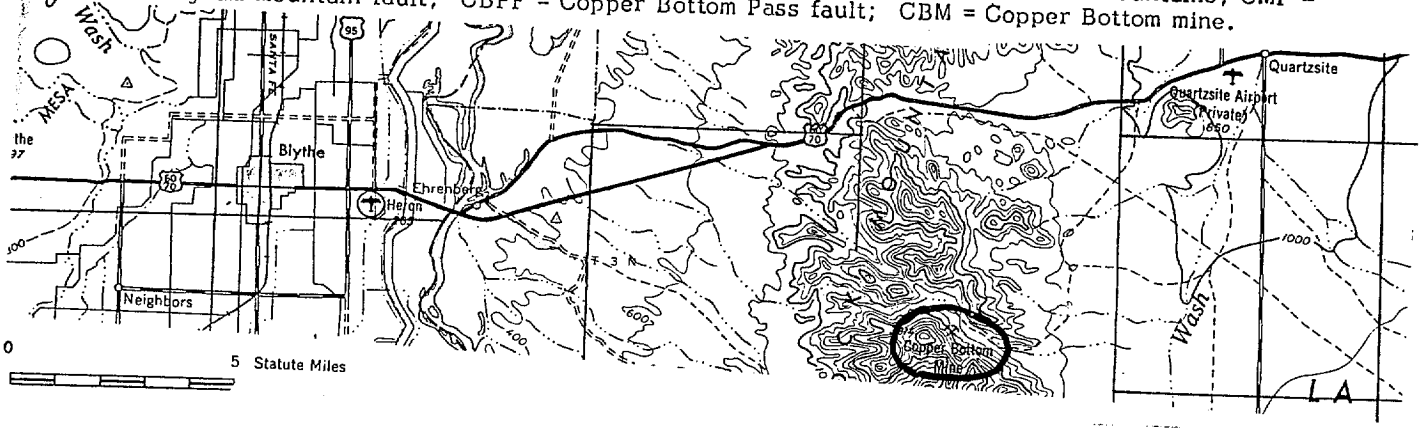


Fig. 4. Generalized geologic map of the Copper Bottom Pass area, Dome Rock Mountains, CMF = Cunningham Mountain fault; CBPF = Copper Bottom Pass fault; CBM = Copper Bottom mine.



WVK-ERS File

Wm Vanderwall: Mgr.-Geol.
602-754-4481

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [ ] 7 Pat. Claims

(Unpat): Gold Bug=Ivy Minerals
Mohave = Kunke

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Gold Bug Mine and (Mohave Mine)	Mohave Co.	Arizona
	④ USGS Quad. MT. Perkins 15'	⑤ File or Core No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
35°41'N	114'' 35'W	Kingman	27N	21W	4	F.R. Koutz	2/9 & 5/7
						⑪ Office Tucson	⑫ Field Days 5 hours

Section II Sources of Information

Date Typed 6/9/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Asarco Files	1932-40	Mohave Mining Co. (Gold Bug & Mohave Mines)		
Gardner, E.D.	1936	Gold Mining & Mill.Black Mts.	USBM IC 6901	p. 56.

Section III Appraisal

This does not appear to be a tax etc. scam.

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Visit UG

⑮

- [X] Post Producer
- [?] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [X] Silica Flux
- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
1890's	50+800	43.+1.25 opt Au
1931-32	5+205	3.5+(.7-1¼)
1939	19	0.7 opt Au

⑰ Reserves (UG) Ivy Minerals Data

[?] Measured [ ] Estimated

Commodity	Tons	Grade
Direct Ship.		
to 200'	300T	±4.0 opt Au
to 400'	±5000T	±1.0 opt Au

⑱ Num. Drill Holes Numerous
Approx Total Footage ?50+

⑲ Excavations GB shaft=512' +2300' UG
Mohave sh.(2) ±120'

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au (Ag-fair amount;Ag>Au in opt)

㉔ Ore Minerals-Major: Au (oxidized to 250-290' pyrite Minor vanadinite galena

㉕ Host Rocks-Major: Gr-Dior gn+shists peg+aplite Db±felsite Minor Andesites-rare

㉖ Age of Host Rocks: pЄ pЄ pЄ or m-T? - dikes in foliation m-T(upper plate)

㉗ Nature of Exposures: Good: Low rolling hills + desert pediment, 4-500' relief, vein open cut plus trenched/Dozed. Local slump + landslide in schists. Weak NE color anomaly.

㉘ Alteration: Qtz-calc-barite±Bx vein filling/local Epidote, chl + adularia . Hem/goeth (pyrite) halo to vein.

㉙ Total Extent: 500-800'? on vein - Multiple veins in area

㉚ Structure: ENE VN,& ±80 Ndip. Cut ± offset by cross faults. Vein locally Bx'd -cockscomb qtz. At least 3 shoots braid through fissure. Mohave: N70E,70°S vn + N70W70°S schist

㉛ Ore Occurrence: Qtz vn on Fw or Hw of struct. (Best values)Diorite on FW(s-side). Best Au values (VG) in hem. -Filled vugs in shattered Qtz vn. Pyrite + galena comes in below 300' level but Au grade drops off.

㉜ Age of Mineralization: Mid-Tert.(?)

㉝ Conclusions & Recommendations: Narrow, spotty, local high-grade shoots offset by cross faults= difficult mining. Ivy drilled out with close-spaced, fanned, Trak-drill/some short DDH+UG sampling. Shaft reopened to 250' level + some planned DDH to find vn. offsets to NE. Of main interest as root-feeder zones of low angle listric zones(Scientific) & as smelter feed. Ivy is collecting mill parts from White Hills, etc. + may build mill when (& if) direct-ship payback. Ivy ready to break ore/ June 87). Lower part of shaft needs mucked out. Lower angle vein joins high angle vein at ±300 level. Shaft was previously resunk on lower angle/more productive vein

(For additional space use extra sheets)

WKR-ER

ASARCO EXPLORATION RECORD

Solicited submittal
R. Corn - R. Ahern
(J.D. Loghry, promotor)

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

59 GB claims (#32-90)

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Cyclopic Mine Area (Ex-U.S. Borax Ground SW of Cyclopic Zone)	Mohave Co.	Arizona
	④ USGS Quad. Senator + Garnet Mts.	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
35°47'N	114°15'W	Kingman	28N	19W 18W	24,25 30,31	F.R.Koutz	3-5-87
						⑪ Office Tucson	⑫ Field Days ±7

Section II Sources of Information

Date Typed 6-3-87

⑬ References

Author	Date	Title	Publications	Vol. No.
R.Corn/R.Ahren	1984	Gold Basin Data Package (maps, assays, short report)		
Myers, T.A. et al	1986	Control Au Min. at Cyclopic Mine	Econ.Geol.	v.81,p.1553-57
Blacet, P.M.	1975	Geol.Map Garnet Mtn. Quad.	USGS OF Map 75-93	1:48,000

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] High w/o

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

Stacked listric low-angle Faults
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [X] Cyclopic Ext.

⑯ Production

Commodity	Tons	Grade
Au(Red Cloud)	±500?	±.3 opt Au
Cyclopic-Fry	60,000	0.35 opt Au

⑰ Reserves See AZ Dept Min.Res.Files-Phx

2-3 Measured [1] Estimated - Potential

	Commodity	Tons	Grade
1	Au(GB clms)*	1/3-2 m.t.	.02-.04 opt
2	prob. (poss)	300,000(5m.t.)	.15(.05)incl
3	Cyclopic	67,000T	.28 opt Au

⑱ Num. Drill Holes 16*
Approx Total Footage 5645*

⑲ Excavations Numerous-shallow ¼mi. of O.P. on Cyclopic

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached 90 soil 10 rock

㉒ [X] Geochem Results Attached U.S.Borax Data 10 elements

TAJ-482

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au (anom: Pb,Cu,Zn,Mo,Ag,F,Ba,Hg,W)

㉔ Ore Minerals-Major: Au (pyrite-now hem-goeth) Minor: T cpy- $CuCO_3$

㉕ Host Rocks-Major: Gr-Grd gneiss 2mica-Gran. Fanglomerate Minor: Tuff (in fanglomerate)

㉖ Age of Host Rocks: 1.6-1.7 by 72 m.y. Mid-Miocene Mid-Miocene

㉗ Nature of Exposures: Fair: Rolling, weathered Grussy hills, 500' relief, 4600' elev. Thin Qal in valleys. Local thick soil development (mostly eolian silts).

㉘ Alteration: Silica-sericite flooding in breccia/structure. Wk to mod. chl(±epid-Kfs-calc) after mafics. Siderite-calcite microvnlts. Local clay

㉙ Total Extent: 4+mi. NWx½ mi.wide(sampled 3000'N-Sx800'E-W)

㉚ Structure: Stacked listric-detach.faults w/higher angle antithetic offsets & feeders. NW strike, some NE cross structure. NW-synformal warp localizes Cyclopic-enhances enrichment/placer.

㉛ Ore Occurrence: Au with pyrite (hem.-goeth) in brecciated milky Qtz-jasperoid. High angle feeder zones better mineralized than low angle zones. Prob. only shallow synformal zones with enrichment have hope of future production.

㉜ Age of Mineralization: M-Tert (maybe remobilized Cretaceous?)

㉝ Conclusions & Recommendations: Sampled area W/2 Sec.24,T28N,R19W is only area on Loghry property that has not been at least initially tested by drilling or extensive sampling. Item 18 RDH limit potential to Item 17-1 Reserves. Although a number of +1ppm Au & other elemental anom. occur over drilled zone these die with depth. Only 25' of 5645'RDH was >1ppm & 125' >.3ppm. FRK soil sample results show area 700'NEx350'NW with 15 values 27ppb av.(7-60ppb) assoc. with siderite veinlets. This is not good enough for further work. Fry-Cyclopic area on Saratoga Mines ground & partially drilled (Item 17-2&3 above). Data should be obtained for the record.

(For additional space use extra sheets)

WAK-ER File

ASARCO EXPLORATION RECORD

Present claim owner
Chuck & Margie Kunkes
Box 1652
Dolan Springs, AZ 86441
602-767-3831

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Gold Bug Dist.

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
LIBERTY MINE (Golden Age - 1936)	Mohave Co.	Arizona
	④ USGS Quad. Mt. Perkins -15'	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
35°42'N	114°32'N	Kingman	27N	21W	32, 33	F.R.Koutz	5/7/87
						⑪ Office: Tucson	⑫ Field Days: 6 hours

Section II Sources of Information

Date Typed 6/1/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Wilkens, J.	1984	Arizona Geol.Soc.Fall Field Trip Guidebook (Day 1 +1979 Map)		
Gardner, E.D.	1936	Au Mine + Mill, Black Mtns.	USGM IC 6901 p. 57	
Fischer-Watt Gold + AZ Star Res.(Prospectus 6/30/86) Van Deemen Property 1 mi.NW				
USGS PP-374E, 1963 C.R. Longwell				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [?] Too Low Grade
- [?] Too Small/Spotty
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Obtain Drill Data

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [X] Freeport-Reno Drilled 1985

- [X] Detachment + Listric Fits
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [?] Relict Potent. in District

⑯ Production

Commodity	Tons	Grade
Au ore	X00	.X opt

⑰ Reserves

[ ] Measured Commodity	[ ] Estimated Tons	Grade
None		

⑱ Num. Drill Holes 22+ (?)
Approx Total Footage (4000'±?)

⑲ Excavations Sev. shafts to 100' ~1000' Workings

⑳ [ ] Spectro. Analysis Attached

㉑ [16] Assays Attached TAJ-481

㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au°-Ag (Reported As+Mo anomal.)

㉔ Ore Minerals-Major Au-Ag Minor Py Tcpy-CuOx Minor

㉕ Host Rocks-Major Qtz-Mus-schist gr-gneiss diorite sch Minor felsic/mafic dikes to N. Patsy Mine Volc.

㉖ Age of Host Rocks pЄ +pegs(pЄ) pЄ mT? 18.6 - 14.5 m.y.

㉗ Nature of Exposures Good: Desert pediment + low hills, fair to good outcrop (schist is slumped). 200-400' relief. Pegmatites plus felsic and mafic dikes locally lace area

㉘ Alteration Bleaching-sericite plus hematitic flooding-silicification along structures Much of mafics locally chloritized

㉙ Total Extent Hvy color anom: 2:800'x500', mod color anom. Halo ¼x1½mile.

㉚ Structure WNW to NNW 10 to 30° NE low angle shears (detachment-related) with NW & ±NE high angle listric normal faults. Foliation in schist rolls alot.

㉛ Ore Occurrence In low angle struct. plus intersecting/feeding higher angle struct. Heavy bleaching/hem. flooding usually limited to <10' structure. Spotty. Best Freeport results: 5-10' of 0.1 opt Au in a few D.H.

㉜ Age of Mineralization post 14.5my, pre 11.9 my (faulting)

㉝ Conclusions & Recommendations A short distance into footwall of listric fault system. Not as well developed as VanDeemen. Considerable areas of fresh-looking schist/gneiss between shear zones are probably waste. Low angle/high angle shears may coalesce at shallow depth but mostly stacked listric-normal faults in Dist. rather than master detachment. Worth obtaining Freeport's sampling/drill data plus Kunkes has other zones in district not held by Fischer-Watt. "1936, USBM: 1-6' 25° vein: av. 3', ore bunchy, 125' drift in vein-small shipments" Au values drop sharply below oxidiz. zone (±100' depth).

(For additional space use extra sheets)

Form Revised June 1980-J.H.C. MVK-5193

WK-ER FILE

Solicited submittal:
Crown Resources (Sutton)
820 Sixteenth St., Suite 415
Denver CO 80202

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [X] ASARCO FILE [X] _____

Brad Peck, Sr. Geol. 303-534-2110

Section I General Indexing

① Name(s) of Property or Area: Mossback Property (Moss Mine included) (Ground from Arabian to Gold Road) 260 claims			② County: Mohave County			③ State or Province: Arizona	
			④ USGS Quad.: Moss Mine etc. 7½'			⑤ File or Gore No.	
⑥ Latitude: 35°7'N	⑦ Longitude: 114°25'W	⑧ AMS Sheet: Kingman	Township: 20N 21N	Range: 20W	Section: Many	⑨ Examined by: F.R.Koutz	⑩ Date: Feb/May'87
						⑪ Office: SWED Tucson	⑫ Field Days: 4

Section II Sources of Information

Date Typed 5/9/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Peck, Grisham et al	1980-86	Submittal data: Houston Oil & Minerals, Meridian, Crown Res.		
Thorson, J.P.	1971	Ign. Petrol. Oatman Dist.	PhD Diss. UCSB, 189 p.	
Lausen, C.	1931	Geol.& Ore Deposits, Oatman Dist.	AZBuMines Bull.131	126 pg.

Section III Appraisal

Ransome(1923) USGS Bulletin 743, Clifton et al(1980) AIME Preprint 80-143.

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Visit Moss M.

⑮
- [X] Past Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

epiclastic
- [X] host Dissem.
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [X] Hot Springs

⑯ Production Mossback-NY veins

Commodity	Tons	Grade
Au ore	X,000?	.2-.3 opt Au
Moss Mine	30,000 oz Au	(UG)pre 1930

⑰ Reserves
- [ ] Measured
- [X] Estimated

Crown Res: Nil *(in above)

Commodity	Tons	Grade
Moss Mine	500,000T	0.06 opt Au
Moss Mine*	90,000T	0.13 opt Au

⑱ Num. Drill Holes 28+
Approx Total Footage 8700'

⑲ Excavations Mossback-NY Mines
Numerous pits

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays ~~Attached~~ Meridian-Crown 28 RDH sets

㉒ [X] Geochem Results ~~Attached~~ 900+

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au>>Ag mod. Hg anomalies

㉔ Ore Minerals-Major: Au; Minor: T CuOx

㉕ Host Rocks-Major: Oatman Lat; Gold Road Lat; Moss Porp.; Minor: Rhyol-Lat.dikes; Alcyone Trachye

㉖ Age of Host Rocks: Micoene; 18.2 m.y.; "10.4m.y."(?); <18 m.y.; ±25 m.y.

㉗ Nature of Exposures: Fair, on W.Flank Black Mtns. pediment surface. 2000-3000' elev. 400' relief in main area. Local thin alluvial/gravel cover.

㉘ Alteration: Local strong dissem. pyrite,clay,silica. Siliceous sinter,jarosite ± alunite,dissem.pyrite Widespread bleaching (illite) SE edge of Moss porp.

㉙ Total Extent: 5 mi x 3 mi - ±

㉚ Structure: Eastern Rim of nested cauldron margin to resurgent dome/intrusive. NW to NNW faults-veins, loc. NE faults veins often brecciated. Moss vein is E-W (cont. pg.2)

㉛ Ore Occurrence: Quartz-calcite (±adularia±CaF_2) veins. Local stockwork calcite>quartz vnlts. Heavily pyritized epiclastic shale-ss has weak anomalous Au(.0X ppm). Local mod. Hg anomal. have nil-trace Au-Ag

㉜ Age of Mineralization: Miocene

㉝ Conclusions & Recommendations: Vein breccia systems lacing claims show sev. ppm Au in surf. cut but only local +1 ppm Au @ depth. Lateral dissemin. in epiclastic seds. very weak. Little chance of developing significant bulk tonnage target in this part of district. However the Moss Mine at faulted edge of Moss porphyry shows strongly silicif. veins and is "discovery" gold boulder (1864) locality of district. There is 30-50,000 oz.Au (op) potential here, partially confirmed by drilling/UG sampling. Worth a tour UG/review data when Earl Harrison's shaft is (cont. page 2)

(For additional space use extra sheets)

30. Structure: structure with N-S offset faults.

33. Conclusions & Recommendations: refurbished. Crown Resources ground (ex-1200 HIMCO claims) of negligible value. Some additional recon. sampling in illitic Halo of Moss porphyry justified.

WAK-ERS

ASARCO EXPLORATION RECORD

J.F. Span
Box 325
Wickenburg, AZ 85358
Submittal
391-3350

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE None [X] Submittal

Section I General Indexing Sec.15,22 State Sections--JF Span has 200+200 acres Prospect./Min.Lease

① Name(s) of Property or Area	② Country	③ State or Province
Big Hill Mine (Date Mining District) Arizona Gold Aster	Yavapai	Arizona
④ USGS Quad. Date 7½''	⑤ File or Gore No.	

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°18'N	112°58'N	Prescott	11N	7W	15,22	F.R.Koutz	4/28/87
						⑪ Office: Tucson	⑫ Field Days: 3 hrs.

Section II Sources of Information Date Typed 5/7/87

⑬ References

Author	Date	Title	Publications	Vol. No.
W.D.Rawson	3/23/40	"Mine Owners Report" (AZ Dept Min.Res.File)+J.F.Span Assays		(6)
AZ Bur. Mines	1958	Geol. Map Yavapai Co.		

3 mi. W of US 89 & S.F.R.R. "OX" Ranch surface grazing lease. Underlying owner: Henry Shepard, Box 649, Congress 85332

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] State Land

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ] (1927-1936?)
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
"Au-ore"	maybe XooT	0.X opt Au

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 0
Approx Total Footage 0

⑲ Excavations "3000 Workings" Maybe 1000' None Modern

⑳ [ ] Spectro. Analysis Attached ㉑ [4] Assays Attached TAJ 481 Skyline ㉒ [ ] Geochem Results Attached

Section IV Geologic Data "T-.77 opt Au" Asarco Assays show <.002 opt Au,<.01 opt Ag <.1 opt Pt

㉓ Commodity or Contained Metals: Au(Ag-W-Pb)"Os,Pf,Pd,Ir,Ru,Rh" = Crooked Assayer.

㉔ Ore Minerals-Major	Au°		T py	Minor Wolframite(?)	galena (?)
㉕ Host Rocks-Major	Granite	Aplite dikes	mafic dikes	Minor Schist	Basalt+tuffs
㉖ Age of Host Rocks	pЄ	pЄ	pЄ?to mTert.	pЄ(Xenol.?)	Qt(1-2mi.SE)

㉗ Nature of Exposures: Rolling Hills in cross-fractured,exfoliating,spheroidal weathering granite; aplite dikes/Qtz veins form cockscomb ridges; valleys, choked with grus, Qal.

㉘ Alteration: Weak Kfs-clay-epidote-chlorite + FeOx flooding (most FeOx from mafics) Strong WX+shear of mafics

㉙ Total Extent: "13,500'x4-30'wide-Qtz Fissure"

㉚ Structure: N25-50°E(N30E overall trend) fissure vein(s) with local rt.-lateral enechelon offset: 5-20'. Qtz pods-veins to 300' length (1-50'thick).

㉛ Ore Occurrence: Qtz vn-pods along aplite dike/mafic dike-schist contacts with m.-x.g. Granite, locally porphyritic. Goeth.+hem.after pyrite in vuggy Qtz Vn. Values not always in Qtz Vn. 99% oxidized

㉜ Age of Mineralization: Laramide(?)

㉝ Conclusions & Recommendations: Production Grossly misrepresented "30-50,000 T of tails": Actually 3000-5000T of dumps. Nil stoping. Flooded 30-40' below tunnel level (down Winze). No stockwork or flat veins preclude open-pit. Fissure Zone traced for 6000'+ No obvious potential for ¼-½ mile around except XoooT vn (ug). Span also holds Burro Telegraph claims Mohave Co. see 1986 H.G. Kreis ERS "200,000 gal H_2O storage -ug" = Windmill + flooded lower workings.

(For additional space use extra sheets)

MVK - ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Submittal to R.J. Kupsch — None

Section I General Indexing

① Name(s) of Property or Area: NYD "claims" (1-6) M.&M. Mining (3 claims in each county)						② Country: Mohave/Yavapai	③ State or Province: Arizona
						④ USGS Quad.: Grayback Mts 7½'	⑤ File or Gore No.
⑥ Latitude: 34°32'N	⑦ Longitude: 113°20'W	⑧ AMS Sheet: Prescott	Township: 14N	Range: 10W	Section: NW/4 29	⑨ Examined by: F.R. Koutz	⑩ Date: 3/4/87
						⑪ Office: Tucson	⑫ Field Days: 4 hrs.

Section II Sources of Information

Date Typed 3/13/87

⑬ References

Author	Date	Title	Publications	Vol. No.
Joe McFadden:	2/14/87 :	7 Au/Ag (Iron King) Assays & Sketch Profile & Ltr & phone cal		
M&M Mining Box 27081, Prescott Valley 86312 (772-6661) : sent to numerous Explor. Cos.				
AZ Bureau of Mines, 1959, Mohave and Yavapai County Geology Maps.				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ] Low Angle "VN"
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Au Ore	±200T ?	.X opt Au
From excavations		

⑰ Reserves
- [ ] Measured
- [X] Estimated Potential

Commodity	Tons	Grade
Shallow UG	±5-10,000 T	<.2 opt Au

⑱ Num. Drill Holes 0
Approx Total Footage 0

⑲ Excavations Numerous shallow pits, trenches; sev. short adits.

⑳ [3] Spectro. Analysis Attached ㉑ [5] Assays Attached Asarco (Character) ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

(.17-.55 ppm Au)

㉓ Commodity or Contained Metals: Au/AG : 7 submitted Assays (.07-.76 opt Au) (<.01-.18 opt Ag)

㉔ Ore Minerals-Major: Au° pyrite-Goethite-hematite Minor: (1-2% pyrite max)

㉕ Host Rocks-Major: Granite Diorite-Diabase Minor: Rhyol.Tuffs to N (Float)

㉖ Age of Host Rocks: pЄ pЄ ? - Laramide ? M-Tert.

㉗ Nature of Exposures: Fair: 30% outcrop, more on ridges, valley choked with grus/alluvium; spheroidal weathering/exfoliating m.-x.g. granite, 150' relief

㉘ Alteration: weak chl + epidote, Qtz vnlts ± calcite-siderite, local clay; strong weathering : FeOx mostly from mafics.

㉙ Total Extent: 500'N-S x 300'E-W Best Zone x sev.ft.thick.

㉚ Structure: NNW striking 20-40°E dipping diorite/Gr contact; local E-W to ENE fractures, diorite dikes. Windows thru dior. slab to gr. slab/mineral parallel to E slope.

㉛ Ore Occurrence: Chilled f.g.+ sheared contact zone at base of diorite sill - slabs on East Flank of WNW Granite ridge; sev.ft. into both dior/Gr. Qtz vnlts usually <¼" thick.

㉜ Age of Mineralization: Laramide (?)

㉝ Conclusions & Recommendations: Too thin and of limited area/extent; submitted samples grab + high-graded; several traverses of other granite/diorite contacts in NW/4 Sec. 29 show only minimal alteration. Property of no value. In region low angle ± sheared, mineralized contacts could be of interest if swarms of dikes/sills.

Note: No new claim posts or notices on claims; filed in courthouses 1/87 but not (?) staked in field, no recent excavations.

(For additional space use extra sheets)

ER File

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☒ Property Submittal

Section I General Indexing

① Name(s) of Property or Area: Goldmine Mountain, SE side (Andrade Property)					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad: Chandler Heights	⑤ File or Gore No.: Pinal County	
⑥ Latitude: 33°10'40"	⑦ Longitude: 111°37'50"	⑧ AMS Sheet: Mesa	Township: 3S	Range: 7E	Section: SW/4 10; NE/4 16	⑨ Examined by: H.G. Kreis	⑩ Date: 11-21-86
						⑪ Office: SWED	⑫ Field Days: 1

Section II Sources of Information

Date Typed 12/9/86

⑬ References

Author	Date	Title	Publications	Vol. No.

Property submitted by Richard Andrade, P.O. Box 992, Casa Grande, Arizona 85222 (ph. 836-5998).

Roi Tan -1 to -4 unpatented mining claims.

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☐ Too Low Grade
- ☒ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ No Interest

⑮
- ☐ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☒ Prospect
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
	None	

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade
	None	

⑱ Num. Drill Holes None

Approx Total Footage

⑲ Excavations 4 Vert.Shafts. 10'-60'deep

⑳ ☐ Spectro. Analysis Attached ㉑ ☒ Assays Attached ㉒ ☒ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au

㉔ Ore Minerals-Major: Au° Minor:

㉕ Host Rocks-Major: Biot.-muscov. sch-gn; bio.qtz.dior Minor: Amphibolite

㉖ Age of Host Rocks: Precambrian

㉗ Nature of Exposures: Good exposures at the shafts, fair exposures in the general area of the shafts, extensive cover to the east.

㉘ Alteration: Nil to locally moderate sericitization

㉙ Total Extent: <3' thick, confined to fault zone

㉚ Structure: Strongly developed fault-shear structures, typically 3' to 5' thick, striking N70°E and dipping 80°S; widely spaced.

㉛ Ore Occurrence: Fault zones host thin (up to 2' aggregate thickness), discontinuous quartz-Au veins. Approx. 1% former pyrite cubes in qtz. No mineral continuity.

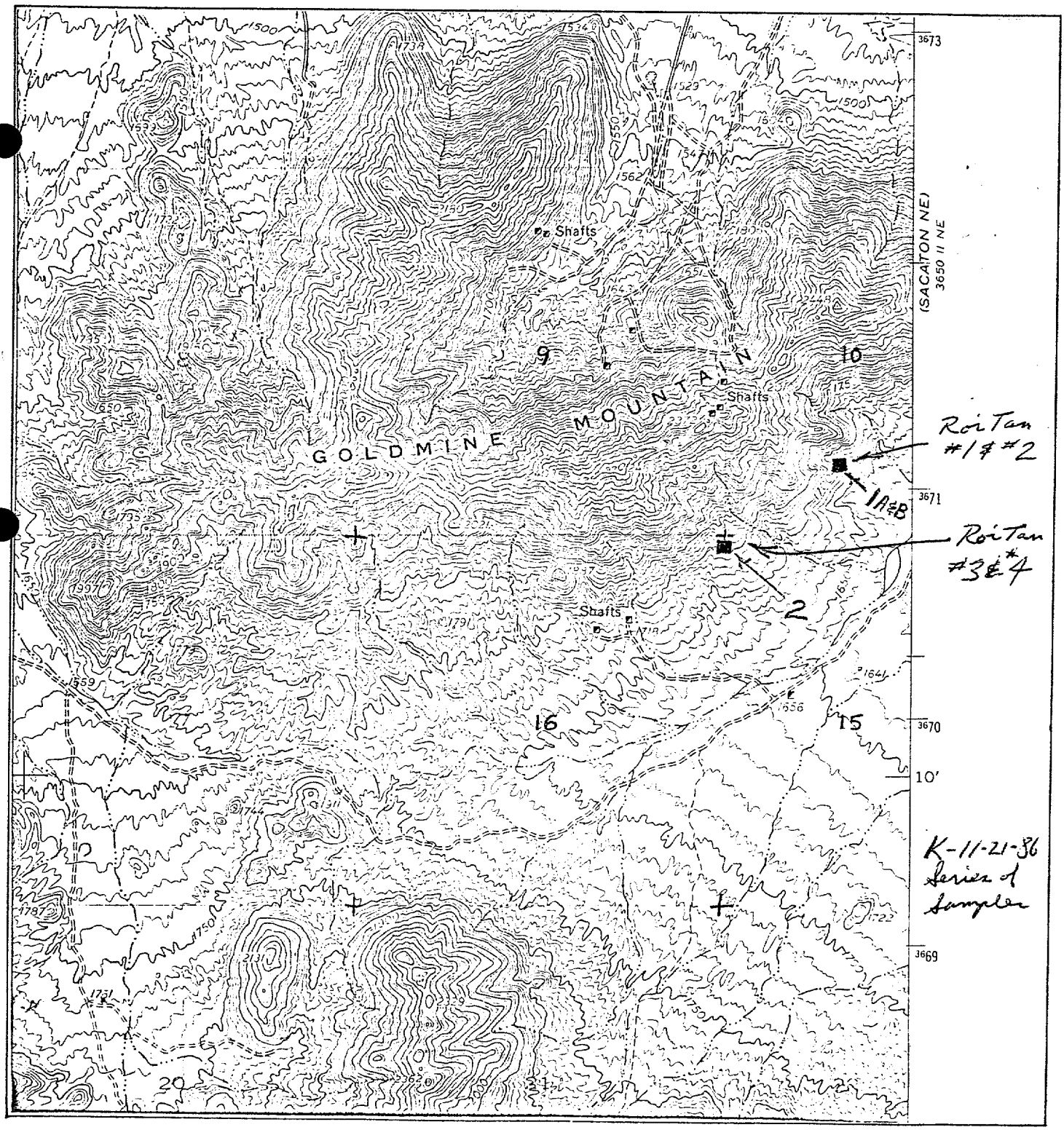
㉜ Age of Mineralization: Laramide (?)

㉝ Conclusions & Recommendations

The gold-quartz veins are too thin and discontinuous to be of interest. Conceivably, the quartz veins could be the extreme fringes of a porphyry copper system, but this hypothesis was not investigated.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193



ASARCO Incorporated

1986 GOLD PROGRAM

AMS Sheet: MESA AZ

USGS Quad.: CHANDLER HEIGHTS (7½')

Examined by: H.G. KREIS

Follow-up Recommended: Yes ☐ No ☒

SCALE: 1" = 2000'

map no. _____ **date** 11/26/86

Twsp.: 3S **Rng.:** 7E **Sec.:** 10, 16

Prospect Name: GOLDMINE MTN, SE SIDE

Owner: R. ANDRADE

State: ARIZ

County: PINAL

District: _____

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 469
December 5, 1986
K-11-21-86
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 3 Rock Chip Samples

ITEM	SAMPLE NUMBER	Au (ppm)
1	K-11-21-86-1A	<.02
2	K-11-21-86-1B	.07
3	K-11-21-86-2	<.02

cc: ASARCO INCORPORATED
Attn: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Az 85703

ASARCO Incorporated
DEC 9 1986
SW Exploration

ANDRADE PROPERTY
GOLDMINE MTN, PINAL CO. ARIZ
Sec 10 & 16 T3S, R7E

K-11-21-86-1A Dump sample (70' deep shaft)
Alt. bio dio., pale green color from weak to mod-stg musc.-ser alt, tr-1% qtz veining, 1/8% F.T.S. (py on fract.).

-1B Dump sample (30' deep shaft, 150' ESE of -1A).
Muscov. schist, rare FeO_x on qtz vn.

-2 Dump sample. Nill to weak muscov.-ser. altered bio. qtz dio. (Qtz vein not included in sample; qtz vein w/1% F.T.S (pyrite) is 1' thk, N70°E stk. & vertical; vn in ≥4' thick fault zone

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

Mgr. - [illegible] contact Andrade and go look at the area and confirm the potential.
JDS 10/22/86

REPORT OF ANALYSIS

JOB NO. TAJ 465
October 20, 1986
#1A, #2A
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: MR. JAMES D SELL
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 2 Rock Chip Samples

ITEM	SAMPLE NO.	Au (ppm)	Ag. (ppm)
1	#1A	2.9 1/10 oz	1.0
2	#2A	10.0 1/3 oz	8.4

.17 & .10 oz Au in Andrade's samples

Grab Samples from area covered by 4 claims:
1A. Bleached, quartz + sericite in granite, with orange FeOx throughout.
2A. quartz veins with limonite and scattered seams of red-black FeOx

William L. Lehmbeck
Manager
10/21/86

West? of Casa Grande
Pinal Co, AZ.

BLM RECORDS:
Richard Andrade & Salvadore Andrade & Wanda Andrade
Roi Tan #1 } #1 & #2 N/2 Sec 10 T3S R7E
#2 } → Found in SW/4 Sec 10 in field.
#3 - NW Sec 15 T3S R7E
#4 NE Sec 16 " "

ASARCO Incorporated
OCT 22 1986
SW Exploration

Richard Andrade
PO Box 992
Casa Grande, AZ 85222
ph. 836-5998.

JHC - ER FILE

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☒ ASARCO FILE ☐ _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province	④ USGS Quad.	⑤ File or Core No.
CLEOPATRA MINE	USA	AZ	Artillery Peak 15'	Mojave Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°19'15"	113°43'30"	Prescott, AZ	11N	14W	SW/4 4	H.G.Kreis	11/24/86
						⑪ Office: SWED	⑫ Field Days: -0-

Section II Sources of Information

Date Typed 12/2/86

⑬ References

Author	Date	Title	Publications	Vol. No.
B.N. Rickard	3/6/43	Cleopatra Mine	Asarco Files	

J. H. C.

DEC 5 - 1986

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☐ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ Future Work

⑮
- ☒ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☒ Possible Flux Ore

- ☐
- ☒ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
Flux Ore	3,000	.18 oz Au, .3 oz A
		1.6% Cu,
		70% SiO_2

⑰ Reserves ☐ Measured ☒ Estimated

Commodity	Tons	Grade
12/2/47	40,000	.17 oz Au 1.7% Cu
Possible flux ore.		

⑱ Num. Drill Holes >2
Approx Total Footage ?

⑲ Excavations Couple small pits & several cuts.

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au, Ag Cu

㉔ Ore Minerals-Major: Au, CuOx Minor:

㉕ Host Rocks-Major: Limestone, shale Minor:

㉖ Age of Host Rocks: Probably Paleozoic

㉗ Nature of Exposures: Apparently good exposures of mineralization in pits.

㉘ Alteration: Silicification of carbonate beds.

㉙ Total Extent: At least 10' thick, 600' long

㉚ Structure: Bedding strikes N45°W and dips at 10° or 35° northeasterly. NW striking, W'ly dipping fault truncates mineralization on SW side.

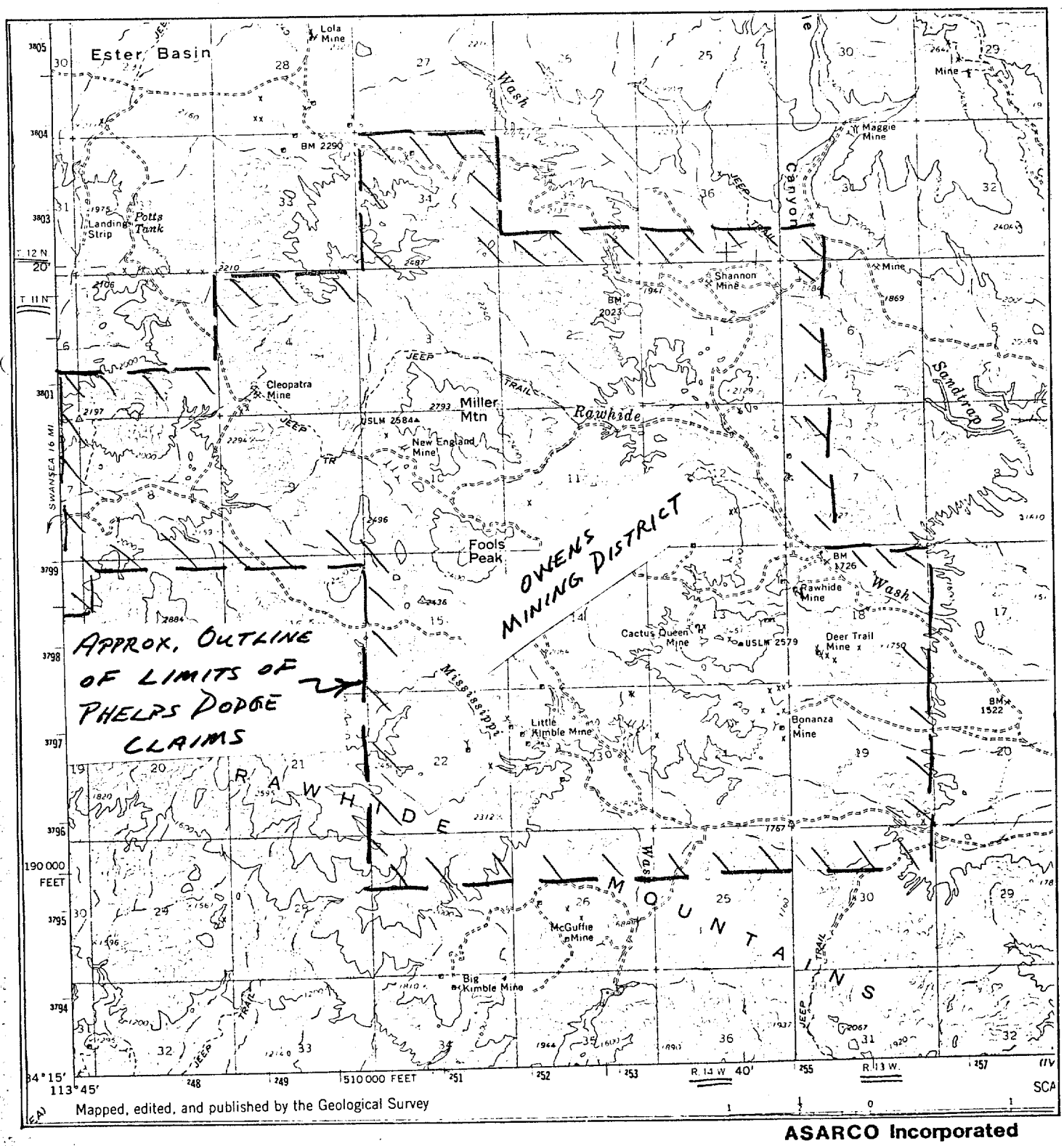
㉛ Ore Occurrence: Strong silicification with Au-Cu mineralization replaces favorable stratigraphic units (at least 2 units) along NW-SE fracture-fault zone.

㉜ Age of Mineralization: Not known

㉝ Conclusions & Recommendations: The occurrence of silicification-gold-copper replacing favorable carbonate beds suggests the potential for larger tonnages of this mineralization elsewhere in the district. Eventually this occurrence should be examined in the field, and the potential of the area should be evaluated. Unfortunately, in 1981 & 1983 Phelps Dodge staked the open ground in the Owens Mining Dist. from the Cleopatra to the Shannon Mine to the Bonanza Mine (≈2/3' of a township). Asarco should check to see if Phelps Dodge filed their 1986 assessment work.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193



ASARCO Incorporated

1986 GOLD PROGRAM

AMS Sheet: PRESCOTT AZ

USGS Quad.: ARTILLERY PEAK (15')

Examined by: H.G. KREIS

Follow-up Recommended: Yes ☒ No ☐

SCALE: 1" = 1 MILE

map no. _____ **date** _____

Twsp.: 11N **Rng.:** 14W **Sec.:** _____

Prospect Name: CLEOPATRA MINE

Owner: _____

State: ARIZONA

County: MOJAVE ARIZ

District: OWENS MINING DIST

MILS and/or Terradata # _____ / _____

SHC-ER FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Burro Telegraph Mine					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Kaiser Spgs.	⑤ File or Core No.: Mojave Co.	
⑥ Latitude: 34°33'30"	⑦ Longitude: 113°29'40"	⑧ AMS Sheet: Prescott	Township: 14N	Range: 12W	Section: NE Cor. 15	⑨ Examined by: H.G. Kreis	⑩ Date: Sept.1986
						⑪ Office: SWED	⑫ Field Days: 3

Section II Sources of Information

Date Typed 10/27/86

⑬ References

Author	Date	Title	Publications	Vol. No.
L.P. Entwistle,	7-16-62	Burro Telegraph Mine, Asarco Files		

J.H.C. NOV 6 1986

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Ag, Au	Nil	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
Geol.Poss.	Res.800,000	1.4ozAg,.05ozAu

within 125' of ground surface, and it is open at depth.

⑱ Num. Drill Holes ≥3
Approx Total Footage Unknown

⑲ Excavations: Several open adits

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [X] Geochem Results Attached
E-spec results to follow.

Section IV Geologic Data

㉓ Commodity or Contained Metals: Ag, Au

㉔ Ore Minerals-Major: Argentite (?) Minor:

㉕ Host Rocks-Major: See attached sheet Minor:

㉖ Age of Host Rocks: Mid tertiary hanging wall and pЄ(?) footwall

㉗ Nature of Exposures: Excellent, craggy relief outcrops of vein plus good exposure of vein in adits. Good exposures of footwall rocks; poor exposures of immediate hanging wall.

㉘ Alteration: Weak to moderate chlorite-sericite alteration of footwall rock. Thin section work needed.

㉙ Total Extent: Locally for at least (Continued pg. 2)

㉚ Structure: The vein strikes N30W and dips 55° to the NE. The vein is in a fault. Footwall rocks near the vein are moderately to strongly fractured. (Continued page 2)

㉛ Ore Occurrence: The Au-Ag mineralization occurs in a well defined quartz- calcite vein. The vein has a sharp contact with the hanging wall but very little of the contact is exposed. (Continued page 2)

㉜ Age of Mineralization: Not known.

㉝ Conclusions & Recommendations: The Burro-Telegraph Mine has a good potential for a gold-silver open pit mine and/or an underground mine. The possibility of a heap leach operation within Burro Creek is substantially reduced by steep canyon walls and environmental concerns (Burro Creek and wilderness qualities).

It is recommended that Asarco continue its evaluation of the property. The land ownership needs to be determined, and eventually the results of the previous work, namely drilling, need (Continued page 3)

(For additional space use extra sheets)

25. Host Rocks-Major: The silver and gold is hosted in a quartz-calcite vein. The hanging wall is dacite of extrusive orgin. The footwall has a complex suite of lithologies. The footwall consists of medium to coarse grained granite, basalt diabase (?), gneissic granite, & med. grained biotite diorite. These are field names, and only thin section work will enable an accurate rock type evaluation.

29. Total Extent: 50' into footwall; possible widespread chloritization.

30. Structure: There is insufficient evidence in the relatively small area of this examination to determine if the fault is a detachment fault, but quite likely it is detachment related.

31. Ore Occurrence: The footwall contact of the quartz-calcite vein is somewhat irregular but reasonably well defined. Typically quartz and calcite veins (<1" thick) extend roughly 50' into the footwall rocks with an abundance of 3 to 5%.

Within the vein structure, the vein is massive grey-white quartz and white calcite with a very minor amount of wallrock inclusions. The ratio of quartz to calcite varies from one extreme to the other. Locally, as at BT-22, the footwall portion of the vein is massive quartz. The only significant abundance of MnOx in the vein occurs near BT-28. The abundance of associated metals is being determined by E-Spec analysis, and the results should be available in about two weeks. The vein is weakly FeOx stained and may have contained up to ½% pyrite in places.

The quartz vein exhibits good continuity along strike for more than 2000'. Immediately south of Burro Creek the vein forms the dip slope of a high ridge (see attached map), and the exposed lower portion of the vein varies from about 30' to 100' in thickness over a strike length of 900'. Towards the top of the ridge, up dip, the vein thins considerably because of erosion. Farther to the south the vein thins to a 5' thickness. To the north, immediately across Burro Creek, the vein appears to be only 15' wide, but then it swells to at least a 50' thickness in Warm Springs Canyon before going under very thick post mineral cover.

The thickest portion of the vein carries the best gold and silver values, and it has a potential for open pit mining and/or underground mining. Within 125' of the surface of the ground there is a geologic possible reserve of 800,000 tons at 1.4 oz./ton Ag and 0.05 oz./ton Au. The underground potential is dependent upon substantially higher

(Continued from pages 1 & 2) Typed: 10/27/86

31. Ore Occurrence: (Continued from page 2)

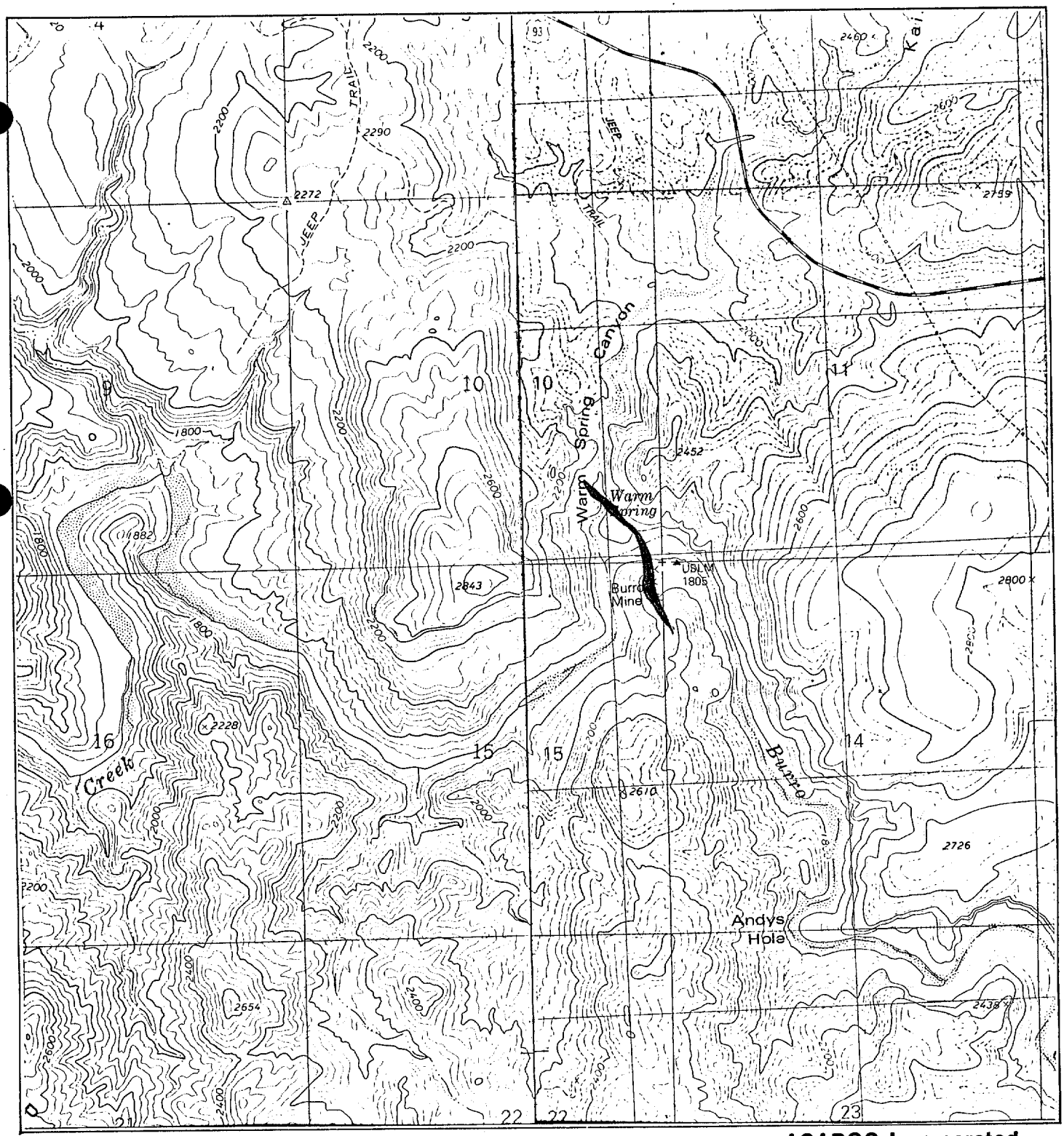
precious metal prices and/or finding substantially higher Au-Ag grades at depth.

At least several drill holes were put into the geologic potential reserve. The holes appear to have been drilled within the last two years. The drilling probably was done by Dominion Resources (Chatham, N.J.), a company that staked 40 claims about the patented Burro-Telegraph claims in November of 1984. There is some evidence that Horizon Gold Shares is involved with the property. An employee of Horizon Gold Shares requested a contract claim staker to stake the claims for Dominion Resources.

33. Conclusions and Recommendations: to be acquired and evaluated.

The presence of Au and Ag with substantial grades and thicknesses at the Burro-Telegraph is very encouraging, and it means there is a good potential for open pit and underground Au-Ag reserves in the Burro Creek area. Reconnaissance work about the Burro-Telegraph and elsewhere in the district is warranted.

Attachments: Geologic Map
Assay sheets
Topographic Map
Sample Descriptions



ASARCO Incorporated

1986 GOLD PROGRAM

AMS Sheet: Prescott

USGS Quad.: Kaiser Spring & Greenwood Pk. (7½)

Twsp.: 14N **Rng.:** 12W **Sec.:** NE Cor. 15

Prospect Name: Burro - Telegraph Mine

Owner:

Examined by: H.G. Kreis October 1986

Follow-up Recommended: Yes ☒ No ☐

State: Arizona

County: Mojave

District: Greenwood Peak Area

SCALE: 1" = 2000'

MILS and/or Terradata # _____ / _____

map no. _____ **date** _____

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

BURRO - TELEGRAPH
MOJAVE CO. AZ.

REPORT OF ANALYSIS

JOB NO. TAJ 464
October 22, 1986
BT-1 A-2

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 34 Rock Chip Samples

ITEM	SAMPLE NO.	FIRE ASSAY Au* (ppm)	Ag* (ppm)
1	BT-01	.55	27.0
2	BT-02	3.60	36.0
3	BT-03	1.20	90.0
4	BT-04	3.10	168.0
5	BT-05	.04	1.4
6	BT-06	.11	5.8
7	BT-07	.32	124.0
8	BT-08	1.80	78.0
9	BT-09	.06	7.0
10	BT-10	.05	1.0
11	BT-11	.11	1.9
12	BT-12	<.02	.2
13	BT-13	<.02	.2
14	BT-14	5.30	205.0
15	BT-15	.74	15.0
16	BT-16	.04	1.7
17	BT-17	<.02	2.0
18	BT-18	.11	43.0
19	BT-19	.24	24.0
20	BT-20	3.20	57.0
21	BT-21	2.30	28.0
22	BT-22	.13	16.0
23	BT-23	.98	11.0
24	BT-24	1.70	63.0
25	BT-25	.78	34.0

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NO.	FIRE ASSAY Au* (ppm)	FIRE ASSAY Ag* (ppm)
26	BT-26	.32	29.0
27	BT-27	.09	4.7
28	BT-28	.60	15.0
29	BT-29	.03	.8
30	BT-30	.08	24.0
31	BT-31	.14	19.0
32	BT-32	.09	2.4
~~Adit near Billie Boy #2 Location Mon.~~ ~~33~~	~~A-01~~	~~.26~~	~~.8~~ ~~Quartz vein~~
~~34~~	~~A-02~~	~~<.02~~	~~.8~~ ~~Wall rock~~

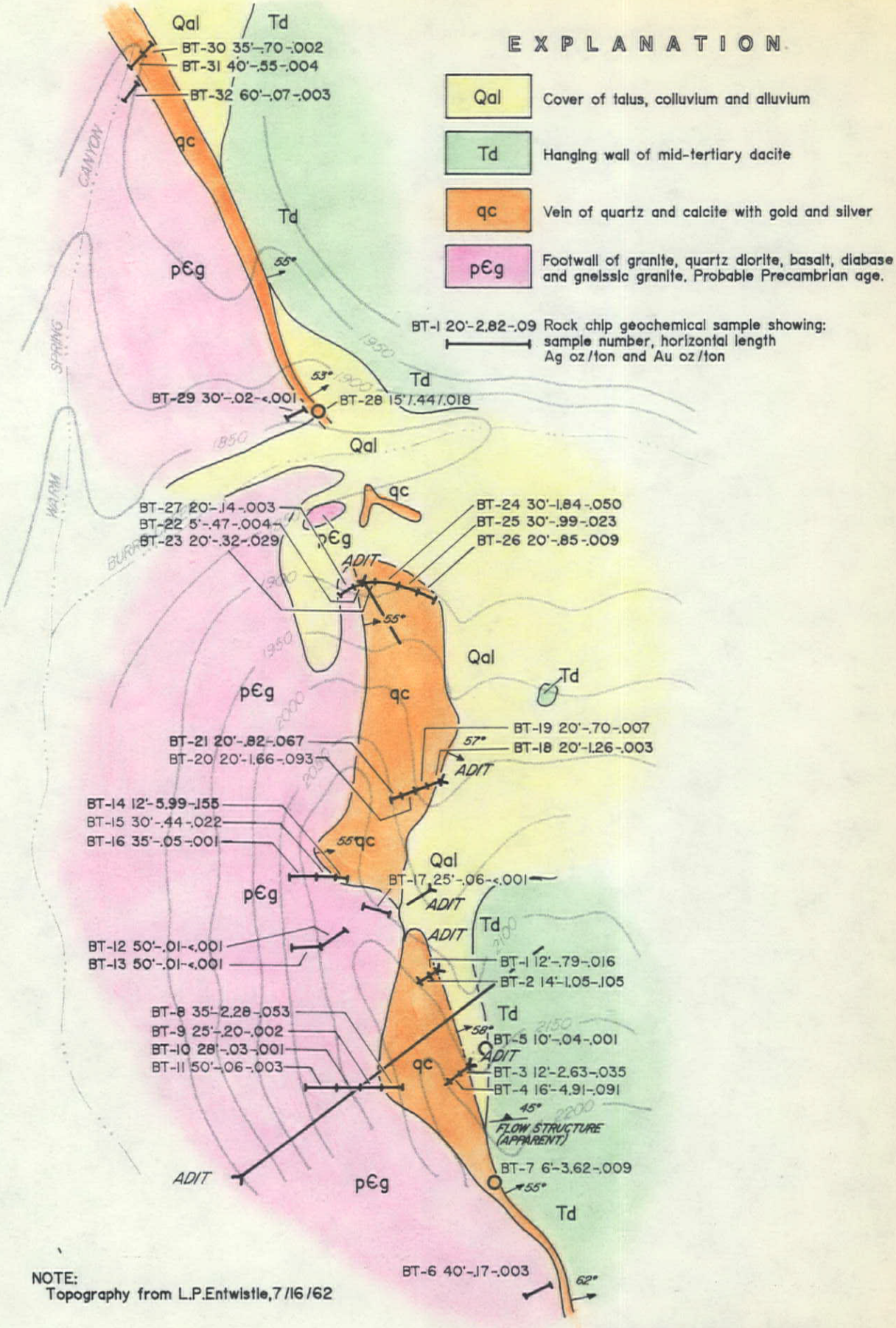
*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

cc: ASARCO INCORPORATION
Attn: Mr. J. D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

REGISTERED ASSAYER CERTIFICATE No. 9425 WILLIAM L. LEHMBECK ARIZONA

William L. Lehmbeck
Manager

10/23/86



ASARCO Incorporated

BURRO-TELEGRAPH MINE

RECONNAISSANCE GEOLOGY-SAMPLES

MOHAVE COUNTY, ARIZONA

H.G.KREIS **1"=200'** **OCT. 1986**

mn 6416 HGK/dam 10/86 tucson

EXPLANATION
R.C.: Rock Chip
W, M, S: Wk, Mod., Stg
ch: chlorite
S: sericite
F.T.S.: Former total sulf.

BURRO TELEGRAPH
SEC. 10 & 15 T14N, R12E
MOJAVE CO. AZ

H.G. KREIS
10-1986
±4 lb. samples

Ag opt	Au opt	Sample No. BT	2 Sample Type	3 Rock Type	4 Alt'n	5 % Qtz	5 % Calcite	FeO x (%)	8 Remarks
.79	.016	-1	R.C.	10% b.g. dio 90% Vein		← 90% →		Tr	0 to 12' into adit (Adit 26' long S53W)
1.05	.105	-2	"	Vein		← 100% →		.2	12' to 26' into adit
2.63	.035	-3	"	Vein		← 100% →		.2	0 to 12' into adit (Adit 28' long, S53W)
4.91	.091	-4	"	Vein		← 100% →		.2	12' to 28' into adit
.04	.001	-5	"	Dacite	None	0	Tr	—	Brecciated & weathered
.17	.003	-6	"	m.g. Gr	W ch, s	2	4	.5 FTS? .8	From vein to 40' into FW
3.62	.009	-7	Dump sample	Vein	—	← >80% →		1 (G)	Dump below cliff
2.28	.053	-8	R.C.	Vein & Aphanite	S ch.	← 40-100% →		.5 (G)	35' long
.20	.002	-9	R.C.	f.g. Gr(?)	M ch., s	3	2	1-2% FTS 1	25' long
.03	.001	-10	R.C.	f.g. gneissic Gr(?)	"	2	1	1-2% FTS .2	28' long
.06	.003	-11	R.C.	"	"	1	0	"	50' long, <30' below eroded vein
.01	<.001	-12	R.C.	f.g. Qtz Dio	"	2	1	"	50' long (slope dist.; dwn 30° to E)
.01	<.001	-13	R.C.	"	"	1	0	"	50' long across crest of ridge.
5.99	.155	-14	R.C.	Vein	—	← 100% →		.3	12' horiz.
.44	.022	-15	R.C.	Carbonate stkwk in aphanite		10	50	1	30' horiz.
.05	.001	-16	R.C.	Gneissic Qtz Dio (?)	M ch., s	2	1	.5	35' horiz
.06	<.001	-17	R.C.	Gr?	M s	10	1	1-2% FTS 1	25' slope
1.26	.003	-18	R.C.	Vein	—	← 100 →		Tr - .5	Collar-20'; Adit N70°W
.70	.007	-19	R.C.	Vein	—	"		"	20'-40' into adit
1.66	.093	-20	R.C.	Vein	—	"		"	40-60 into adit
.82	.067	-21	R.C. Floor of adit	Vein	—	"		"	60-80' into adit
.47	.004	-22	R.C.	Vein	—	>90	<10	1% FTS .5	5' thk (true) massive qtz vein in FW of vein struct. Bxa & vugs
.32	.029	-23	R.C.	Vein	—	← 100% →		1% FTS .5	20' horiz (adit equiv sample)
1.84	.050	-24	R.C.	Vein	—	← 100% →		.5	30' horiz
.99	.023	-25	R.C.	Vein	—	"		.5	30' horiz
.85	.009	-26	R.C.	Vein	—	"		1% F.T.S .5	20' horiz
.14	.003	-27	R.C.	Diab.	M ch	3	1	—	20' (true) into F.W.
.44	.018	-28	R.C.	Vein	—	>80	<20	.5	15' (true) thk. of vein
.02	<.001	-29	R.C.	Gr	M ch, s	4	1	.5	30' horiz.
.70	.002	-30	R.C.	30% Qtz, 70% Vn	—	← 70% →		<.5	35' horiz. across vein
.55	.004	-31	R.C.	Vein	—	← <90% →		.5	40' " " "
.07	.003	-32	R.C.	Gr > Gn	Nill to Wch	2	1	—	60 horiz into FW

True width of vein ≈ 15' horiz. S70°E

EFFICIENCY LINE # 22-206

BURRO-TELEGRAPH
√ HC-ER

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. TAJ 464A
November 10, 1986
BT-1 A-2

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Spectrographic Analysis of 2 Composites

The attached pages comprise this report of analysis. Values are reported in parts per million (ppm), except where otherwise noted, to the nearest number in the series 1, 1.5, 2, 3, 5, 7, 10, etc. within each order of magnitude. These numbers represent the approximate boundaries and midpoints of arbitrary ranges of concentration differing by the reciprocal of the cube root of ten. The 'accepted' value is considered to be within + or - 1 step of the range reported at the 68 % confidence level and within + or - 2 steps at the 95 % confidence level.

William L. Lehmbeck
Manager
11-10-86

cc: ASARCO INC.
Attn: Mr. J. D. Sell
P.O. Box 5747
Tucson, AZ 85703

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 464A
PAGE 2

ITEM NO. SAMPLE NO.
35 = COMP(BT-1,2,3,4)
36 = COMP(BT-23,24,25)

ITEM	35	36
ELEMENT		
Fe	1%	1%
Ca	7%	10%
Mg	.2%	.15%
Ag	100	50
As	<200	<200
B	10	10
Ba	200	200
Be	10	5
Bi	<10	<10
Cd	<50	<50
Co	<5	<5
Cr	300	200
Cu	50	70
Ga	<10	<10
Ge	<20	<20
La	20	20
Mn	3000	3000
Mo	<2	<2
Nb	<20	<20
Ni	<5	<5
Pb	500	500
Sb	<100	<100
Sc	<10	<10
Sn	<10	<10
Sr	200	200
Ti	500	500
V	20	15
W	<50	<50
Y	<10	<10
Zn	1000	700
Zr	20	20

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [X] Submittal

Section I General Indexing

① Name(s) of Property or Area: Billie et al Claim Group					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Arrastra Mt	⑤ File or Gore No.: Mojave Co.	
⑥ Latitude: 34° 27'	⑦ Longitude: 113° 28'	⑧ AMS Sheet: Prescott	Township: 13N	Range: 12W	Section: 24	⑨ Examined by: H.G. Kreis	⑩ Date: 10/3/86
						⑪ Office: SWED	⑫ Field Days: 1

OCT 27 1986

Section II Sources of Information

Date Typed 10/24/86

⑬ References

Author	Date	Title	Publications	Vol. No.

J.F. Span showed H.G.K. some unpatented mining claims belonging to F. Wolfe (Ft. Lauderdale, FL), Evon Wilson (Phoenix) and himself. The property was submitted as an old Spanish mine with 70 oz./ton Ag.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect

- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
Ag	Nil	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None
Approx Total Footage:

⑲ Excavations: Few adits and dozer cuts.

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached A-1,-2

Section IV Geologic Data

㉓ Commodity or Contained Metals: Silver; possible Au in veins (see Sample A-1).

㉔ Ore Minerals-Major: Argentite and/or tetrahedrite(oxidized) Minor: traces CuOx

㉕ Host Rocks-Major: Granite Minor: gneiss

㉖ Age of Host Rocks: Not Known

㉗ Nature of Exposures: Good in adits and dozer cuts. Quartz veins are poorly exposed in outcrops because veins are thin (<1') and discontinuous

㉘ Alteration: Nil

㉙ Total Extent: less than a couple inches from vein

㉚ Structure: Faults with moderate dip.

㉛ Ore Occurrence: Quartz veins, <1" thick, discontinuous, very widely spaced, often found in fault zones (<2' thick) in otherwise blocky, fresh granite and gneiss.

㉜ Age of Mineralization: Not Known

㉝ Conclusions & Recommendations: The quartz-silver veins, although possibly very high grade(up to 70 opt Ag according to one of the owners) are too thin and discontinuous to offer any mining potential of interest to Asarco. No further work is recommended.

The property owners have about 75 unpatented mining claims spread out in five townships. Most of the claims are scattered about in T13N,R12W, and I suspect they are on precious metals veins. While the particular workings that I was shown are not of interest in themselves, the unpatented (see next page)

(For additional space use extra sheets)

ASARCO RECORD SHEET

Typed: 10/24/86

Name of Property or Area:

Billie et al Claim Group

33. Conclusions & Recommendations (continued from page 1)

mining claims in T13N,R12W suggest widespread precious metal veins. This area is a reasonable candidate for future reconnaisance work (also see ERS on Burro-Telegraph, Section 15, T14N, R12W).

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 464
October 22, 1986

ITEM	SAMPLE NO.	FIRE ASSAY Au* (ppm)	FIRE ASSAY Ag* (ppm)	
A-1	Quartz vein; N60°E, 50°N and upto 6" thick, <1% Fe2x,			
A-2	Wall Rock: Biotite granite gneiss, faulted, fresh, friable from faulting and weathering.			
Adit near Billie Boy #2 Location Mon.	33	A-01	.26*	.8 Quartz vein
	34	A-02	<.02	.8 Wall rock

500' ENE OF CENTER SECTION 24 T13N, R12W

* Note anomalous gold values o H.G.K.

*NOTE: Method of analysis by combination fire assay and atomic absorption based on a one assay-ton sample.

William L. Lehmbeck
Manager
10/23/86

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

ASARCO EXPLORATION RECORD

JHL 4-24-86

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: CADY MOUNTAINS PROSPECT						② Country: USA	③ State or Province: California
						④ USGS Quad.: Broadwell Lake	⑤ File or Core No.: San Bernardino
⑥ Latitude: 34°45'	⑦ Longitude: 116°14'	⑧ AMS Sheet: San Bernardino	Township: 8N	Range: 7E	Section: 27, 34	⑨ Examined by: H.G.Kreis	⑩ Date: Nov.1985
						⑪ Office: SWED	⑫ Field Days: 12

Section II Sources of Information

Date Typed 2/12/86

⑬ References

Author	Date	Title	Publications	Vol. No.
See references in				
Kreis, H.G., 1-1986, Geol. and Mineral Potential of the Cady Mtns Prospect, Asarco file.				

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Drilling rec.

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
No Ag reserves known		
Celestite	2-10(+)mm tons	81% $SrSO_4$

⑱ Num. Drill Holes ≥3
Approx Total Footage ≥1900

⑲ Excavations Dozer cuts & shaft at Celestite Mines

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Summary of Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Ag in prospect area; $SrSO_4$ to the west.

㉔ Ore Minerals-Major: Ag; Minor:

㉕ Host Rocks-Major: Lms.; Minor: ss, tuff

㉖ Age of Host Rocks: Miocene; Miocene

㉗ Nature of Exposures: Roughly 10 outcrops Ag-jasp.-lms., each roughly 20,000 sq.ft. in area, scattered in an area of 1 sq.mi.; extensive pediment cover.

㉘ Alteration: Jasperoid replacement of limestone described below.

㉙ Total Extent: At least 1 sq.mi.

㉚ Structure: Limestone beds have low angled dip and variable strike in area of Ag mineralization. Strong prevailing NW strike in faults,veins & bedding of older sediments.

㉛ Ore Occurrence: Ag mineralization is associated with jasperoid replacement of limestone in Sections 27 & 34 (see attached map). The jasperoid occurs as bedding replacements of limestone in the (Continued)

㉜ Age of Mineralization: Miocene

㉝ Conclusions & Recommendations: The Cady Mountains prospect area has a potential for bulk tonnage silver mineralization in the Miocene Hector Formation. This potential is in a lacustrine sediment-hot springs type environment analogus to that of the Waterloo deposit. The jasperoid-Ag-indicator metal mineralization in the Section 27 area is interpreted to be possible fringe mineralization to a bulk tonnage silver deposit. The best intercept to date is 74' at 0.25 opt in drill hole CAD-5, a Duval drill hole. (Continued)

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

31. Ore Occurrence

Miocene Hector Formation. Anomalous amounts of As, Mo, Pb, Zn, Tl, Sb, and Hg are associated with the Ag mineralization; and they occur in the Ag-jasperoid replaced limestone and in other units of the Hector Formation (see attached summary of mineralization in the Hector Formation, Table 1). These anomalous metal values are similar to those in the Waterloo deposit (see Table 3).

The underlying andesite-basalt-dacite rocks of the Argos and Cady Mountains Formations are mineralized with calcite ± jasperoid ± local MnOx. This mineralization occurs as fracture fillings, veins, and breccias. The geochemistry of this mineralization is summarized in Table 2. Veins of barite occur at the Hansen barite prospect.

33. Conclusions and Recommendations

Based on similarities to the Waterloo deposit and the presence of favorable limestone beds, the Cady Mountains prospect has a potential for 50 million to 100 million tons at 3 to 6 opt Ag. Most of this tonnage may be open pit mineable if the Hector Formation is relatively flat lying at a shallow depth.

The best potential for this bulk tonnage silver mineralization is located under pediment cover east of drill hole CAD-5 and on the southeast projection of mineralization in Sections 27, 26, and 36. As shown in Figure 1, three rotary drill holes are recommended to test this potential. A fourth rotary drill hole is recommended west of CAD-5, subject to the expected acquisition of all of Duval's drill hole data. Appropriate land acquisition and geophysical depth-to-bedrock estimates would be done prior to drilling.

Attachments: Summary map of Cady Prospect
Tables 1, 2, and 3

JHC-ER File

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☒ Submittal

Section I General Indexing

① Name(s) of Property or Area: Boston-Esperanza Mine						② Country: USA	③ State or Province: California
						④ USGS Quad.: Mokelumne Hill (7½)	⑤ File or Gore No.: Calaveras Co.
⑥ Latitude: 38°19''	⑦ Longitude: 120°41'	⑧ AMS Sheet: Sacramento	Township: 5N	Range: 12E	Section: 5	⑨ Examined by: H.G. Kreis	⑩ Date: 2-3-86
						⑪ Office: SWED	⑫ Field Days: 0

Section II Sources of Information

Date Typed 2/4/86

⑬ References

Author	Date	Title	Publications	Vol. No.
Sunshine Mining Co. and AMAX data submitted by the property owner, Thomas Blair (1-1986). This data is in Asarco's files.				

J. H. C.

Section III Appraisal

FEB 18 1986

⑭ Recommendations

- ☐ Action Now
- ☐ Too Low Grade
- ☒ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☐

⑮

- ☐ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
Au	<50,000 oz (est.)	

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade
Au	<50,000 tons	0.2 opt.

⑱ Num. Drill Holes 13
Approx Total Footage ±8,000

⑲ Excavations Caved underground workings.

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au

㉔ Ore Minerals-Major: Au Minor:

㉕ Host Rocks-Major: Diorite Minor:

㉖ Age of Host Rocks: Jurassic-Cretaceous

㉗ Nature of Exposures: Not known

㉘ Alteration: Chlorite-sericite-quartz alteration is present with an apparent weak abundance.

㉙ Total Extent: Not readily determinable from data.

㉚ Structure: Vein strikes N20°E and dips 40-50° SE.

㉛ Ore Occurrence: The gold occurs in a quartz vein and in quartz veined diorite. Very minor gold occurs in thin veins (?) of pyritization (3% pyrite). The gold quartz vein structure averages (continued)

㉜ Age of Mineralization: Jurassic-Cretaceous

㉝ Conclusions & Recommendations: The Boston vein geology with its diorite host rocks is typical of the East Belt of the Mother Lode. It does not have slate-volcanic wallrocks with ankerite-mariposite alteration as in the main Mother Lode. Consequently, the thicknesses and gold grades found in RDH-4 and -5 have a limited degree of continuity, and produce only a small reserve potential, <50,000 tons of <0.25 opt Au, at a depth of 300' to 700'. Considering the size of the tonnage-grade potential, the likelihood of continuity problems, and the depth of (continued)

(For additional space use extra sheets)

31. Ore Occurrence (Continued)

about 10' in thickness but locally swells up to 40' in thickness.

A possible reserve in the old workings is suggested from the submitted data; however, all or part of it has been mined out. The plan maps of the 100' level and the Boston Mine show the results of sampling done by the Lucky Tiger Combination Gold Mining Co. in 1933. Lucky Tiger reopened the mine, sampled all the workings, did some development on the 300' level, and drove a new 200' level. Apparently, the results were discouraging and only very minor production was accomplished. The Lucky Tiger data shows the results of detailed sampling traverses on the 100' level, but it is not known if the sampling was done horizontally in cross cuts or along the vein in raises. If the sample traverses were run horizontally, the gold mineralization is 40' in true thickness on the 100' level (see attached sketch cross section), and there is (was) 75,000 tons at 0.15 opt Au between the 100' level and the surface. Probably little, if any, of this reserve is left in the ground. The ore above the adit level was glory hole mined, and most of the production from the mine was from above the 100' level. The plan map of the Boston Mine and the drill hole intercepts near the mine show no significant thicknesses of +0.1 opt Au below the 100' level possible reserve.

Drill holes RDH-84-4 and-5 intercepted a thickness and grade of gold mineralization similar to that of the just described 100' level mineralization. Five drill holes within 200' of the RDH-84-4 and -5 intercepts failed to intercept similar mineralization. A sixth hole, RDH-84-10, intercepted 10' at 0.11 opt Au, but the quartz vein intercept was only 9' in length. The gold mineralization in RDH-84-4 and -5, ±40' (true) at 0.13 opt Au or ±14'(true) at 0.25 opt Au, is open up and down dip. Unfortunately, the continuity of thickness-grade in the mine workings and the continuity of thickness-grade experienced in the East Belt of the Mother Lode suggest the RDH-84-4 and -5 gold mineralization will not go far up or down dip. Thus, the 0.13 opt Au might amount to 100,000 to 150,000 tons. The 0.25 opt Au could total 10,000 to 30,000 tons.

33. Conclusions & Recommendations (Continued)

a shaft needed to explore this mineralization, this reserve is not of current interest.

OK

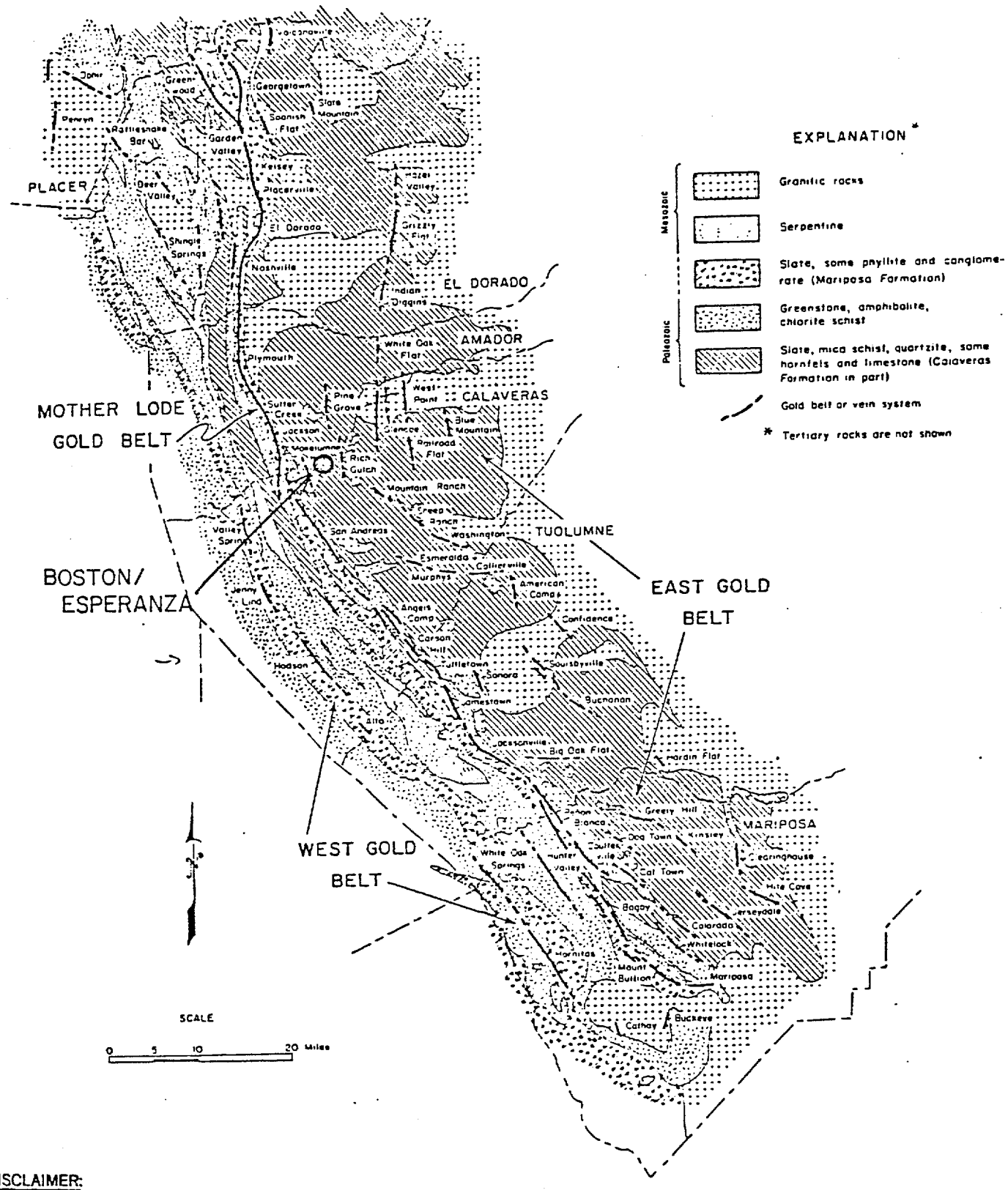
The potential for an operating open pit-heap leaching mine is not encouraging. The drill hole intercepts of the vein structure and mine workings give little indication of a substantial reserve. Furthermore, the vein dips into the hillside. The vein is in a drainage only 2000' from the Mokelumne river. There are dump room problems, and the owner is subdividing the land above the mine.

33. Conclusions & Recommendations (Continued)

The Boston-Esperanza Mine has a potential for a small vein operation if the price of gold is two or three times what it is today.

Attachments: Index map of Mother Lode gold belt
Topographic Map
Drill hole map
Vein contour map
Mineralized intercepts
Cross section A-A'
Sketch section of possible reserve
100' Level of Boston Mine

Gold Districts—Sierra Nevada
Regional Geology



Map of Major Gold Belts, Central Sierra Nevada. The Mother Lode and the related East and West gold belts are shown.

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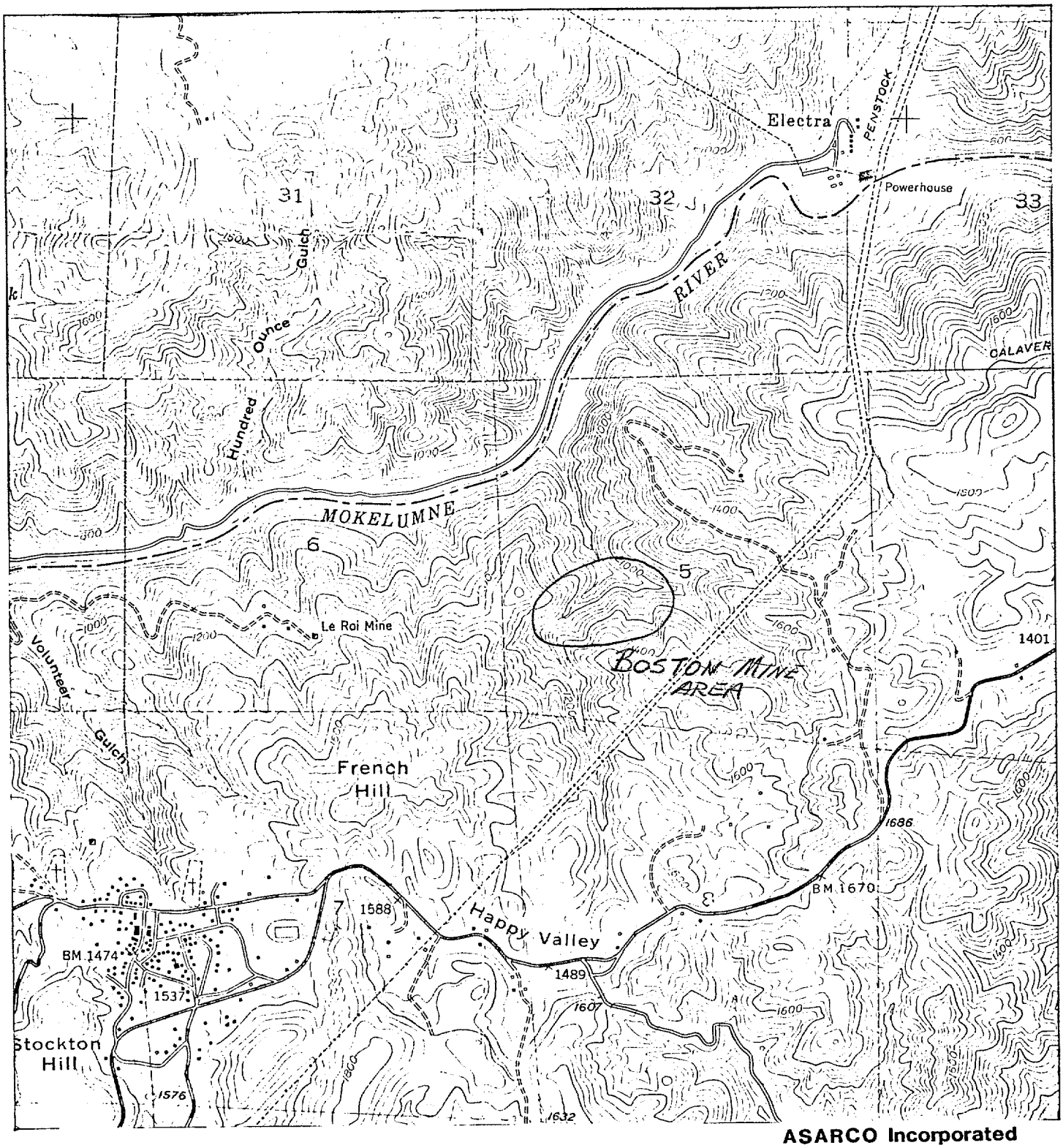
Figure 5



ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: SAN BERNADINO

USGS Quad.: MOKELUMNE HILL

Examined by: H.G. KREIS

Follow-up Recommended: Yes ☐ No ☒

SCALE: 1"=2000

Twsp.: 5N Rng.: 12E Sec.: 5

Prospect Name: BOSTON MINE

Owner:

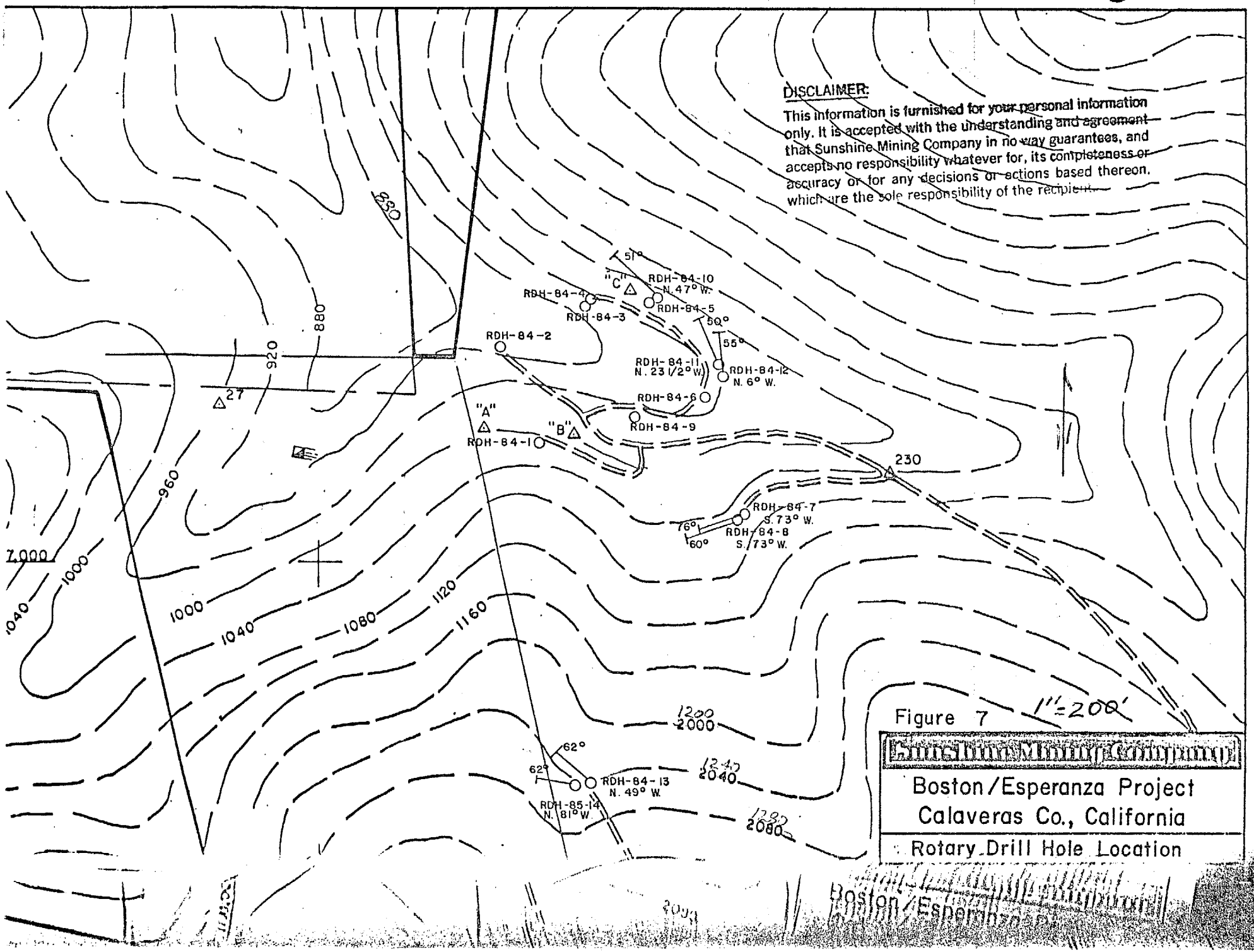
State: CALIF

County: CALAVERAS

District:

MILS and/or Terradata # _____ / _____

map no. _____ date _____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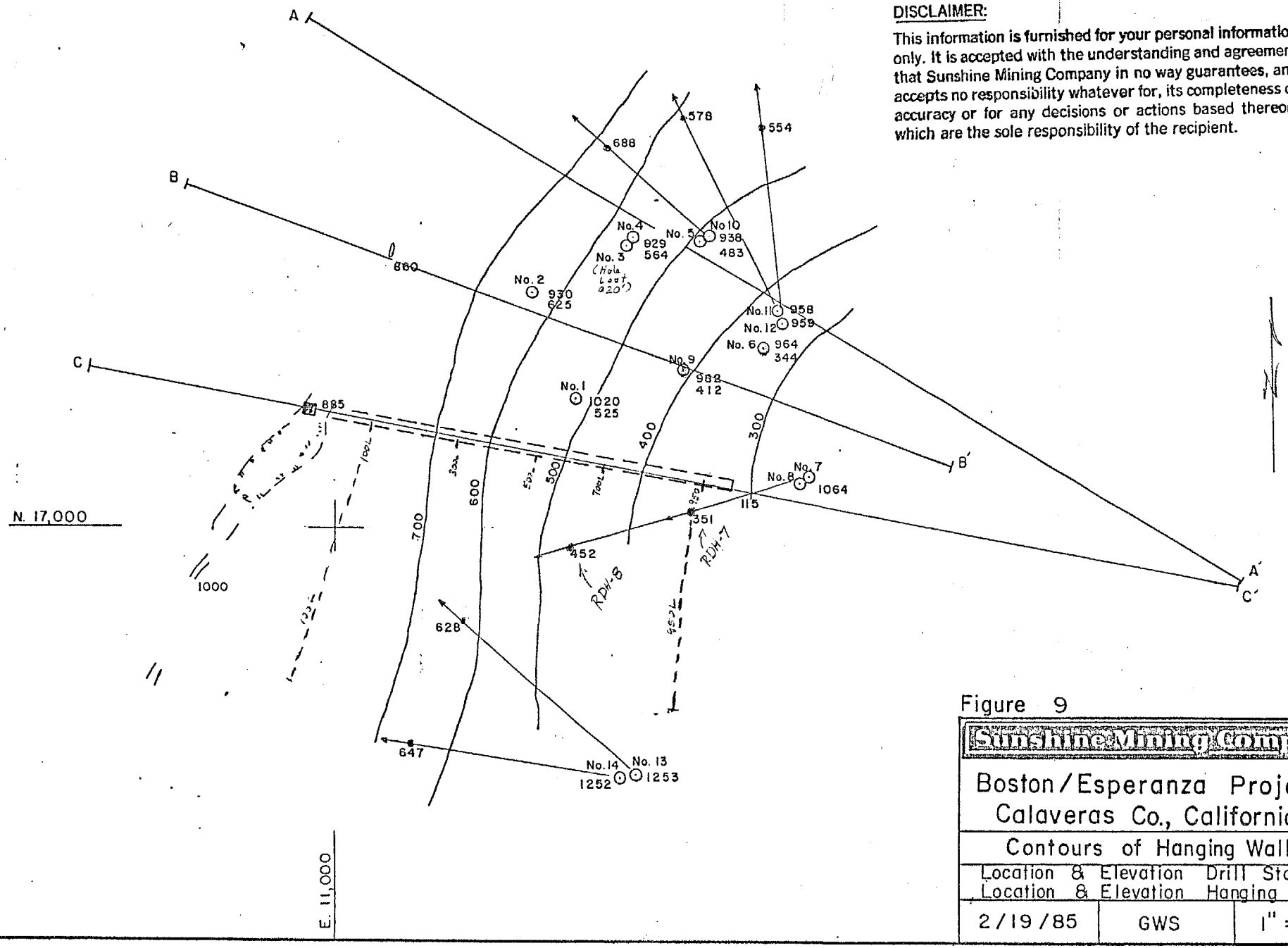
"C"
RDH-84-10
N. 47° W.
RDH-84-4
RDH-84-3
RDH-84-5
RDH-84-2
RDH-84-11
N. 23 1/2° W.
RDH-84-12
N. 6° W.
RDH-84-6
RDH-84-9
"A"
"B"
RDH-84-1
RDH-84-7
S. 73° W.
RDH-84-8
S. 73° W.
RDH-84-13
N. 49° W.
RDH-85-14
N. 81° W.
51°
50°
55°
76°
60°
62°
62°
27
230
880
920
960
1000
1040
1080
1120
1160
1200
2000
2040
2080
7,000
1" = 200'
Figure 7
Sunshine Mining Company
Boston/Esperanza Project
Calaveras Co., California
Rotary Drill Hole Location



DISCLAIMER:

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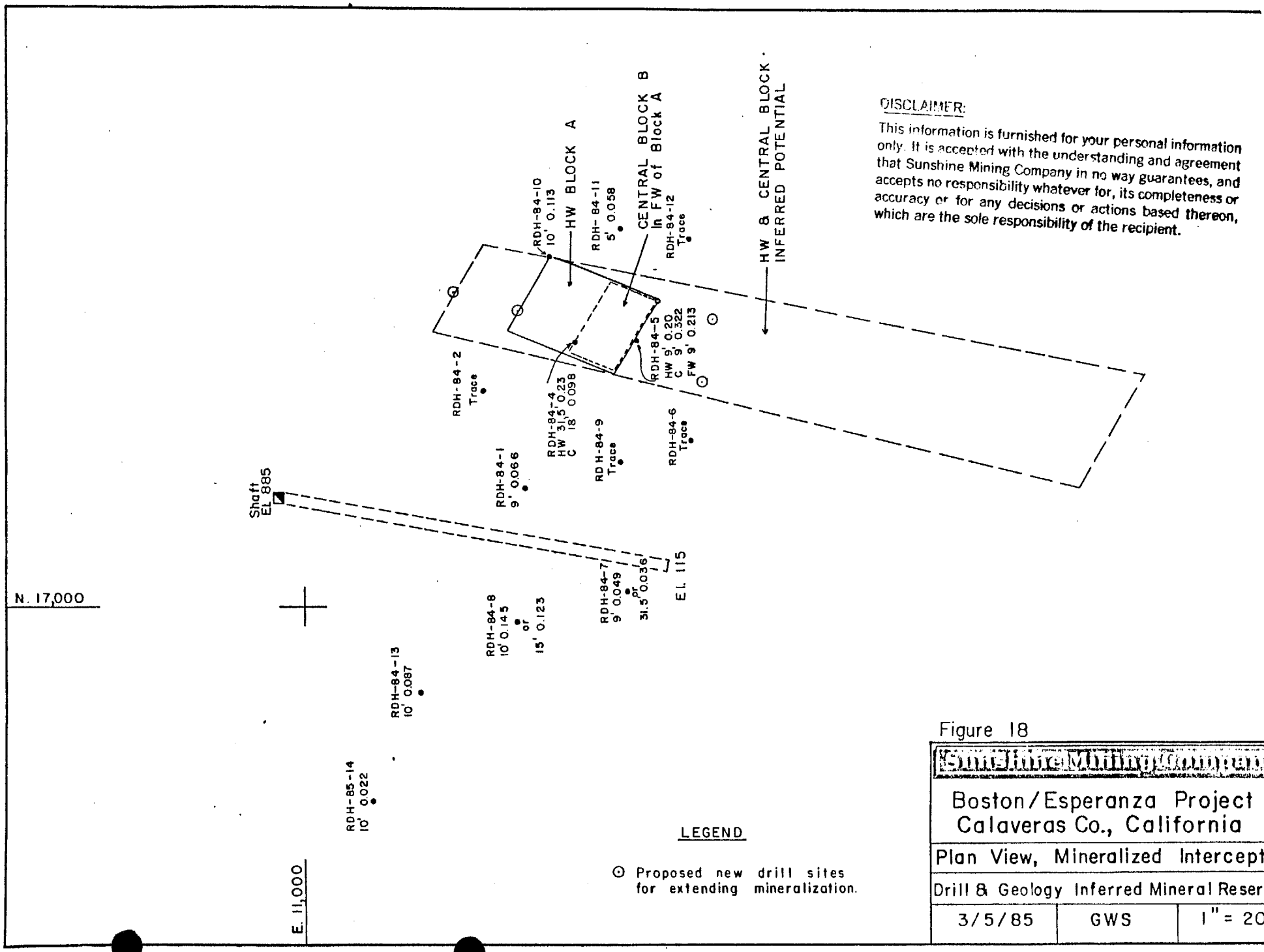
Figure 9

Sunshine Mining Company

Boston/Esperanza Project
Calaveras Co., California

Contours of Hanging Wall
Location & Elevation Drill Stations
Location & Elevation Hanging Wall

2/19/85	GWS	1" = 200'



DISCLAIMER:

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Figure 18

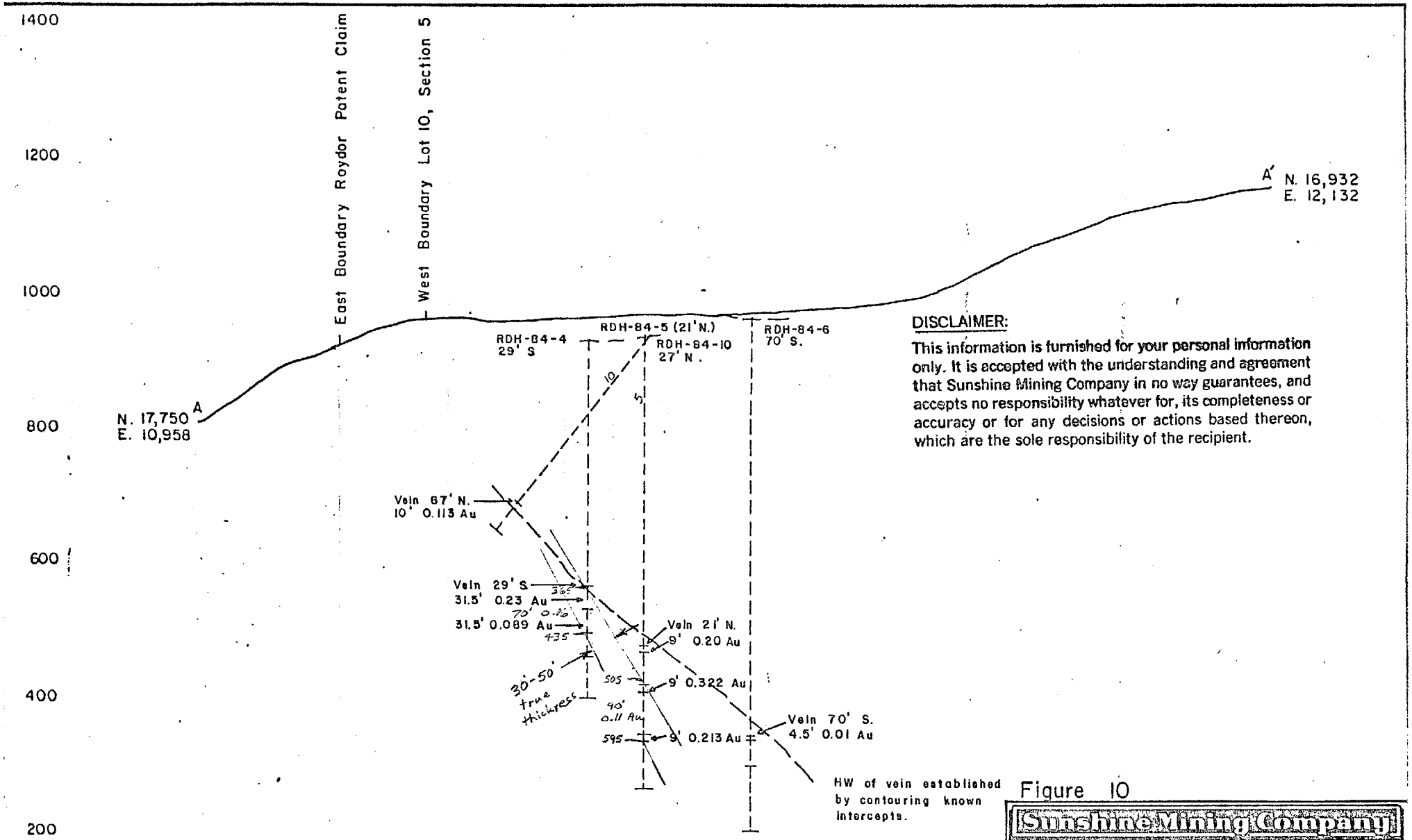
Sunshine Mining Company

Boston/Esperanza Project
Calaveras Co., California

Plan View, Mineralized Intercepts

Drill & Geology Inferred Mineral Reserves

3/5/85	GWS	1" = 200'



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This information is furnished for your personal information only. It is accepted with the understanding and agreement that Sunshine Mining Company in no way guarantees, and accepts no responsibility whatever for, its completeness or accuracy or for any decisions or actions based thereon, which are the sole responsibility of the recipient.

Figure 10

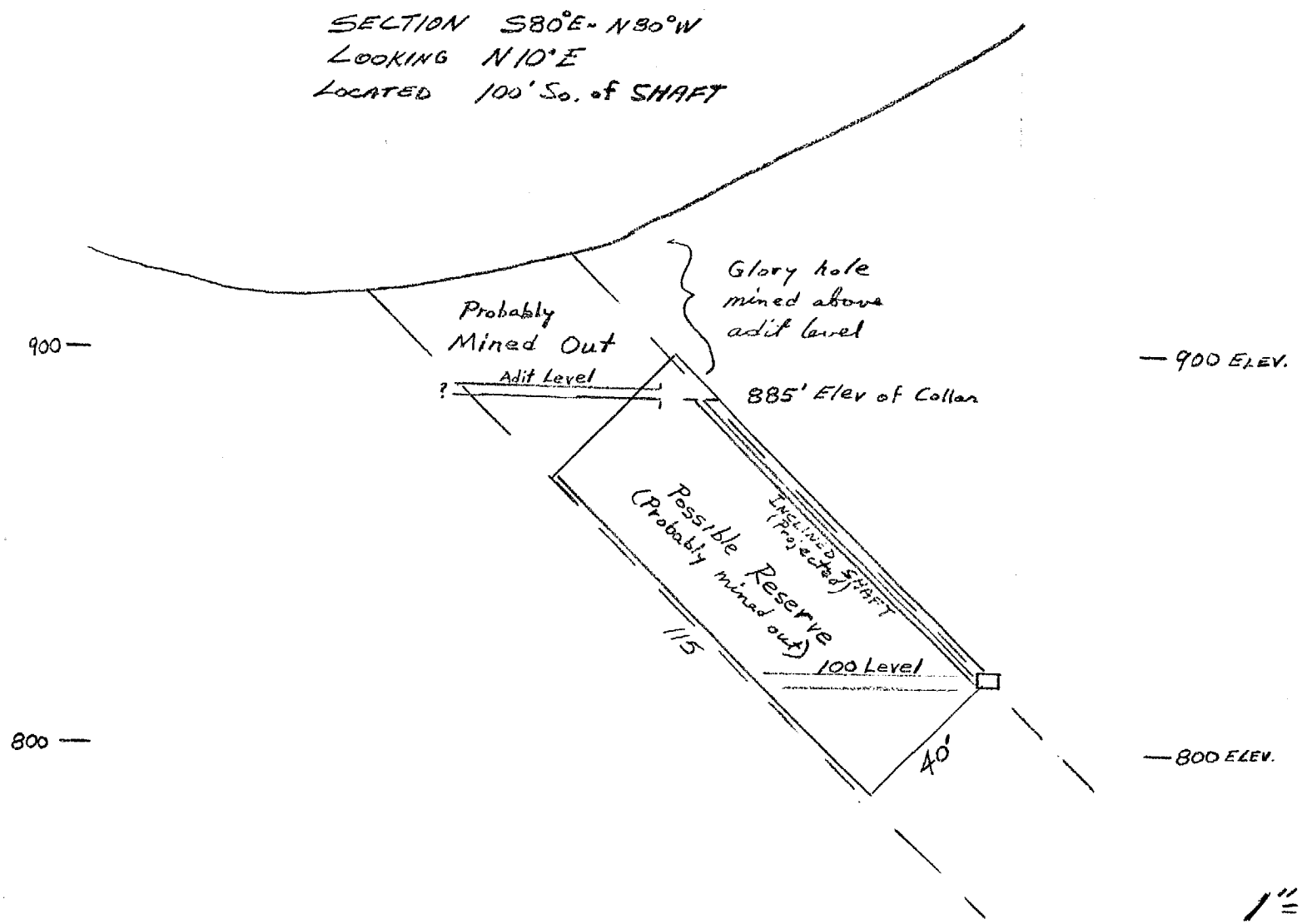
Sunshine Mining Company

Boston / Esperanza Project
Calaveras Co., California

Vertical Section Looking North

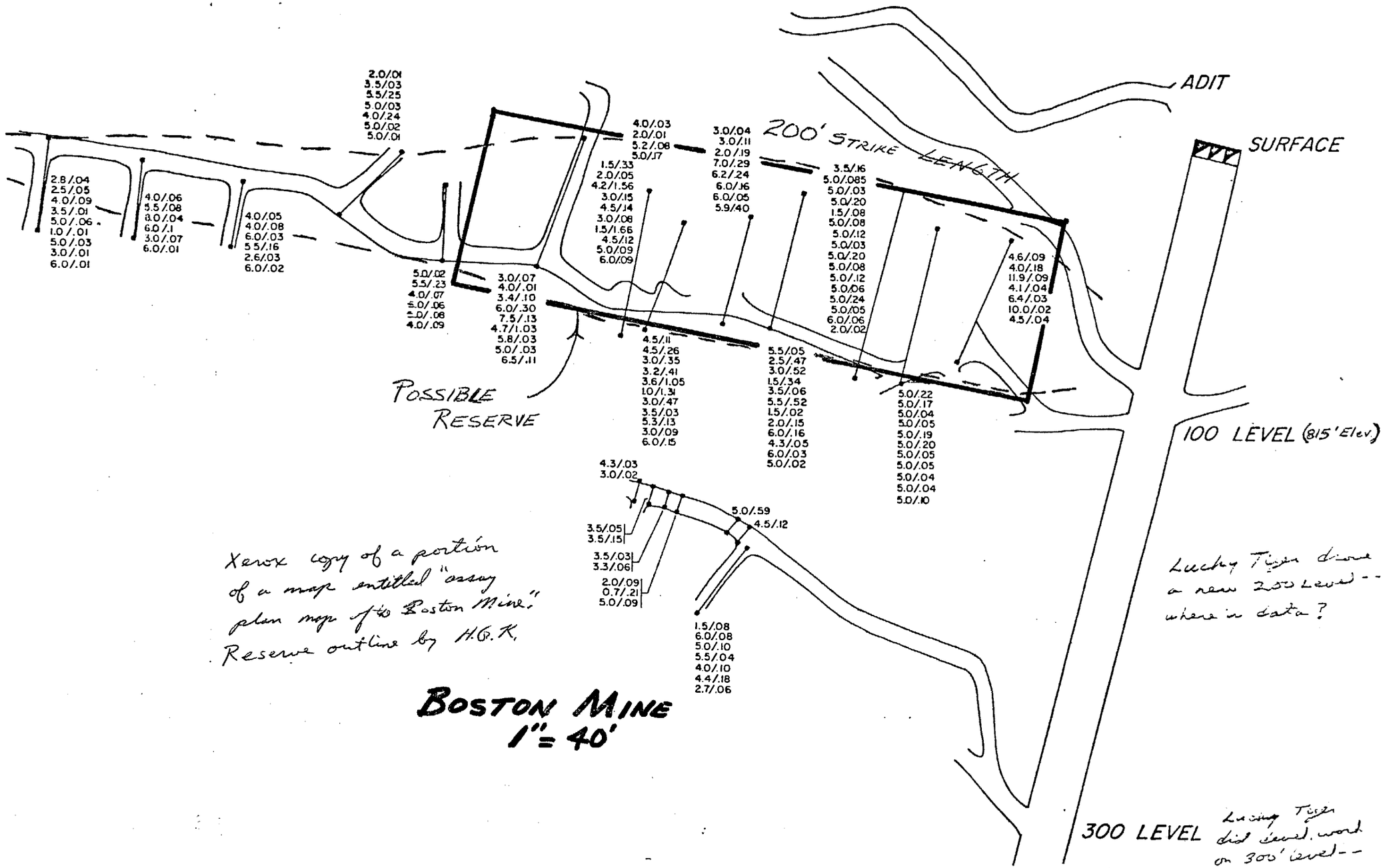
Bearing N 60° W.

2/19/85	GWS	1" = 200'



1" = 40'

SKETCH SECTION
BOSTON MINE
CALAVERAS CO. CALIF
H. G. KREIS 1-1985


ADIT
SURFACE
200' STRIKE LENGTH
POSSIBLE RESERVE
100 LEVEL (815' Elev.)
300 LEVEL
2.0/.01
3.5/.03
5.5/.25
5.0/.03
4.0/.24
5.0/.02
5.0/.01
2.8/.04
2.5/.05
4.0/.09
3.5/.01
5.0/.06
1.0/.01
5.0/.03
3.0/.01
6.0/.01
4.0/.06
5.5/.08
8.0/.04
6.0/.1
3.0/.07
6.0/.01
4.0/.05
4.0/.08
6.0/.03
5.5/.16
2.6/.03
6.0/.02
5.0/.02
5.5/.23
4.0/.07
5.0/.06
5.0/.08
4.0/.09
3.0/.07
4.0/.01
3.4/.10
6.0/.30
7.5/.13
4.7/1.03
5.8/.03
5.0/.03
6.5/.11
4.0/.03
2.0/.01
5.2/.08
5.0/.17
1.5/.33
2.0/.05
4.2/1.56
3.0/.15
4.5/.14
3.0/.08
1.5/1.66
4.5/.12
5.0/.09
6.0/.09
4.5/.11
4.5/.26
3.0/.35
3.2/.41
3.6/1.05
1.0/1.31
3.0/.47
3.5/.03
5.3/.13
3.0/.09
6.0/.15
3.0/.04
3.0/.11
2.0/.19
7.0/.29
6.2/.24
6.0/.16
6.0/.05
5.9/.40
5.5/.05
2.5/.47
3.0/.52
1.5/.34
3.5/.06
5.5/.52
1.5/.02
2.0/.15
6.0/.16
4.3/.05
6.0/.03
5.0/.02
3.5/.16
5.0/.085
5.0/.03
5.0/.20
1.5/.08
5.0/.08
5.0/.12
5.0/.03
5.0/.20
5.0/.08
5.0/.12
5.0/.06
5.0/.24
5.0/.05
6.0/.06
2.0/.02
5.0/.22
5.0/.17
5.0/.04
5.0/.05
5.0/.19
5.0/.20
5.0/.05
5.0/.05
5.0/.04
5.0/.04
5.0/.10
4.6/.09
4.0/.18
11.9/.09
4.1/.04
6.4/.03
10.0/.02
4.5/.04
4.3/.03
3.0/.02
3.5/.05
3.5/.15
3.5/.03
3.3/.06
2.0/.09
0.7/.21
5.0/.09
5.0/.59
4.5/.12
1.5/.08
6.0/.08
5.0/.10
5.5/.04
4.0/.10
4.4/.18
2.7/.06
Xerox copy of a portion of a map entitled "assay plan map of the Boston Mine." Reserve outline by H.G.K.
Lucky Tiger drove a new 200 Level -- where is data?
Lucky Tiger did level work on 300' level --
BOSTON MINE
1" = 40'

~~JHC~~ - ER File

ASARCO

Southwestern Exploration Division

October 23, 1985

J. H. C.

NOV 13 1985

To: J. D. Sell

From: H. G. Kreis

Large Hydrothermal Systems
Barstow Area
San Bernardino Co., Calif.

The attached exploration record sheet gives a good picture of a new-to-Asarco hydrothermal environment that is evolving from my work in the Barstow area and that work which was done by others in the Cady Mountain area. I hope to get a better understanding of it as my work at Cady progresses, and at some time in the near future we'll have to decide how much time and money should be invested in it.

H. G. Kreis

H. G. Kreis

HGK:mek
Att.: Gem Mine ERS

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
GEM MINE (Chambers Boron)	USA	California
	④ USGS Quad. Daggett (15')	⑤ File or Core No. San Bernardino Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°48'	116°52'30"	San Bernardino	8N	1E	9,10	H.G.Kreis	Sept.1985
						⑪ Office SWED-Tucson	⑫ Field Days 1

Section II Sources of Information

Date Typed 10/22/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Dibblee, 1970, Geol. Daggett Quad., I-592				
Asarco Files				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geologic Interest

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Colemanite	Not Known	8-18% B_2O_3

⑰ Reserves

[ ] Measured Commodity	[ ] Estimated Tons	Grade
Not Known		

⑱ Num. Drill Holes ≥ 4

Approx Total Footage >1000

⑲ Excavations Adit

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals B_2O_3

㉔ Ore Minerals-Major Colemanite Minor

㉕ Host Rocks-Major Shale sandstone limestone Minor

㉖ Age of Host Rocks Miocene

㉗ Nature of Exposures Sufficientley good exposures of lacustrine sediments for recon examination of stratigraphy and geochemistry.

㉘ Alteration Weak clay-carbonate alteration may be present but difficult to distinguish from lacustrine clays and carbonates. ㉙ Total Extent Probably basin wide.

㉚ Structure Bedding has an east-west strike and a moderate north dip except at the Gem Mine where the sediments are overturned and south dipping.

㉛ Ore Occurrence The Gem Mine was examined to check for a reported gold occurrence and to check for possible Ag-Au mineralization associated with the borate mineralized lacustrine sediments. (Continued) ㉜ Age of Mineralization Miocene (?)

㉝ Conclusions & Recommendations The hydrothermal environment represented at the Gem Mine and at the Cady Mountain silver bearing sinter is a new environment to Asarco's exploration program. Thus far our initial exposure to this environment suggests it may be of basin extent but only locally does it produce a celestite deposit (world's largest), borate prospects, and at least one silver prospect (Cady Mountain). There is a possibility that Asarco's Waterloo Deposit might be related to this hydrothermal activity. Waterloo, for example, is a (continued)

(For additional space use extra sheets)

31. Ore Occurrence (Continued from page 1)

The reported gold occurrence was not located nor was there any evidence it ever existed. The geology of the colemanite bearing lacustrine sediments was found to be interesting and a reconnaissance examination was made.

The lacustrine sediments are composed of various combinations of fine-grained sand, clay, and carbonate (calcite). Bedding in the lacustrine sediments is well developed, and they have been tilted and locally overturned. A well exposed outcrop of limestone beds exhibits conformable lenses of quartz that vary in form from chert like to sinter-replacement like. Colemanite occurs as thin, 4' thick, lenses in shaly sediments.

Overlying the lacustrine sediments is fluvial conglomerate. Stratigraphically beneath the lacustrine sediments is a 50' thick bed of tuff. Beneath the tuff and resting on quartz monzonite bedrock is a fluvial conglomerate having a calcite rich matrix. The calcite in the conglomerate matrix is anomalously abundant and may be hydrothermal in origin.

Geochemically, the lacustrine sediments are highly anomalous in As, Sb, Mo, Cd, and Tl. Additional anomalous metals can be expected in E-spec. analysis (yet to be done). Rock chip and rotary cuttings of the lacustrine sediments contain 10 to 370 ppm As, 6 to 16 ppm Sb, 2-30 ppm Mo, locally 1 to 5 ppm Cd, and locally 1 to 9 ppm Tl. Nearly all the highest geochem values occur in the chert-sinter rich limestone of sample #11.

The underlying calcite-in-matrix conglomerate carries 6 to 20 ppm As and 4 to 8 ppm Sb. This is further evidence that the calcite in the matrix is of hydrothermal origin.

The lacustrine sediments and the underlying fanglomerate have been subjected to hydrothermal activity that produces a minimum of visual effects. However, I suspect a detailed inspection of the mineralogy of these sediments would show that some clay, carbonate, and quartz (cherty-sinter quartz) are products of hydrothermal alteration-mineralization. I further suspect this hydrothermal activity is of, at least, basin-wide extent.

Five miles to the south, in Sections 2 and 3 (T7N, R1E), there are conglomerates with anomalous As and Sb (see H.G.Kreis' ERS on Placer Gold at Mt. Ord, in progress). Thirty miles to the east, at Cady Mountain the environment is very similar to that at the Gem Mine. At Cady Mountain highly anomalous Ag, As, Hg, Mo, Pb, and Sb occurs in limestone hosted quartz sinter; and nearby are celestite bearing lacustrine sediments which I also expect to find anomalous in these elements (work in progress).

31. Ore Occurrence (Continued from page 2)

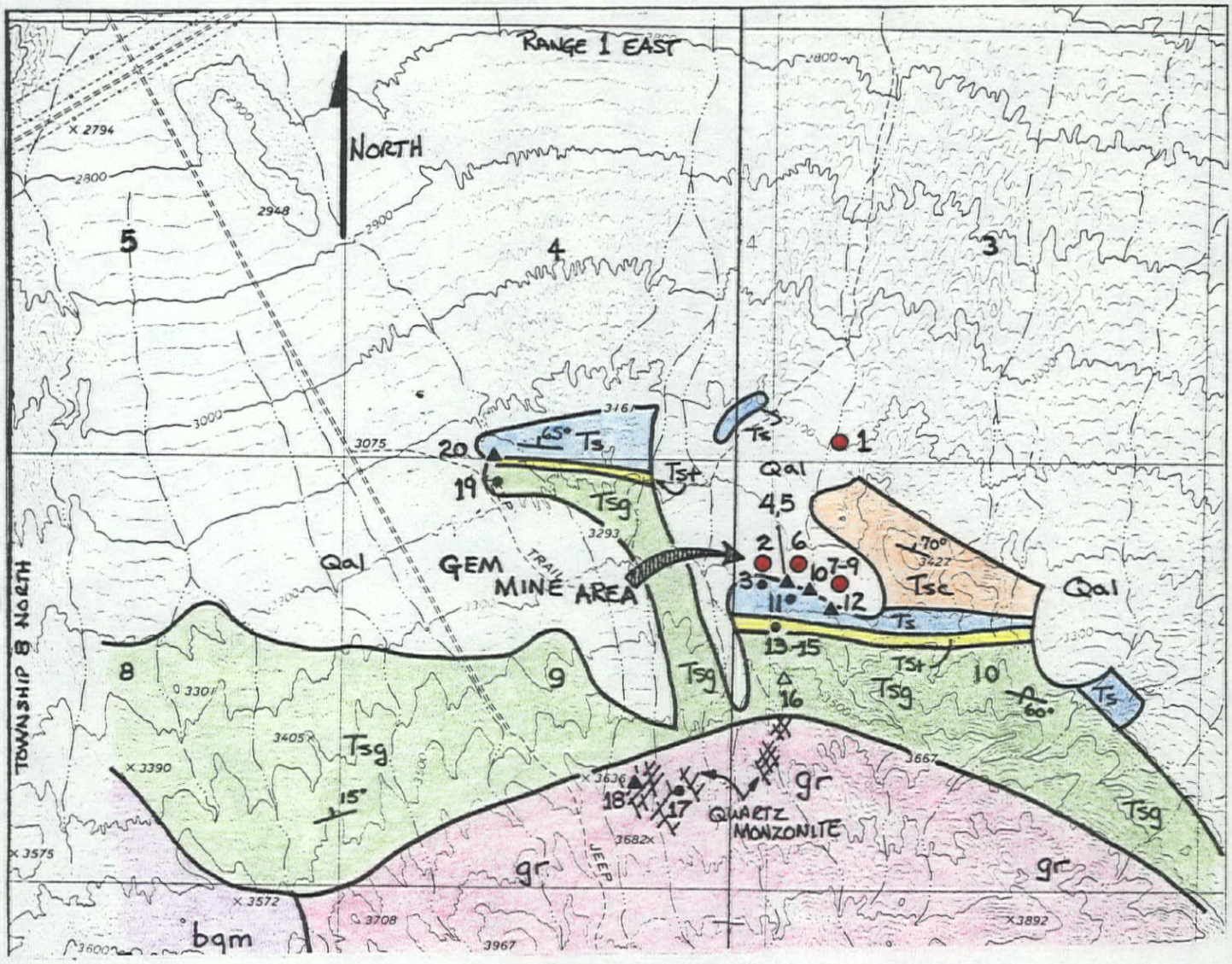
The mineral rights of the Gem Mine area and areas of outcropping lacustrine sediments to the northwest are controlled by unpatented claims belonging to U.S. Borax (since 1980).

33. Conclusions & Recommendations (Continued from page 1)

large sulfate deposit in the form of barite and Cady Mountain is a sulfate deposit in the form of celestite ($SrSo_4$).

The occurrence of silver in this hydrothermal system is documented at Cady Mountain and casually suggested by the possible association of the Waterloo deposit. Even though all the indicator elements are present, the occurrence of gold in this system has yet to be documented. So far the only hint of gold occurs in - MnOx of a travertine vein (1.6 ppm Au) and in nearby MnOx mineralized conglomerate-breccia (0.07 ppm Au) (Ord Mountain Placer Gold Area, H.G.K.'s ERS, 10/85).

Too little is known about this hydrothermal system to know if it is likely to produce a bulk tonnage precious metal deposit. I plan to learn more about it as my work at Cady Mountain progresses.



Qal	Quaternary alluvium and fanglomerate	gr	Mesozoic granite
Tcs	Miocene conglomerate	bqm	Mesozoic biotite quartz monzonite
Ts	Miocene lacustrine sediments (ss,lms,slt,sh)	50°	attitude of bedding
			overturned bedding
Tst	Miocene tuff	0.05 10	rock chip sample
		0.01 11	drill hole sample
Tsg	Miocene granite conglomerate	0.01 12	sediment sample

9-25-85 omitted

Geology taken from Dibblee,1970, Geol.Daggett Quad. I-592

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: Daggett & Minneola Ca. 7.5'

Twsp.: 8 N **Rng.:** 1 E. **Sec.:** 3,4,8-10

Prospect Name: Gem Mine Area

Owner: _____

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

State: California

County: San Bernardino

District: _____

SCALE: 1"=2000'

MILS and/or Terradata # _____ / _____

map no. 6304 **date** 10/17/85

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 449
October 16, 1985
9-25-85-1 TO 9-25-85-20

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 7 Cuttings, 6 Rock Chips and 7 Soil Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
1	9-25-85-1 R.D.H.C.	<.02	<.05	10.	6.	2.
2	9-25-85-2A "	<.02	<.05	6.	6.	2.
3	9-25-85-2B "	<.02	.05	135.	10.	20.
4	9-25-85-3 Sandstone	<.02	<.05	26.	8.	2.
5	9-25-85-4 Sed. S	<.02				
6	9-25-85-6 R.D.H.C.	<.02	<.05	155.	6.	30.
7	9-25-85-7 "	<.02	<.05	14.	8.	2.
9	9-25-85-9 "	<.02	.15	50.	6.	2.
10	9-25-85-10 Sed. s	<.02				
11	9-25-85-11 Lms & "chert"	.02	.45	370.	16.	12.
12	9-25-85-12 Sed S.	<.02				
13	9-25-85-13 "	<.02				
14	9-25-85-14 Fanglom.	<.02	<.05	20.	4.	2.
15	9-25-85-15 "	<.02	<.05	10.	4.	2.
16	9-25-85-16 Sed s.	<.02				
17	9-25-85-17 Q.M. porph	<.02	<.05	55.	4.	2.
18	9-25-85-18 Sed s.	<.02				
19	9-25-85-19 Fanglom	<.02	<.05	6.	8.	2.
20	9-25-85-20 Sed. s.	<.02				

R.D.H.C. = Rotary drill hole cuttings
Sed. S. = Wash-drainage sediment sample, -10 mesh.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
1	9-25-85-1	<1.	<.1	<1.	14.	<1.
2	9-25-85-2A	<1.	<.1	<1.	10.	<1.
3	9-25-85-2B	<1.	5.0	7.	12.	<1.
4	9-25-85-3	<1.	1.0	2.	14.	<1.
6	9-25-85-6	<1.	1.9	7.	18.	<1.
7	9-25-85-7	<1.	<.1	<1.	28.	<1.
9	9-25-85-9	<1.	.1	1.	75.	<1.
11	9-25-85-11	<1.	.1	9.	8.	<1.
14	9-25-85-14	<1.	<.1	<1.	8.	<1.
15	9-25-85-15	<1.	<.1	<1.	8.	<1.
17	9-25-85-17	<1.	.4	<1.	4.	<1.
19	9-25-85-19	<1.	<.1	<1.	6.	<1.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L.
LEHMBECK
CERTIFICATE SIGNED
Arizona U.S.A.

William L. Lehmbeck
Manager

10/16/85

GEM MINE

SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. TAJ 449A
November 7, 1985
9-25-85-1 TO 9-25-85-20

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 4 Pulp Samples

The attached pages comprise this report of analysis. Values are reported in parts per million (ppm), except where otherwise noted, to the nearest number in the series 1, 1.5, 2, 3, 5, 7, 10, etc. within each order of magnitude. These numbers represent the approximate boundaries and midpoints of arbitrary ranges of concentration differing by the reciprocal of the cube root of ten. The 'accepted' value is considered to be within + or − 1 step of the range reported at the 68 % confidence level and within + or − 2 steps at the 95 % confidence level.

William L. Lehmbeck
Manager

11/8/85

cc: Ms. Mary Kavanagh and
Mr. James D. Sell

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 449A
PAGE 2

ITEM NO.	SAMPLE NO.
3	= 9-25-85-2B
4	= 9-25-85-3
11	= 9-25-85-11
14	= 9-25-85-14

ITEM	3	4	11	14
ELEMENT	RDHC.	Sand-stone	Lms-"chert".	Fanglom.
Fe	5%	5%	5%	5%
Ca	5%	5%	>20%	2%
Mg	2%	1%	1%	1%
Ag	<1	<1	<1	<1
As	<500	<500	<500	<500
B	10000	1000	1000	10
Ba	2000	500	100	1000
Be	<2	<2	<2	<2
Bi	<10	<10	<10	<10
Cd	<50	<50	<50	<50
Co	<5	<5	<5	<5
Cr	20	20	100	50
Cu	20	10	7	10
Ga	10	10	<10	30
Ge	<20	<20	<20	<20
La	<20	<20	<20	<20
Mn	1000	1000	5000	1000
Mo	10	<2	10	5
Nb	20	20	20	20
Ni	10	5	5	10
Pb	200	100	200	100
Sb	<100	<100	<100	<100
Sc	<10	<10	<10	<10
Sn	<10	<10	<10	<10
Sr	>10000	5000	2000	<100
Ti	1000	2000	300	3000
V	50	50	30	50
W	<50	<50	<50	<50
Y	<10	<10	<10	<10
Zn	700	300	<200	<200
Zr	<20	200	50	200

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

GEM MINE AREA
SEC 9 & 10 T8N, R1E
5 mi So. of Daggett

H. G. KREIS
9-1985
1/2

9-25-85-1 Sample, -10 mesh (most of cuttings pile this size) a Rotary drill hole (deep) cuttings; tarnish gray colored, fine grained sand.

-2 a & b Sample of cuttings. Recent drill hole. Small piles of cuttings of sediments
-2a top half of hole; 30 piles ≐ 300'.
-2b bottom " " " ; " " " ".
Gray and white limey sediments w/ 60' tuff bed in top half.

-3 Rock chips sample 50' trench across bedding. One of 3 parallel trenches. Gray colored, limey, tuffaceous(?), muddy, fine grained sandstone. Bedding N85°E, 65°S.

-4 Sample of wash sed., -10 mesh.

-5 Float, no sample, white, aggregoidal qtz with black calcite vein (1" thick) & calcite with 1/8" limonite crust along one side.

-6 Sample, rotary drill hole cuttings ("GEM-2" on stake)

-7 Sample, rotary drill hole cuttings (drilled within last month). Light gray colored & v.f.g. cuttings limey mudstone laid out in piles -- all have uniform geology (no changes).

-8 Sample of contents of paper type envelope labeled "GEM-5, 890-900." Same geol. as -7.

-9 Sample of cuttings laid out in piles 50'S of those at #7. These cuttings are grayish tan colored, limey mudstone and are probably the upper, more oxidized portion of the hole. 44 little piles, each probably 10' of hole (0-440'?)

9-25-85-10 Sample, drainage sed., -10 mesh.

-11 Rock chip sample. Marl, FeO_x stained and cherty (black lenses) N85°W, 72°S bedding.

-12 Drainage sed. sample, -10 mesh.

-13 Drainage sed sample in drainage of dump of adit, -10 mesh.

-14 Rock chip sample, 0-40' into adit. Calcite cemented fanglomerate (hot springs calcite?)

-15 Rock chip sample, 40-75' (end of adit) into adit. Same geol. as #14.

-16 Wash sed sample, -10 mesh.

-17 Rock chip sample of calcite cemented, shattered qtz mons porph with red FeO_x stain. Rib 4'x20'. V. strong shattering of rock

-18 Sample, -10 mesh portion of qtz mons gneiss. FeO_x stained zone 10' (strongest) to 50' wide in fresh qtz mons. Rare qtz veinlets (east end).

-19 Sample, rock chip, 3'x10' outcrop of calcite cemented fanglomerate. Further down stream there are more outcrops, a couple show mod. to steep northerly dips.

-20 Wash sed. sample, -10 mesh taken in wash cut through tuff bed. Nearby sed. strike N85W & dip 65°N

#

JHC-ER File

ASARCO EXPLORATION RECORD

J. H. C.

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

DEC 13 1985

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
ORD MOUNTAIN PLACER GOLD AREA	USA	California
	④ USGS Quad. Ord Mt. 7½'	⑤ File or Core No. San Bernardino Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°43''	116°51'30''	San Bernardino	7N	1E	2-4, 10,11	H.G.Kreis	Sept.'85
						⑪ Office SWED - Tucson	⑫ Field Days 4

Section II Sources of Information

Date Typed 10/22/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Asarco Files				
Diblee, 1964, Geologic Map of the Ord Mts. Quad; I-427				
Weber, 1963, Geol. & Min. Dep. Ord Mt. Dist., Calif D.M&G Spec. Rpt. 77				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geol. Interest

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [X] Placer Gold
- [X] Hot Springs
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
V. minor placer gold		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage

⑲ Excavations Rare dozer cut

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Placer Au, Au in MnOx-travertine, and Anomalous As-Sb

㉔ Ore Minerals-Major Gold Minor

㉕ Host Rocks-Major Fanglomerate, quartz monz. Minor

㉖ Age of Host Rocks Tertiary Mesozoic

㉗ Nature of Exposures Poor exposures of fanglomerate, fair exposures of quartz monzonite, good exposures of conglomerate-breccia (?).

㉘ Alteration Clay alteration along travertine vein; otherwise, little visual alteration assoc. with hot springs. ㉙ Total Extent Poor exposures suggest minor extent.

㉚ Structure Travertine vein strikes N20°W, dips 65°E. Fanglomerate dips gently to the northwest.

㉛ Ore Occurrence The area shown on the attached map was examined to (1) determine the source of the placer gold and (2) determine if the nearby hydrothermal (hot springs) activity is capable of (continued) ㉜ Age of Mineralization Tertiary hot springs.

㉝ Conclusions & Recommendations The placer gold in the present day drainages was derived from the fanglomerate. Without outcrops or trenches, there is no way of knowing if the gold in the fanglomerate is placer gold or hypogenetic gold associated with the hydrothermal As-Sb mineralization that permeated the fanglomerate, here and on a basin wide scale.

While it would be advantageous to know the origin of the placer gold, it is important to recognize that at least traces (Continued) (For additional space use extra sheets)

31. Ore Occurrence (Continued)

producing gold mineralization.

Placer gold mineralization occurs in today's Quaternary drainages in the NW/4 Section 11 and at a few localities as far as a mile and a half to the northwest. The placer gold appears to be derived from the base of fanglomerate. The gold bearing fanglomerate exists as thin caps on ridges of underlying quartz monzonite. Unfortunately, the fanglomerate is covered by its own errosional debris and outcrops are rare. There is no way of determining if the gold exists in the fanglomerate in placer form or in a hypogenetic form originating from the hot springs activity described below.

There is some evidence for a placer origin and some evidence for a hypogenetic origin. The gold could easily be a placer deposit formed from the gold veins of the Mount Ord District, one mile (uphill) to the east. This is a highly permissable interpretation, and I'm sure those who historically prospected the area assumed this to be the case. But there also exists good evidence for hypogenetic gold mineralization.

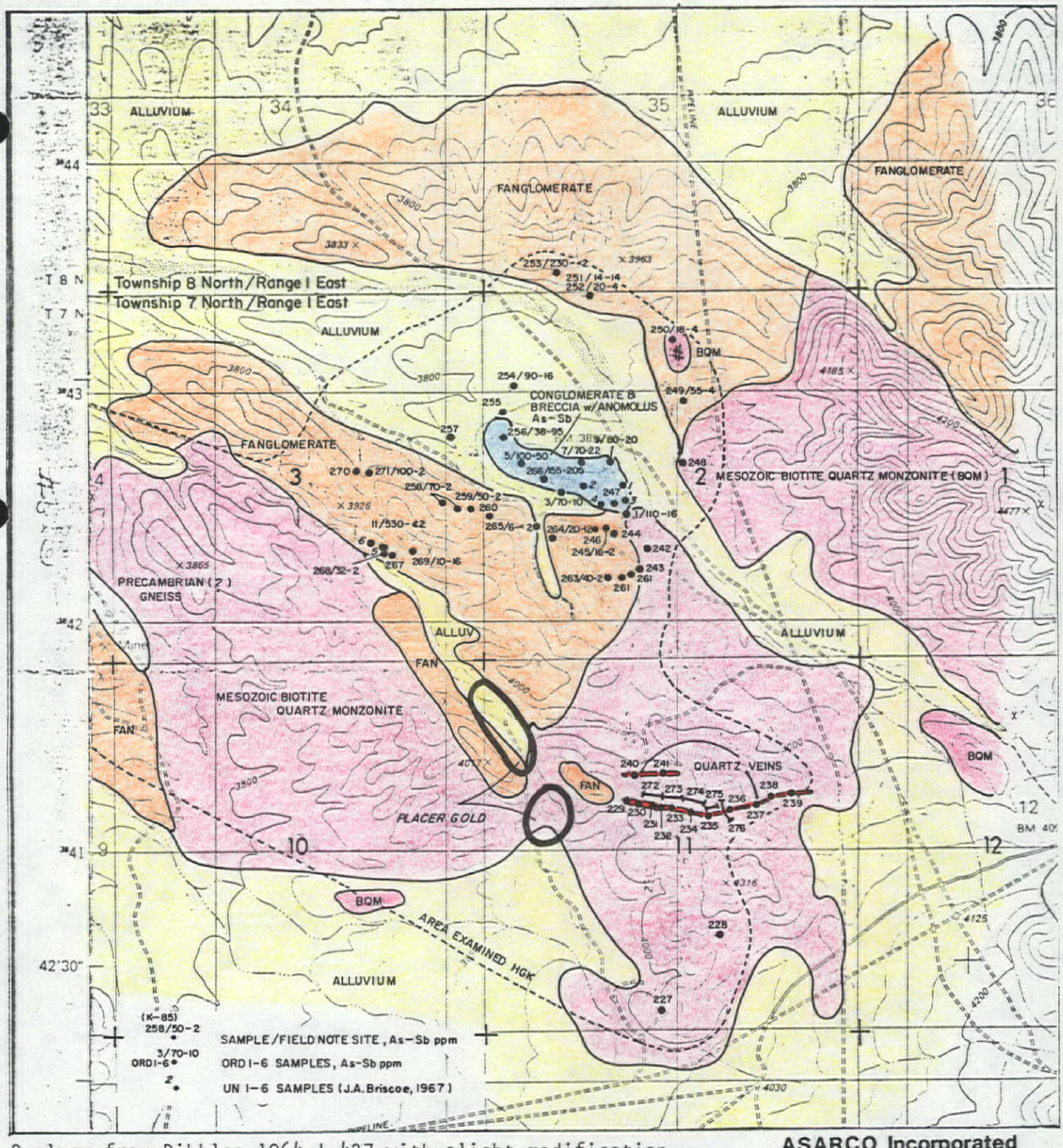
Hot springs hypogenetic gold mineralization is located 1/2 mile north of the gold bearing fanglomerates. At sample site Ord-11, K-85-267, and K-85-268, there is a travertine vein with local, minor amounts of MnOx carrying 1.6 ppm Au. Samples of the travertine vein and altered wall rock show anomalous As (up to 530 ppm). Two thousand feet northeast of the travertine vein is a 2000' by 400' outcrop of red conglomerate and conglomerate-breccia (?) carrying highly anomalous As and Sb. The most anomalous sample, K-85-266, contained 1% MnOx (visual estimate), 0.07 ppm Au, 155 ppm As, 205 ppm Sb, 12 ppm Tl, and 10 ppm Mo. Several other samples (Ord-3 to -7) averaged 80 ppm As, 30 ppm Sb, and 0.16 ppm Hg.

The anomalous gold values in the travertine (1.6 ppm) and conglomerate-breccia (0.07 ppm) suggest that at least local minor gold mineralization is associated with MnOx hot springs mineralization. The presence of indicator metals, As and Sb, is encouraging, and these indicator metals fit into a basin wide hydrothermal system. This basin wide hydrothermal system characteristically carries As and Sb, and it is described in greater detail in my exploration record sheet "Gem Mine" (October 1984).

33. Conclusions & Recommendations (Continued)

of gold mineralization occur in the hydrothermal As-Sb mineralization. Although no target of current interest exists in the area of this examination, it is possible that further reconnaissance of As-Sb mineralized fanglomerate and lacustrine basin sediments could lead to a target.

I'll be learning more about this environment as my work on the Cady Mountain silver bearing sinter progresses; and, at some time in the near future, I'll be in a better position to decide what effort should be devoted to this environment.



Geology from Dibblee, 1964, I-427, with slight modification.

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: Ord Mountain, Ca. 7.5'

Twsp.: 7-8N **Rng.:** 1E **Sec.:** 1-3, 10-12

Prospect Name: Mt. Ord Placer Gold Area

Owner: _____

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

State: California

SCALE: 1"=2000' approx.

County: San Bernardino

District: _____

MILS and/or Terradata # _____ / _____

map no. 6309 **date** 10/22/85

H.G. Kreis
SEPT. 1985

FIELD NOTES

MT. ORD PLACER GOLD AREA

K-85-242 Med.-g ⅔ mons. All bio. and/or bbl's have been altered. Tr epidote / local pale green coloration of plagioclase

-243 Sed. sample, -10 mesh. Much float (subcrop?) of strongly specularite altered rock (uncertain rock type -- obscured by alt'n)

-244 Sample, alluvium cemented by caliche in prospect pit. 3' thick caliche cap. Abundant specularite altered, angular clasts.

-245 Sample, caliche in prospect pit, >4' thick. Prospected by ½ doz. small pits (as small as 2'x1'x1'). Possible hot springs origin?

-246 Sed. sample (-10 mesh), taken 50' south of -245 & on north edge of road so it tests drainage from caliche area and cemented Qal on north.

-247 Conglom. Bright red, hard matrix with angular fragments. Looks identical to deep, red stained conglom. at Santa Cruz Project (Casa Grande, AZ). Hard & siliceous nature of matrix, anomalous As-Sb (see ORD-1 to -5 samples of 1982), bright red color and local suggestion of micro solution channels suggests hot springs activity may have cemented the conglom. or at least acted upon it.

-248 Small, 1'x½'x4', outcrop of bio. qtz mons. Prospect pits appear to have been dug in search of source of qtz & qtz-spec. vein float.

K-85-249 Soil-reddish debris of weathered tanglomerate sampled, -10 mesh.

-250 Float sample (clast of tanglom). Bright red "brick"; apparently a volc. rock with weak to strong chalcedonic silica replacement.

The qtz monz outcrops nearby display typical greenish-gray coloration -- 2nd bio, pale green sericitization of plag, and local disem specularite

-251 Float sample. Qtz monz breccia (angular fragments) with 10-25% black qtz-MnOx matrix (some specularite??).

-252 Float sample. Same geol, as -250 ("brick")

-253 Sample, -10 mesh; transported, weathered, red tanglomerate matrix. Some nearby volcanic breccia-agglom. outcrops (intra formational?).

-254 Sample of float of red conglomerate -- possible subcontacts.

-255 Wash sed. sample from drainage along north side of conglom.

-256 Sample, jasperoid float weathering out of red conglom; not known if it goes on parent intra conglom formation

-257 Wash sed. sample, -10 mesh; drainage from southwest & west sides of conglom

#

K-85-258 Sed. sample of two drainages ≈ 150' apart, -10 mesh.

-259 Float sample, weakly to mod. silicified (jasperoid) spherulitic volc. -- red colored.

-260 Small outcrop (?), sample. Qtz mong. with weak specularite

-261 Wash sed. sample.
-262 " " "

-263 Float of outcrop. Qtz mong with brownish black (FeO_x-MnO_x) stain on fract and appears to be weakly sericitized (plag) with spec. in 2nd bio.

-264 Sample, 2-1'x1'x1' boulders of float (outcrop??). F.g. qtz mong breccia with 10-20% black (MnO_x?) siliceous matrix. Locally vuggy as if subjected to hot springs activity. Going south, up wash, there are large boulder outcrops of porphyritic andesite and qtz mong frag in an andesitic(?) matrix -- volcanic breccia. This sample is probably volcanic breccia and not a hydroth. infilled bxa.

-265 Sample, wash sed. sample, -10 mesh.

-266 Sample; 1% MnO_x in vuggy breccia of f.g. qtz mong (porphyritic) fragments. MnO_x coats what appears to be vuggy solution channels. Most if not all fragments are fine-med grained qtz mong & qtz mong porph. No hot springs deposit type alt. Origin of breccia is not known. All frag. are angular and most are <6" in diam. (some 1' diam.). Matrix is hard to identify.

K-85-267 Sample, weakly clay altered tuff/breccia with 5% calcite. 4' to east of travertine vein. 3' long sample. Apparently not a wallrock

-268 Sample, 6' long, 6' to 12' into E. wall from travertine. Totally crushed, gouge, qtz mong with weak clay alt^n and calcite.
Travertine & Mn ox striker N20W and dips 65°E and is hosted by gouge, faulted qtz mong of unknown thickness but appears travertine & gouge is at least 20' wide at this site

-269 Sample Qtz mong breccia cemented by 10% siliceous black colored matrix. Boulder sized float.
Top of ridge appears to be conglomerate, some questionable boulders or outcrop of qtz mong. and white aphanite.

-270 Wash sed. sample, -10 mesh.
-271 " " " " " "

& check for gold in wallrock of qtz vn as per F.T.6.
-272 Sample, -10 mesh, soil-talus, 300' long, 50' north & 20' below qtz vn.
-273 " " " " " " " " " " "
-274 " " " " " " " " " " "
-275 " " " 200' " " " " " " "
-276 " " " , 200' along contour across qtz vn.

H. KREIS

ORD MOUNTAIN AREA
San Bernadino Co, Calif.

Aug. 9 - 1982

1982 MAP NUMBER

ORD QUAD

~~HK-1~~ Hill of multilithic breccia fragments set in red-brown sandy matrix which is hard but apparently not silicified. Graded bedding of fragements in near horizontal layers. Slope & ridge forming units appear to be present. At this station the breccia is in contact w/ small outcrop of f-g diorite. Between dio. & bxa. is dio. breccia and a gradational contact is present. The dio breccia has 3/4% micro qtz veining. No obvious alt^n in any of the rock. Locally 5% vugs, often lined w/ limonite. No obvious evid. of former sulfides.

ORD-1 Weakly silicified dio. breccia. Float of outcrop

~~HK-2~~ ORD-3 Volc. breccia. Hard, dark gray matrix > red matrix. 50' chip sample

~~HK-3~~ ORD-5 Volc. breccia; Hard, red matrix

~~HK-4~~ ORD-7 Volc breccia. Hard, reddish gray matrix. Noted traces of dark steel gray - black ~~shiny~~ shiny, platey mineral -- looks like specularite(?) (stibnite?).

~~HK-5~~ ORD-9 Volc. breccia. Hard red matrix traces black MnO_x(?). (½" jasperoid "plate" in float -- not included in sample, nor was any jasperoid noted in sample).

~~HK-6~~ ORD-11 MnO_x rich clayey flt.(?) gouge, 1' vertical sample of steeply SWly dipping zone of ? thickness. Travertine in hanging wall, not sampled, ~~out~~ strikes N30° W with vertical dip, & continues ≈ 500'; MnO_x is not continuous, apparently just a "pod" like area (but mostly covered).

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 205
September 20, 1982

ASARCO INCORPORATED
Attn.: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 9 Rock Chips and 2 Composite Samples

ITEM	SAMPLE NO.	Au ppm	As ppm	Hg ppm	Sb ppm	Ag ppm
1	ORD-1	<.002	110.	.12	16.	.2
2	ORD-3	<.002	70.	.10	10.	<.2
3	ORD-5	<.002	100.	.13	50.	.4
4	ORD-7	<.002	70.	.17	22.	<.2
5	ORD-9	<.002	80.	.16	20.	.2
6	ORD-11 MnOx ggge	1.600	530.	.04	<2.	<.2
~~7~~	~~ORD-13~~	~~<.002~~	~~10.~~	~~.03~~	~~<2.~~	~~<.2~~
~~8~~	~~ORD-15~~	~~<.002~~	~~20.~~	~~.01~~	~~<2.~~	~~.2~~
~~9~~	~~ORD-17~~	~~.140~~	~~<10.~~	~~.03~~	~~<2.~~	~~.2~~

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. F.A. Michel

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. TAJ 205
September 20, 1982

ASARCO INCORPORATED
Attn.: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 2 Composite Samples

The attached pages comprise this report of analysis. Values are reported in parts per million (ppm), except where otherwise noted, to the nearest number in the series 1, 1.5, 2, 3, 5, 7, 10, etc. within each order of magnitude. These numbers represent the approximate boundaries and midpoints of arbitrary ranges of concentration differing by the reciprocal of the cube root of ten. The 'accepted' value is considered to be within + or - 1 step of the range reported at the 68 % confidence level and within + or - 2 steps at the 95 % confidence level.

William L. Lehmbeck
Manager

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 205
PAGE 2

ITEM NO. SAMPLE NO.
10 = COMPO ORD-1,9
11 = COMPO ORD-3,5,7

ITEM	10	11
ELEMENT		
Fe	1.5%	2%
Ca	.2%	.1%
Mg	.2%	.3%
Ag	<1	<1
As	<500	<500
B	<10	20
Ba	1000	1500
Be	<2	<2
Bi	<10	<10
Cd	<50	<50
Co	<5	5
Cr	70	30
Cu	20	20
Ga	<10	<10
Ge	<20	<20
La	<20	20
Mn	2000	2000
Mo	<2	<2
Nb	<20	<20
Ni	7	7
Pb	30	15
Sb	<100	<100
Sc	<10	<10
Sn	<10	<10
Sr	<100	<100
Ti	1000	1500
V	10	30
W	<50	<50
Y	<10	10
Zn	<200	<200
Zr	70	100

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 448
October 16, 1985
K-85-243 TO K-85 276

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 17 Soils and 15 Rock Chip Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
1	K-85-243	<.02				
2	K-85-244	<.02				
3	K-85-245	<.02	<.05	16.	<2.	2.
4	K-85-246	<.02				
5	K-85-249	<.02	.15	55.	4.	2.
6	K-85-250	<.02	.15	18.	4.	4.
7	K-85-251	<.02	.10	14.	14.	2.
8	K-85-252	<.02	.35	20.	4.	2.
9	K-85-253	<.02	.05	230.	<2.	2.
10	K-85-254	<.02	.25	90.	16.	2.
11	K-85-255	<.02				
12	K-85-256	<.02	.90 ←	38.	95.	6.
13	K-85-257	<.02				
14	K-85-258	<.02	.10	70.	2.	2.
15	K-85-259	<.02	.20	50.	2.	2.
16	K-85-260	<.02				
17	K-85-261	<.02				
18	K-85-262	<.02				
19	K-85-263	<.02	.10	40.	2.	2.
20	K-85-264	<.02	.10	20.	12.	2.
21	K-85-265	<.02	.05	6.	<2.	2.
22	K-85-266	.07	.15	155.	205.	10.
23	K-85-267	<.02				
24	K-85-268	<.02	.10	32.	2.	2.
25	K-85-269	<.02	<.05	10.	16.	<2.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
26	K-85-270	<.02				
27	K-85-271	<.02	.05	100.	2.	2.
28	K-85-272	<.02				
29	K-85-273	<.02				
30	K-85-274	<.02				
31	K-85-275	<.02				
32	K-85-276	<.02				

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Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
3	K-85-245	<1.	<.1	<1.	8.	<1.
5	K-85-249	<1.	<.1	<1.	20.	<1.
6	K-85-250	<1.	<.1	<1.	6.	<1.
7	K-85-251	<1.	<.1	<1.	8.	<1.
8	K-85-252	<1.	<.1	<1.	6.	<1.
9	K-85-253	<1.	<.1	<1.	34.	<1.
10	K-85-254	<1.	<.1	<1.	16.	<1.
12	K-85-256	<1.	<.1	<1.	10.	<1.
14	K-85-258	<1.	<.1	<1.	50.	<1.
15	K-85-259	<1.	<.1	<1.	22.	<1.
19	K-85-263	<1.	<.1	<1.	34.	<1.
20	K-85-264	<1.	<.1	<1.	10.	<1.
21	K-85-265	<1.	<.1	<1.	34.	<1.
22	K-85-266	<1.	.1	12.	60.	<1.
24	K-85-268	<1.	<.1	<1.	65.	<1.
25	K-85-269	<1.	<.1	1.	10.	<1.
27	K-85-271	<1.	<.1	1.	50.	<1.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER CERTIFICATE 9425 WILLIAM L. LEHMBECK DATE SIGNED ARIZONA U.S.A.

William L. Lehmbeck
Manager

JHC - ER File

J.H.C.

DEC 13 1985

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: OZIER MINE AREA					② Country: U.S.A.	③ State or Province: California	
					④ USGS Quad.: Fawnskin 7½'	⑤ File or Core No.: San Bernardino Co.	
⑥ Latitude: 34°19'30"	⑦ Longitude: 116°53'30"	⑧ AMS Sheet: San Bernardino	Township: 3N	Range: 1E	Section: SE/4 20	⑨ Examined by: H.G. Kreis	⑩ Date: Aug.1985
						⑪ Office: SWED - Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 10/10/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Watson,B.,& Brisco,J., 1967 Ozier Mine, Exploration Note File				
Dibble,T., 1964, Geol. Map Lucerne Valley Quad., USGS I-426				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Future Interest

⑮

- [ ] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Minor placer gold		
Minor underground		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations: Small Exploration Pits

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Native Gold Minor: _____

㉕ Host Rocks-Major: Quartz monzonite Minor: Alluvium

㉖ Age of Host Rocks: Mesozoic

㉗ Nature of Exposures: Poor exposures of mineralization -- <5% exposures in exploration pits and rare outcrops. Approx. 50% outcrop in general area.

㉘ Alteration: Local clay-sericite in stronger quartz veining as at OZ-10; otherwise none.

㉙ Total Extent: See discussion of ore occurrence.

㉚ Structure: Prominent NW'ly striking, 15°-35° SW dipping joint set with apparently parallel quartz veining.

㉛ Ore Occurrence: In the Ozier Mine area gold is associated with fracture-joint controlled quartz-pyrite mineralization. The gold-pyrite-quartz mineralization has a strike length of 4,000' where it (continued)

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: This occurrence of low angled, gold mineralization is of geologic interest; but, a "best case" possibility of thickness and grade, say 40' at 0.7-1.0 ppm Au at the surface, is not of current interest. No further work is recommended in the Ozier Mine area at this time. This gold occurrence supports the potential for shallow dipping gold mineralization in the San Bernardino Mountains.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

31. Ore Occurrence (Continued from page 1)

has received the most exploration attention. The best looking mineralization extends from the Ozier Mine to OZ-10, a distance of 1500'.

Gold occurs in low angled joints and in associated local low angled quartz veining. The mineralized joints have pyrite (oxidized) and quartz (<0.1" thick) on widely spaced joints (1" to 2' apart) that dip 15° to 35° to the southwest. The abundance of pyrite and quartz over, say, a 5' thickness would be <1%. Outcrops with mineralized joints are impossible to reconnaissance sample because (1) the mineralization occurs as widely spaced grains on the joint surface and (2) the joints are strongly weathered, forming deep crevices in the rock. Because of extensive cover, the width of the mineralized joints is not readily determinable; but the width appears to be less than 50'. The width and grade of mineralized joints can only be determined with dozer cuts and large channel samples or drilling.

Samples OZ-5 and OZ-13 were taken from the dumps of prospect pits cut in joint type mineralization, and these dump samples are more representative than samples chipped off the walls. Samples OZ-5 and OZ-13 have 0.87 and 0.24 ppm gold respectively.

Locally the joints are sufficiently closely spaced and quartz filled to constitute a vein structure, as at OZ-9 and -10. Again, because of cover, the thickness of the vein structure is not readily determinable; but it appears to be between 10' and 50'. Samples OZ-9 and OZ-10 have anomalous gold values, 0.09 and 0.16 ppm respectively; but the values are not encouraging. The Old Ozier Mine probably was developed on higher grade spotty or shoot type gold mineralization.

Sample OZ-1 was taken off the dump of a partially filled in prospect pit which may or may not have penetrated bedrock beneath the soil cover. The reported gold value of OZ-1 is 0.57 ppm and duplicate assays varied up to 1.49 ppm indicating a coarse gold problem.

Numerous small prospect pits (no bedrock exposures) and spoils piles occur in the alluvium and grus along the west side of the mineralization. Most, if not all of this work, was directed at placer gold. Many of Watson's samples were taken from these dumps and piles. None of these samples ran >0.2 ppm Au, but it is possible the free gold was previously extracted.

Although it appears the mineralization in the area of this report typically carries ≤0.5 ppm Au, there is a good chance the average grade is much higher, possibly closer to 1 ppm Au. This premise is based on the nature of the mineralization, and the probability of a coarse gold problem.

OZIER MINE

SE/4 Sec 20, T3N, R1E

H.G. KREIS
8-25-1985

* = Sample Taken

GOLD (PPM)	1	2 Rock Type	3 Struct	4 Alt	5 Qtz	6 Py	7	8	9 Remarks
.59, 1.49	OZ-1*	Qm	N65W, 35SW Prom. joint	Bio weath. or alt.	≤1% vnlts	Oxid ¼%	Arastra across road (Pit may have reached bedrock)		Sample of dump. Prospect Pit
	-2	Qm	N60W, 35SW Prom. joint	"	Tr	In qtz. vn Local Tr	Visible Au in ⅛" hematite seam in qtz		" " s
	-3	Qal	Much digging & placering in wash.		Qtz-mag.-hem float in wash				Wash
	-4	Qm		"	Tr Qtz	Tr ox Py			Prospect Pit
.87	-5*	Dump Sample ± Qm	E-W, 20°S joints (2/ft.)	None	½%	0.2 (ox)	Prospect in bedrock. Thin veinlets of qtz-py on low & S. dipping joints. Just E. of OZ-1		
	-6	Qm	N45E, 20°SE joint (qtz-py)	"	"	"	Qtz-py vnlts on low & joints		
	-7	Qm	E-W, 15°S joint	"	None	None	No mineral for, at least, 100' (vert.) below		
	-8	Qm	N75W, 22S joints	"	Tr	0.2 (ox)			
.09	-9*	Stockwork Qm-Qtz	Appears to have shallow S dip	Bio. gone	4-8%	0.3 (ox)	Couple prospect pits on qtz stockwork (<10' thick?)		
.16	-10*	Qm & Qtz vns	N85E, 40S (& N30W, 40W)	W-M Ser	5%	(ox) 0.3-0.8	40°S incline. N85E, 40S system of parallel qtz vns is at least 15' thick and is cut off-displaced by N30°W, 40E fault of qtz veinlets. 15' sample		
		—	—	—	—	—			
	-11	Qm	N-S, 35W Barren Joints	—	—	—	Further to E joints are N10W, 35°W		
	-12	Qm	N30W, 35SW Joints	—	Tr	Tr (ox)	Tr py-qtz on joints		
.24	-13*	Qm	N20W, 12°W (& minor N45°W, 40SW)	-	Tr	0.3 (ox)	Prospect pit; sampled dump cut from bedrock		
	-14	Qm	N50W, 30-35SW Barren joints	-		Rare Trace			
	-15	Qm	N55W, 45W Barren joints		—	Traces			

~~ATTACHMENT C~~

ASSAY RESULTS---OZIER MINE

Sample	Au/ppm	Ag/ppm	Hg/ppm	As/ppm	Sample description
HO-1	.126	.18			Dump sample of decomposing, Fe-stained, quartz veinletted, quartz monzonite.
HO-2	.148	.15	.12	11	25' sample in old digging in locally Fe-stained, argillized quartz monzonite.
HO-3	.180	3.90			Dump sample of Fe-stained, argillized quartz monzonite.
HO-4	.062	.06			Quartz monzonite countryrock.
HO-5	.096	.06			Locally Fe-stained monzonitic countryrock north of first 4 samples.
HO-6	.088	.18			Countryrock near HO-5.
HO-7	.090	.06	.12	10	Sample from area of old and nearly oblitered Mexican diggings.
HO-8	.064	.06			Dump sample north of John Bull Flat road. Locally Fe- and Mn stained quartz monzonite.
HO-9	.070	.39	.06	10	Ozier mine. Grab sample from reddish silt-gravel dump near arrastres.
HO-10	.028	.06			Ozier mine. Sample of another dump very near that of HO-9.
HO-11	.335	3.24			Ozier mine. Dump sample north of John Bull Flat road. Fe-stained and pyrite-bearing fragments.
HO-12	.732	.18	.03	9	Ozier mine. About only outcrop seen amidst old and semi-obliterated workings north of road. Fe-stained and altered.
HO-13	.064	.06			Ozier mine. Sample from old pit dump, silty and sandy material adjacent road on south.

All assays by Geochemical Systems Company of Orange, California.

SKYLINE LABS, INC.
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REPORT OF ANALYSIS

JOB NO. TAJ 442
September 24, 1985
OZ-1 TO W-2

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 13 Rock Chip Samples

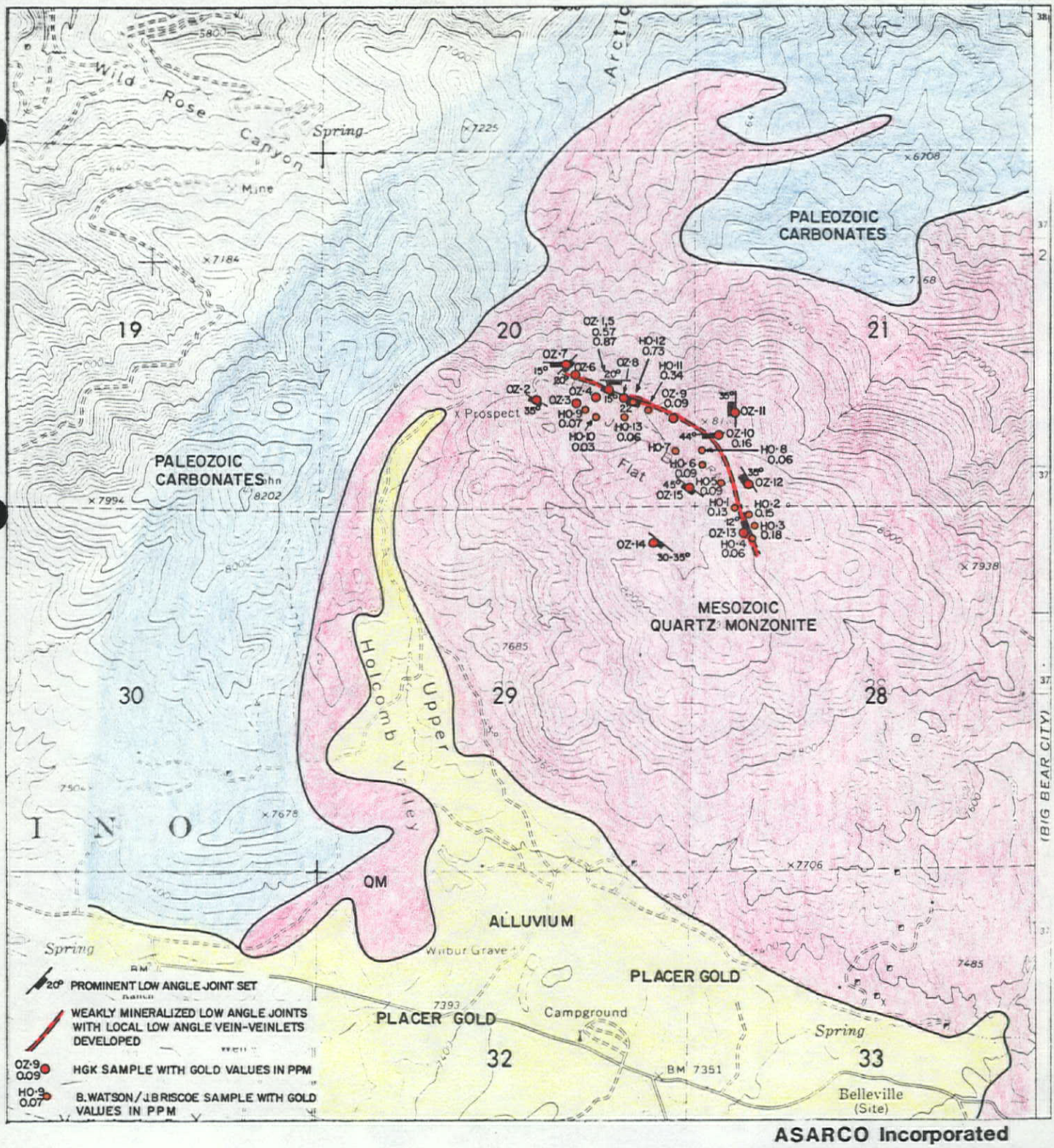
ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
1	OZ-1	.57	.20	<2.	<2.	<2.
2	OZ-5	.87	.20	<2.	<2.	<2.
3	OZ-9	.09	.20	18.	<2.	<2.
4	OZ-10	.16	5.05	34.	<2.	<2.
5	OZ-13	.24	.45	<2.	<2.	<2.

ITEM	SAMPLE NO.	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
1	OZ-1	1.	<.1	<1.	14.	<1.
2	OZ-5	1.	<.1	<1.	22.	<1.
3	OZ-9	11.	<.1	<1.	10.	3.
4	OZ-10	1.	<.1	<1.	405.	<1.
5	OZ-13	1.	<.1	<1.	16.	<1.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122



ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: Fawnskin,Ca. 7.5'

Twsp.: 3N **Rng.:** 1 E **Sec.:** 20,21,28,29

Prospect Name: Ozier Mine

Owner: _____

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

State: California

County: San Bernardino

District: _____

SCALE: 1"=2000'

MILS and/or Terradata # _____ / _____

map no. 6311 **date** 10/23/85

JHC — ER File

ASARCO EXPLORATION RECORD

J. H. C.

OCT 21 1985

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Pyritized Qtz. Latite Dikes & Qtz. Stockwork	USA	Calif.
	④ USGS Quad. Fry Mountains 7½	⑤ File or Core No. San Bernardino

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°35'	116°40'	San Bernardino	6N	3E	N/2 28	H.G.Kreis	9/85
						⑪ Office SWED Tucson	⑫ Field Days 3

Section II Sources of Information

Date Typed 10/18/85

⑬ References

Author	Date	Title	Publications	Vol. No.
H.G.Kreis,	10-18-85,	Gold Reef Mine, Asarco Memo		

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] No further interest

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage

⑲ Excavations None

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached

㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Examined for gold and silver

㉔ Ore Minerals-Major: None — Minor:

㉕ Host Rocks-Major: Quartz Monzonite — Minor: Quartz latite dikes

㉖ Age of Host Rocks: Mesozoic

㉗ Nature of Exposures: Approx. 40% outcrop exposures in hilly terrain.

㉘ Alteration: Weak sericite alteration in quartz latite dikes; local weak chlorite-epidote in qtz.monz.

㉙ Total Extent: Wk. ser. alt. confined to qtz. latite

㉚ Structure: Quartz latite dikes strike E-W with vertical flow structure. Local flow structure and inclusions in quartz monzonite strike E-W and dip 85-90°N. (cont.)

㉛ Ore Occurrence: Pyritized quartz latite dikes are hosted by quartz monzonite--basically the same environment as observed at the Gold Reef Mine area, 2 miles to the northwest. The quartz latite dikes (cont.)

㉜ Age of Mineralization: Mesozoic or younger

㉝ Conclusions & Recommendations: No gold or silver mineralization was found in this reconnaissance evaluation of the pyritized quartz latite dikes and the associated quartz mineralization. Nor is there any indication that such would be found with more detailed mapping and sampling. No further work is recommended.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

30. Structure (Continued) - Attitude of veins described below.

31. Ore Occurrence (Continued)

carry 2% to 8% disseminated pyrite with weak sericite alteraion. Locally unoxidized pyrite is found in outcrop. The lack of detectable gold in the same mineralization at the Gold Reef Mine and at properties examined elsewhere gave little reason to believe this area would host anomalous disseminated gold values; consequently, no detailed field mapping or extensive rock chip sampling was done. Rock chip samples were taken from potentially productive mineralization--notably quartz vein systems and quartz stockwork mineralization. Drainage sediment samples were taken from strategically located drainages to check for the possibility of gold in either the pyritized quartz latite or the quartz monzonite host rocks.

Several significant quartz veins and stockwork structures looked encouraging in the field, but none of the quartz mineralization carried any gold, silver, or indicator metals. This totally barren quartz mineralization is similar to that north of the Cumberland Mine (H.G.K., 7-24-85, Gold Recon. of Ord Mountain District).

Samples QL-4 to QL-8 are in a 50' to 80' wide, 500' long zone of quartz veinlets and quartz stockwork. Some of thin quartz-mineralization contains up to a few percent oxidized pyrite. The quartz mineralization strikes N60°W with a steep (?) dip and straddles three rock types: quartz latite on the west, quartz monzonite in the middle, and a dike of hornblende diorite on the east.

At samples QL-14 and QL-18 to -23 there are several quartz stockwork type veins, all of which are substantially obscured by this alluvial cover. The veins are subparallel, striking N70°W and dipping 65°SW. The veins are 1' to 30' wide and spaced 100' apart with scattered quartz veinlets ($\leq$1%) in between. The quartz monzonite host rock is chloritized near the quartz mineralization, and local minor calcite is present.

Sample QL-25 was taken from a small outcrop of a $\geq$2' wide quartz-pyrite vein in a talus covered area. Although the most productive looking of all the mineralization, it contained no anomalous metal values except 4 ppm Sb and 6 ppm Mo.

Samples QL-29, -30 and -33 are of 3' to 10' thick quartz-chlorite breccia structures striking N20°W. This mineralization carries 7 ppm Bi and 90 ppm Cu.

SKYLINE LABS, INC.
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REPORT OF ANALYSIS

JOB NO. TAJ 447
October 16, 1985
GR-18 TO QL-34

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 22 Rock Chips and 13 Soil Samples

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
GOLD REEF	1	GR-18	<.02				
	2	GR-19	<.02				
	3	GR-20	<.02				
QTZ LATITE	4	QL-2	<.02				
	5	QL-3	<.02				
	6	QL-4	<.02	.10	<2.	<2.	4.
	7	QL-5	<.02	<.05	<2.	2.	6.
	8	QL-6	<.02	<.05	<2.	2.	2.
	9	QL-7	<.02	.10	<2.	<2.	<2.
	10	QL-8	<.02	.20	<2.	<2.	2.
	11	QL-9	<.02				
	12	QL-10	<.02				
	13	QL-11	<.02				
	14	QL-12	<.02				
	15	QL-13	<.02				
	16	QL-14	<.02	<.05	<2.	<2.	2.
	17	QL-15	<.02				
	18	QL-16	<.02				
	19	QL-17	<.02				
	20	QL-18	<.02	.20	<2.	2.	<2.
	21	QL-19	<.02	<.05	<2.	2.	2.
	22	QL-20	<.02	<.05	<2.	<2.	<2.
	23	QL-21	<.02	<.05	<2.	12.	<2.
	24	QL-22	<.02	<.05	<2.	4.	<2.
	25	QL-23	<.02	<.05	<2.	<2.	2.

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ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
26	QL-24	<.02	<.05	<2.	<2.	4.
27	QL-25	<.02	<.05	<2.	4.	6.
28	QL-26	<.02				
29	QL-28	<.02				
30	QL-29	<.02	.10	<2.	2.	<2.
31	QL-30	<.02	<.05	<2.	<2.	2.
32	QL-31	<.02				
33	QL-32	<.02				
34	QL-33	<.02	.40	<2.	<2.	2.
35	QL-34	<.02				

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Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 447
October 16, 1985

ITEM	SAMPLE NO.	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
6	QL-4	1.	.1	<2.	12.	<1.
7	QL-5	<1.	.1	<2.	10.	<1.
8	QL-6	3.	.1	<2.	160.	<1.
9	QL-7	<1.	.1	<2.	10.	<1.
10	QL-8	1.	<.1	<2.	22.	<1.
16	QL-14	<1.	<.1	<2.	4.	<1.
20	QL-18	<1.	.1	<2.	4.	<1.
21	QL-19	<1.	<.1	<2.	16.	<1.
22	QL-20	<1.	<.1	<2.	14.	<1.
23	QL-21	<1.	<.1	<2.	12.	<1.
24	QL-22	<1.	<.1	<2.	4.	<1.
25	QL-23	<1.	<.1	<2.	2.	<1.
26	QL-24	1.	<.1	<2.	2.	<1.
27	QL-25	1.	.1	<2.	10.	<1.
30	QL-29	6.	<.1	<2.	100.	<1.
31	QL-30	5.	<.1	<2.	90.	<1.
34	QL-33	9.	<.1	<2.	90.	<1.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L. LEHMBECK
DATE SIGNED
Arizona U.S.A.

William L. Lehmbeck
Manager

H.G. KREIS
9-1985
N/2 N/2 SEC 28
T6N R3E

1/3

PYRITIZED
QUARTZ LATITE DIKES

QL-1 Qtz latite in narrow (≤50') dikes. Wk-mod qtz-ser. w/ 2-5% F.T.S. Vertical flow structure. 1' diam boulder float (on ridge) of qtz-py (oxid.) vein material.

-2 Qtz. latite & quartz sample. Sampled across 4'. Sample composed 50% of gray qtz "vein" 1' thick on contact of qtz latite; and 50% qtz latite w/ 6% disp py (ox. & unoxid.).

-3 Wash sediment sample, -10 mesh. (100' above, to west, is a 6" x 15' qtz vein).

-4 Rock chip sample, 35' long. Taken in qtz latite-py(ox.) wall rock across a 1' qtz vein which parallels E-W strike of qtz-latite. Wall rock contains ≤1% qtz-py (ox.) veinlets, all ≤1/4" thick.

-5 Rock chip sample, 25' NNE across a N60°W zone of qtz stockwork. 5% abundance of qtz-py (ox.) veinlets forming a difficult to sample stockwork. Sample will not be indicative of grade; but, rather, presence or absence of gold.

-6 Rock chip, taken E. of & begin 20' E. of E. end of QL-5; 10' length. Strongly quartz veined, 15-20%, f.g. qtz mons.; traces former pyrite.

-7 Rock chip. Went up wash 30' and took sample of qtz stockwork in chloritized 6½' dia. dike that occurs along east edge of qtz stockwork. 8' sample across structure.

-8 Rock chip, located 40' E of QL-4. 20' width of v. strongly devel. qtz stockwork & breccia in qtz mons.

QL-9 Wash sediment sample, -10 mesh.
-10 " " " , " ".
-11 " " " , " ".
-12 " " " , " ".
-13 " " " , " ",
-14 Float sample of subcrop, qtz stockwork vein that appears to be about 5 to 20' wide. Located on motor bike trail

-15 Wash sed. sample, -10 mesh

-16 Sample rock chip of 1'-2' wide qtz vein.
-17 Wash sed. sample, -10 mesh
-18 Sample, rock chip. Qtz vein, 1' thick, N70°W. 65°SW. Qtz of vein infills green (chloritic) qtz mons breccia.

-19 Sample, rock chip, 30', S20°W, 50' SW of QL-18, edge of wash. Crumbly green qtz mons, mod. chlor. + green sericite (?), local weak specularite, local wh. qtz veinlets.

-20 Sample, rock chip, 0-20' into west wall rock of QL-18. Qtz mons, crumbly, mod. chlor, 4% qtz veinlets.

-21 Sample, float of subcrop, 50' long E-W, between (midway) QL-18 and QL-14 (spaced 100' apart ⊥ to stk.). Chloritic qtz mons, w/ ≤1% qtz veinlets
-22 Sample, rock chip, 30' N-S±. 5% qtz veinlets + vns (<1" thick) in chloritized qtz mons(?). Vns strike N65°W and dip 65°SW'ly. N45°E to QL-20

-23 Sample, rock chip, 40'S of QL-22. V. small subcrop + outcrop of chloritized qtz mons and a f.-g. (aphanitic) pale green rock; 5% carbonate (calcite) veining.

#

QL-24 Sample -- check indicator elements. Qtz. latite with 5% F.T.S.

-25 Sample, ≥2' wide qtz-py (ox.) vein, north side is covered; trends N60°E. "Productive looking."

-26 Wash sed. sample, -10 mesh.

-27 No sample. Inclusions in granite strike E-W and dip 85-90°N.

-28 Wash sed. sample, -10 mesh.

-29 Float sample of subcrop. Qtz-chlorite breccia

-30 Sample, outcrop & subcrop. 5'-10' wide N20°W striking quartz-vein-stockwork. Chloritization; couple blebs of magnetite in qtz; qtz in often replacement-like.

-31 Wash sed. sample, -10 mesh.
-32 " " " " "
-33 Sample, 3' wide qtz-chlorite bxa (f.g.) striking N20°W

-34 Wash sed. sample, -10 mesh.

#

Alluvium

Mesozoic quartz latite dikes

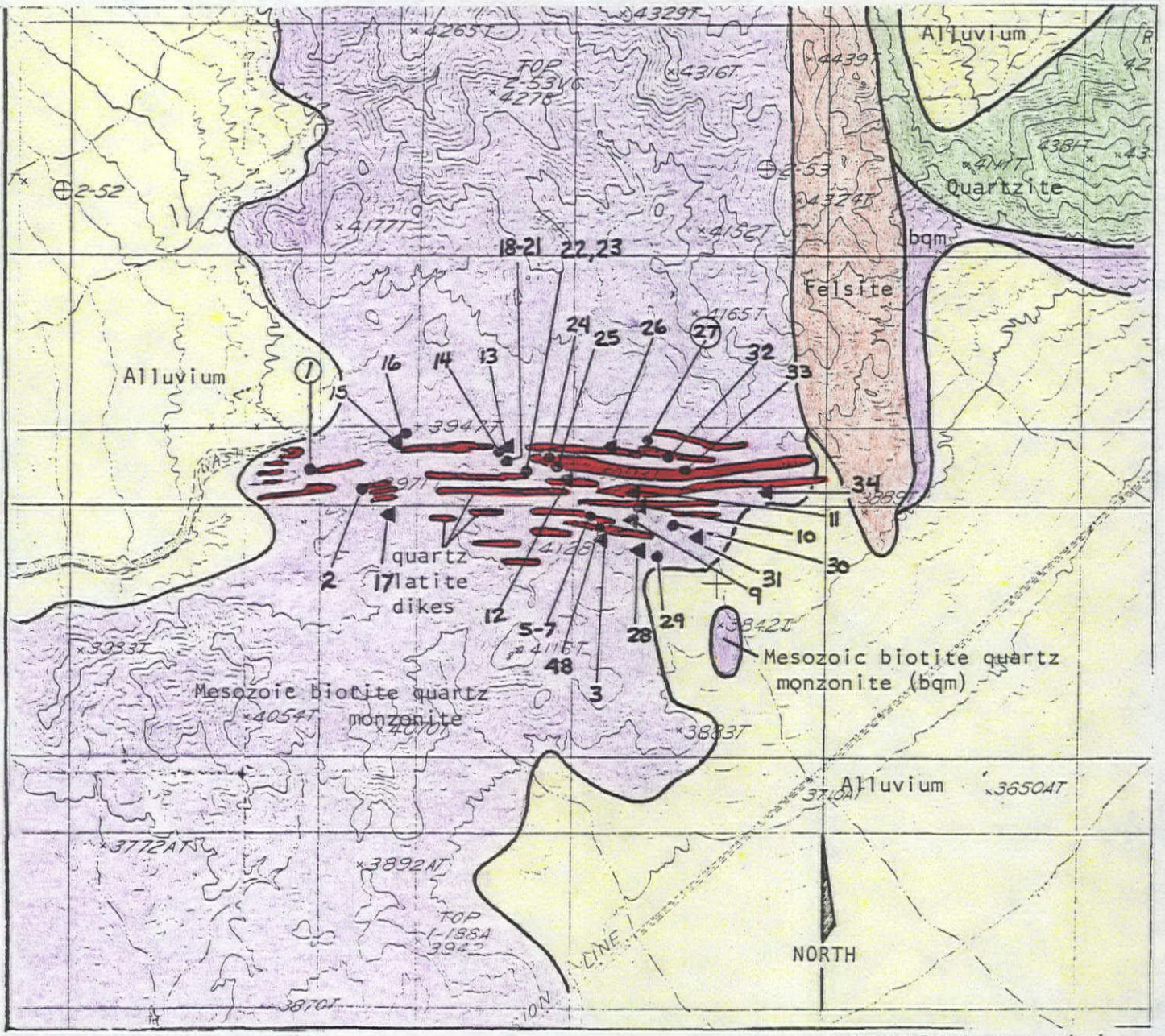
Mesozoic felsite

Mesozoic biotite quartz monzonite

Paleozoic quartzite

● bedrock sample, Au in ppm, Ql prefix omitted (field notes circled)

▲ sediment sample, au in ppm



Except for quartz latite dikes, geology from Dibblee, 1964 Geol. Rodman Mtn. Quad. I-430

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: _____

USGS Quad.: Fry Mountains, Ca. 7.5'

Twsp.: 6 N **Rng.:** 3 E **Sec.:** 20,21,28,29

Prospect Name: Quartz Latite Dikes

Owner: _____

Examined by: H. G. Kreis

Follow-up Recommended: Yes☐ No☐

State: California

County: San Bernardino

SCALE: 1"=2000'

District: _____

MILS and/or Terradata # _____ / _____

map no. 6305 **date** 10/17/85

JHC - ER File

ASARCO EXPLORATION RECORD

G. Cross News Letter
27 August 1985

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [X] ASARCO FILE [X] Pirates Gold Corp. Vancouver

Section I General Indexing

① Name(s) of Property or Area: Pirates Gold Corp. Margarita & Old Glory Ruby Property-Goldsil					② Country: USA-Santa Cruz Co.	③ State or Province: Arizona	
					④ USGS Quad. 7½' Bartlett Mt.	⑤ File or Gore No.	
⑥ Latitude: 31°17'N	⑦ Longitude: 111°15'N	⑧ AMS Sheet: Nogales	Township: 23S	Range: 11E	Section: 7	⑨ Examined by: F.R.Koutz-T.DallaVista	⑩ Date: 9/13/85
						⑪ Office: Tucson	⑫ Field Days: ½

J.H.C.

Section II Sources of Information

Date Typed 9/30/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Knight, L.H.	1970	Struct.&Mineraliz.-Oro Blanco Min.Dist.	UofA PhD	171p.
Sell, J.D.	1977	Margarita Group (PPG Data)	Asarco Files	
Asarco Files		Oro Blanco Dist.(esp. Ruby Prop., J.G.Payne-Goldsil/ERG rept.)		

OCT 2 - 1985

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [?] Too Low Grade
- [?] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] Rev.District

⑮
- [X] Post Producer
- [ ] Producer
- [X] Mineral Deposit
- [X] Prospect
- [X] Bad Assays ?
- [?] deeper targets
- [X] Geologic Concept
- [X] Geochem Anomaly
- [?] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Au(Margarita)	4,440(min)	0.3 Au+0.6Ag
Au(Old Glory)	75,000	0.6 opt

⑰ Reserves
[ ] Measured [X] Estimated

Commodity	Tons	Grade
Au	500,000 ??	.06 opt
	Stripping Ratio 1:1	

⑱ Num. Drill Holes 300+
Approx Total Footage 25,000'

⑲ Excavations Several 1000' workings-Several Old Glory holes. see files

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au-Ag

㉔ Ore Minerals-Major: Electrum (.700 fine) pyrite Minor: malachite (T Pb-Zn oxide)

㉕ Host Rocks-Major: Tuffs-welded & non-welded Loc.seds Minor: Qtz Monz.Porph. Dikes-Sills

㉖ Age of Host Rocks: Jurassic + Bx 24 m.y.

㉗ Nature of Exposures: Fair to good, 300' of relief. Scrub oak & grass. Silicified volcanics weather to highs, QMP to lows in valleys. Alt. destroys texture

㉘ Alteration: Silicified WNW veinlets--fractures, pervasive sericite-clay, local jasperoid Trace alunite (?)

㉙ Total Extent: 3000x1500'(N-S) each but spotty

㉚ Structure: N to NNE shallow-dipping volcanics. W to NNW fractures (high sangle): some low angle fractures. Glory holes are stockwork zones. QMP intrudes ore zones (post min?)

㉛ Ore Occurrence: Shallow, gently north dipping silicified-stockwork veinlets with several percent pyrite now oxidized. Best areas 500'x300'x40' deep.

㉜ Age of Mineralization: Laramide?

㉝ Conclusions & Recommendations: Similar to alteration over Hardshell-Hermosa--but more spotty. This high potential area has apparently been thoroughly tested to 100 feet for shallow OP heap-leach Au and what has been found several 100,000T of .05 opt is spotty & may not be able to be mined with present Au price. All available data should be assembled & the district reviewed for missed areas. Deeper targets in flat permeable zones in volcanics may exist. District should be reviewed and examined in detail in spite of promotors, drug and other border problems.

(For additional space use extra sheets)

~~JHC~~ ER File

119 Ali Lode Claims
16 Assoc. Placer Claims

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [X] LITERATURE SEARCH [ ] ASARCO FILE [X] Submittal

3-4 miles NE of Tumco

Section I General Indexing

① Name(s) of Property or Area: ALI Claims - Outline Oil Co. (Amer.Explor.& Invest.) (Hyduke)					② Country: USA-Imperial Co	③ State or Province: CA	
					④ USGS Quad.: Ogilby 15'	⑤ File or Gore No.	
⑥ Latitude: 32°56'N	⑦ Longitude: 114°47'W	⑧ AMS Sheet: El Centro	Township: 14S	Range: 21E	Section: 20,21 28,29	⑨ Examined by: F.R. Koutz	⑩ Date: 8/7-14/85
					⑪ Office: SWED-Tucson		⑫ Field Days: 7

Section II Sources of Information

Date Typed 9/24/85

⑬ References

Author	Date	Title	Publications	Vol. No.

Outline Oil submittal packet including Santa Fe Minerals data: see also H.G.Kreis Tumco Rpt (1/21/85); Dillon,J.T. 1976, Geol.of Choc.& Cargo Mts., SE CA, PhD, U.C.S.B. (Univ.Microfilms 77-5238) 405p.; Henshaw,P.C. 1942, Geol.&Min.Deposits (continued)

Section III Appraisal

J. H. C.

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [?] Prospect
- [X] Scam(WO_3)

- [?] Potential(?) HW of Detachment
- [X] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Scheelite	Maybe a few	Hand sorted

SEP 26 1985

⑰ Reserves [ ] Measured [ ] Estimated None

Commodity	Tons	Grade
	possibly few 1000T hand-sorted scheelite	

⑱ Num. Drill Holes Trak 17 ? Approx Total Footage 3400'??

⑲ Excavations 12 miles of dozer roads & scrapes(Loca.Work)

⑳ [X] Spectro. Analysis Attached 12 ㉑ [ ] Assays Attached ㉒ 30 [X] Geochem Results Attached Au,Ag,Hg

Section IV Geologic Data

㉓ Commodity or Contained Metals: spotty W with traces Au,Ag,Hg,Cu,Zn

㉔ Ore Minerals-Major: Magnetite ilmenite T Cu Ox Minor: Scheelite Au(Ag)

㉕ Host Rocks-Major: biot.granite±aplite-pegmatite gneiss Minor: biot.-hornb. gneiss&schist

㉖ Age of Host Rocks: Jurassic 148m.y.(zirc.) 62-53(K/Ar) P€ Tumco Fm (incl.Hbd Q M.)

㉗ Nature of Exposures: Good-mostly rolling hills (710-1100'elv.) 20% T-Qal, 30% pediment subcrop,rest outcrop. Heavy desert varnish limited to high biot-Hbd gneisses.(cont.)

㉘ Alteration: All pre-T-Qal rocks subjected to J.Hbd-Epid. facies metamorphism. Loc.silicif, geothite-stained shears with (cont.) ㉙ Total Extent: 4-6 sq.mi.,NE flank Cargo Muchacho Range.

㉚ Structure: 30-50° S to SW dip to foliation & mineral lineation. WNW to NNW drag folds in W/3-related to late Tert.San Andreas Fault(?) WNW to ENE shears parallel to (cont.)

㉛ Ore Occurrence: Spotty scheelite in pegmatitic qtz veins. Loc CuOx in mafics. V weak Au, Ag(?),Hg(?),Cu,Zn with goethite (after mgf-mafics) near contacts of Jbg+pegs with Tumco & hgm--subsequently metamorphosed. ㉜ Age of Mineralization: Jurassic(?) E.Tert.,LateTert.(cont.)

㉝ Conclusions & Recommendations: Scheelite too weak and spotty. Au <.02 ppm and no indication of drill target-location of better grades. No evidence of detachment structure noted but possibly 2 miles above projected E.Tertiary Chocolate Mts. decollement. Shearing + drag folding responsible for weak brecciation--enhanced by deep desert weathering/ deflation.

Property should be dropped from consideration.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

Continued from Page 1

13. References

Cargo Muchacho Mts., Imperial Co., CA; CA J.M.&G. v38, p. 147-196 + map.

27. Nature of Exposures

Weathering-shattering limited to ±10 feet. Local case-hardening.

28. Alteration

minor siderite-calcite.

30. Structure

axial plane + lineation in tectonites.

32. Age of Mineralization

remobiliz. (?).

ASARCO EXPLORATION RECORD

~~JHC~~ – ER File
J. H. C.

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

JAN 28 1986

Section I General Indexing

① Name(s) of Property or Area: RAMBLER MINE AREA					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Tecopa	⑤ File or Gore No.: Inyo Co.	
⑥ Latitude: 36°00'	⑦ Longitude: 116°14'	⑧ AMS Sheet: Trona and Death Valley	Township: 22N	Range: 7E	Section: 8,15, 21,22	⑨ Examined by: H.G.Kreis	⑩ Date: July 1985
						⑪ Office: SWED-Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 9/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Asarco's Rambler Mine files				
Harmet Associates, 1981, "Low Grade Deposit, Exploration Summary"				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geol. Interest

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomoly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes ≥4
Approx Total Footage >1000(?)

⑲ Excavations: Road Cuts

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major: None Minor:

㉕ Host Rocks-Major: Rhyolitic volcanics Minor: Limestone

㉖ Age of Host Rocks: Not known

㉗ Nature of Exposures: Extensive outcrops along hillsides

㉘ Alteration: Local hot springs clay-sericite alteration in tuffaceous units.

㉙ Total Extent: Probably on a district scale.

㉚ Structure: 30-45° NE'ly dips in limestone and tuff units

㉛ Ore Occurrence: No gold or silver mineralization was detected in either bedrock or stream sediment samples.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations: Evidence of hot spring activity with anomalous arsenic values and favorable host rocks (porous tuffaceous volcanics; limestone) is encouraging for precious metal exploration. Rotary drill holes, apparently of U.S. Borax circa 1978, were probably in search of borates. There are active hot springs in nearby Tecopa, and I suspect there may be widespread hot springs activity in the area.

The Rambler Mine area was examined because the file data, although of questionable reliability, suggested the presence of (attachment)

(For additional space use extra sheets)

33. Conclusions & Recommendations (Continued)

widespread gold and silver in rhyolitic volcanics. Nineteen samples were taken to check for the presence of gold and silver, but neither gold or silver was detected in any of the samples (rock chip, stream sediment, rotary cuttings).

The hot spring-borate (?) environment of the Rambler Mine - Tecopa area is of geologic interest, and it is possible that anomalous gold and/or silver values occur in the general area. Although this environment does not have the gold potential of the Mesquite-Picacho-Madre and Padre environment, it may be worthy of follow-up work at an appropriate time in the future.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 435
July 24, 1985
RAM-1 TO RAM-17

ASARCO INCORPORATED
Attn: Mr. H. G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 9 Rock Chips, 4 Soils and 4 Rotary Cutting Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
1	RAM-1	<.02	<.05	175.	4.	6.
2	RAM-2	<.02	<.05	105.	<2.	4.
3	RAM-3	<.02	<.05	15.	<2.	2.
4	RAM-4	<.02	<.05	55.	4.	4.
5	RAM-5	<.02	<.05	10.	<2.	2.
6	RAM-6	<.02	<.05	5.	<2.	2.
7	RAM-7	<.02	<.05	5.	<2.	2.
8	RAM-8	<.02	<.05	10.	<2.	2.
9	RAM-9	<.02	<.05	<5.	<2.	2.
10	RAM-10	<.02	<.05	10.	<2.	2.
11	RAM-11	<.02	<.05	15.	<2.	2.
12	RAM-12	<.02	<.05	10.	<2.	2.
13	RAM-13A	<.02	<.05	10.	<2.	2.
14	RAM-13B	<.02	<.05	170.	4.	4.
15	RAM-14A	<.02	<.05	20.	<2.	2.
16	RAM-14B	<.02	<.05	20.	<2.	2.
17	RAM-15	<.02	<.05	<5.	<2.	2.
18	RAM-16	<.02	<.05	10.	<2.	2.
19	RAM-17	<.02	<.05	15.	<2.	2.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 435
July 24, 1985

ITEM	SAMPLE NUMBER	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
1	RAM-1	<2.	.4	<2.	10.	<1.
2	RAM-2	<2.	.2	<2.	10.	<1.
3	RAM-3	<2.	.2	<2.	<5.	<1.
4	RAM-4	<2.	.2	<2.	15.	<1.
5	RAM-5	<2.	.2	<2.	80.	<1.
6	RAM-6	<2.	.2	<2.	10.	<1.
7	RAM-7	<2.	<.2	<2.	45.	<1.
8	RAM-8	<2.	.2	<2.	30.	<1.
9	RAM-9	<2.	<.2	<2.	10.	<1.
10	RAM-10	<2.	<.2	<2.	10.	<1.
11	RAM-11	<2.	<.2	<2.	30.	<1.
12	RAM-12	<2.	.2	<2.	20.	<1.
13	RAM-13A	<2.	<.2	<2.	10.	<1.
14	RAM-13B	<2.	.2	<2.	20.	<1.
15	RAM-14A	<2.	<.2	<2.	20.	<1.
16	RAM-14B	<2.	<.2	<2.	5.	<1.
17	RAM-15	<2.	<.2	<2.	10.	<1.
18	RAM-16	<2.	.2	<2.	15.	<1.
19	RAM-17	<2.	<.2	<2.	<5.	<1.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED 7-25-85 Arizona U.S.A.

William L. Lehmbeck
Manager

H.O. Kreis
7-1985

RAMBLER MINE AREA

All sediment samples -60 mesh

RAM-1 Tuff with 30-60% black to locally red limestone fragments. Red colored matrix (tuff). Exposed in road cut.

RAM-2 Alternating white and pink tuffaceous rhyolite. Immediately above RAM-1. Approx 30' stratigraphically below lms of RAM-3. Appears mod.(?) clay alt.

RAM-3 DK gray limestone. Sample taken 5' vert. within 10' of contact with underlying alt. tuff (RAM-4). Across road cut top of peak bedding in lms dips 45° NE'ly.

RAM-4 Clay-ser. alt. rhy tuff. Sample taken within 20' of contact w/ overlying lms (RAM-3). Stratigraphically RAM-4 is ≈30' above RAM-1 & 2. Bedding ≈ N20°W w/ 30° NE dip.

-5 Stream (wash) sed. sample, -60 mesh. Composite sample of 2 streams draining lms. mtn to ESE.

-6 Sample of dump; white, clay-ser. alt. rhy.

-7 Drainage sed. sample. East flowing drainage from rhy and alt. rhy.

-8 North flowing drainage sed. sample from rhy & lms areas.

-9 Sample of c,s alt. rhy, outcrop in wash bottom. White color

-10 Sample of clay-ser alt. lithic tuff. Gray color

Rosewood Lava Feb 84
U > Borax (Pine), '78 (4-5-78) Shoshone group claims (probably Lid) TDH

-11 Drainage sed. sample.
-12 Drainage sed. sample, >90% rhy vole.

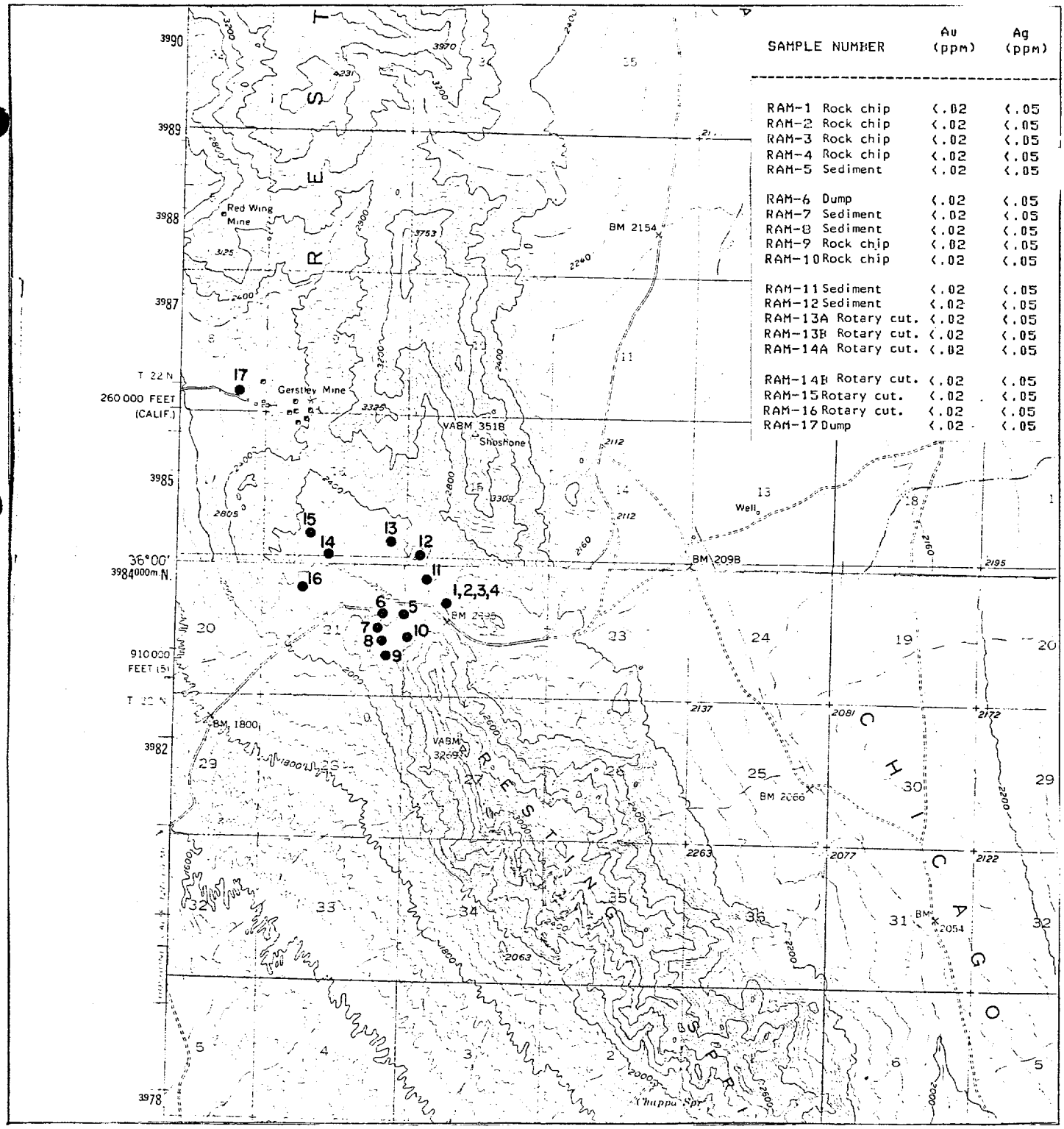
RAM-13A&B Rotary drill hole. RAM-13A sample of pink rhyolite at collar of drill hole. RAM-13B sample of pile of cuttings 20' from hole. Alternating layers of red and white alt. rhy volc. "68-4" in cemented collar.

-14 A&B Rotary drill hole. Sample 14A, pile 20' from hole, alt rhy or mudstone (dirty sample). Sample 14B of pink rhyolite.

-15 Rot. drill hole cuttings. Lt. red and loc. white cryst. tuff

-16 Rot drill hole cuttings. Pink rhy.

-17. Gently Mine dump sample, white borate (?) mineral (70%) and mudstone (?) (30%). Sample taken at 5:30 AM, watchman not yet up. Came back later (twice) and he was gone but had locked gate about 1mi down the road. So didn't get to examine this mine.



SAMPLE NUMBER		Au (ppm)	Ag (ppm)
RAM-1	Rock chip	<.02	<.05
RAM-2	Rock chip	<.02	<.05
RAM-3	Rock chip	<.02	<.05
RAM-4	Rock chip	<.02	<.05
RAM-5	Sediment	<.02	<.05
RAM-6	Dump	<.02	<.05
RAM-7	Sediment	<.02	<.05
RAM-8	Sediment	<.02	<.05
RAM-9	Rock chip	<.02	<.05
RAM-10	Rock chip	<.02	<.05
RAM-11	Sediment	<.02	<.05
RAM-12	Sediment	<.02	<.05
RAM-13A	Rotary cut.	<.02	<.05
RAM-13B	Rotary cut.	<.02	<.05
RAM-14A	Rotary cut.	<.02	<.05
RAM-14B	Rotary cut.	<.02	<.05
RAM-15	Rotary cut.	<.02	<.05
RAM-16	Rotary cut.	<.02	<.05
RAM-17	Dump	<.02	<.05

Ram Series Samples

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Trona & Death Valley

USGS Quad.: Stewart Valley & Tecopa Ca 15'

Twsp.: 22N **Rng.:** 7E **Sec.:** 8,15,16,21,22

Prospect Name: Rambler Mine

Owner:

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

State: California

County: Inyo

District:

SCALE: 1"=1 mile

MILS and/or Terradata # _____ / _____

map no. 6286 **date** 7/85

JHC - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: NEW ERA MINE					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Waucoba Mt. 15'	⑤ File or Gore No.: Inyo Co.	
⑥ Latitude: 37°3'	⑦ Longitude: 118°14'20"	⑧ AMS Sheet: Mariposa	Township: 10S	Range: 34E	Section: E/2 27	⑨ Examined by: H.G.Kreis	⑩ Date: July 1985
						⑪ Office: SWED Tucson	⑫ Field Days: 2

Section II Sources of Information

Date Typed 8/29/85

⑬ References

Author	Date	Title	Publications	Vol. No.
J.F. Johnson	7-1-40 & 7-5-40	New Era Mine	Asarco Files	

J.H.C.

SEP 30 1985

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Gold	<20,000 (guess)	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None

Approx Total Footage: _____

⑲ Excavations: Underground Workings

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Gold Minor: _____

㉕ Host Rocks-Major: Granite Minor: _____

㉖ Age of Host Rocks: Jurassic - Cretaceous

㉗ Nature of Exposures: 5% outcrops; only exposures of altered fault zones in dozer cut, prospect pits, and underground workings.

㉘ Alteration: There are two types of alteration in the New Era mine area. The first type is strong clay- (continued on pg. 2) ㉙ Total Extent: See Alteration.

㉚ Structure: Commonly the granite in the area of the New Era Mine exhibits a N20°E striking, 60°W dipping, shear foliation. (continued on page 2)

㉛ Ore Occurrence: The gold mineralization is hosted by clay-sericite altered fault zones at KE-3 and KE-10 (-11 and -12). Local weak pyrite mineralization (limonite at the surface) is (continued on page 2) ㉜ Age of Mineralization: Jurassic - Cretaceous or younger

㉝ Conclusions & Recommendations: The New Era Mine property consists of twelve unpatented mining claims staked in 1929. It is totally surrounded for miles by withdrawn BLM land and land belonging to the city of Los Angeles (all for purposes of supplying L.A. with water).

Considering the unfavorable land situation and the lack of substantial geologic encouragement, the New Era Mine area is of no further interest.

(For additional space use extra sheets)

28. Alteration (continued from page 1)

sericite alteration associated with strong fault zones. The second type is the development of 5% disseminated specularite-magnetite with weak, pale green colored sericitization of plagioclase. There is no evidence to suggest the two are genetically related.

Clay-sericite altered fault zones occur at NE-3, -4, -7, -10, and -17. The only gold bearing, altered fault zones are at NE-3 and NE-10. The lengths and widths of these two fault zones are not determinable without additional dozer cuts. The NE-10 fault zone was explored underground, and a July 1940 memo describes assay results from sampling a 95' long crosscut on the 100' level. It implies the altered fault zone is at least 95' wide in the crosscut. The altered fault zone at NE-3 may be of similar width.

The magnetite-specularite-weak sericite alteration may have a regional extent as it is commonly on the property and in outcrops 1½ miles to the northwest (NE-20). This alteration and quartz-specularite veins (NE-1) are controlled by N20°E, 65°W dipping shear foliation in the granite.

30. Structure (continued from page 1)

The faults crosscut the shear foliation and appear to be unrelated to it. The fault altitudes are summarized as follows: NE-3, N30°-80°W, 30°-50°S; NE-10, N60°E, 45°SE; NE-4, N20°E, 35°SE; NE-7, N20°E, vertical; and NE-17, N60°W, 20°SW.

31. Ore Occurrence (continued from page 1)

associated with the gold mineralization.

At KE-10 a stope is exposed at the surface, and it is 7' wide, 40' long, and at least 30' deep. NE-10, cut on the edge of the stope, ran 0.04 opt Au over a 6' thickness. Two samples, KE-11 and -12, were taken vertically with an average length of 8', 0 to 8' above the stope. These two samples averaged 0.07 opt Au. The average of KE-11 and -12 combined with that of KE-10 (over a 7' vertical thickness) gives a value of 0.06 opt Au over 15' vertically (10' true thickness).

More or less beneath KE-10, two crosscuts were sampled on the 100' level by Asarco in 1940. In a 95' long crosscut on the 100' level, samples totalling a length of 55' averaged 0.02 opt Au and 0.1 opt Ag. Sixty-five feet along strike, a 30' long crosscut averaged 0.02 opt Au and 0.1 opt Ag. Three samples were taken on the 150' level and they averaged 0.03 opt Au and 0.3 opt Ag.

31. Ore Occurrence (continued from page 2)

At KE-3 a north-south trench exposes a N30°-80°W striking, strongly altered fault zone over a distance of 150'. Five samples were taken along this cut, KE-3A to -3E, but only KE-3B contained appreciable gold. KE-3B with 0.04 opt Au was taken over a distance of 30', and its true thickness is undeterminable.

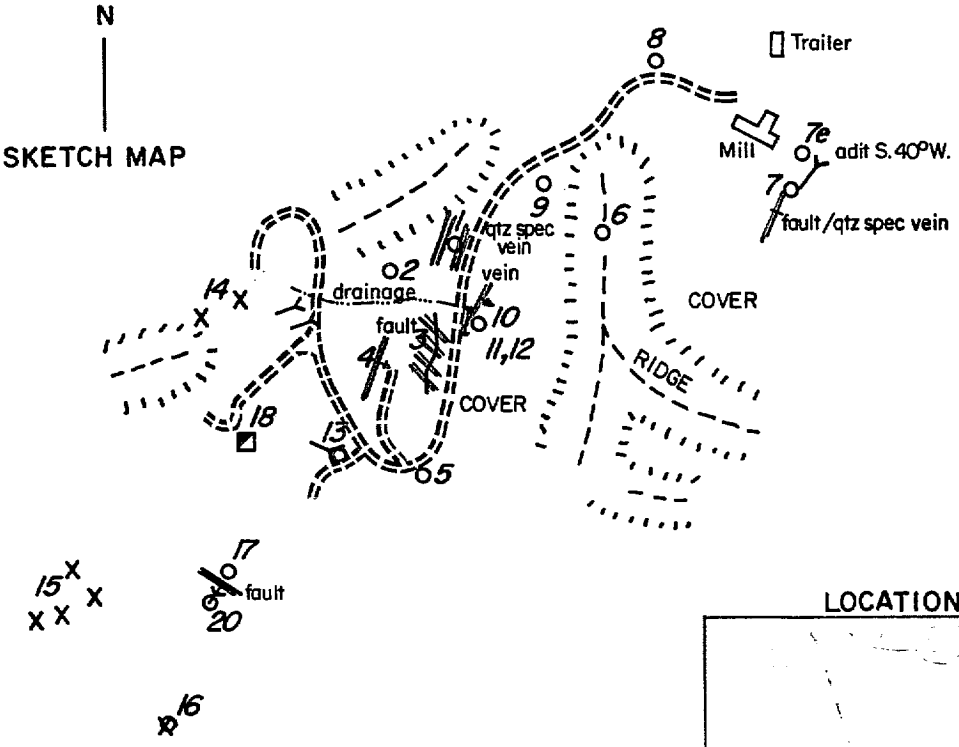
Unfortunately, there are no more exposures of the faults sampled at KE-10 and KE-3. Samples of other, much narrower fault zones contained no detectable gold. Judging from the available exposures and the geologic environment, the gold values at KE-3 and KE-10 are probably spotty and, at best, shoot-like in occurrence.

The specularite-magnetite and quartz-specularite mineralization contained no detectable gold values and is not of economic interest.

SAMPLE NO.	Au (ppm)	Ag (ppm)
NE-1	<.02	<.2
NE-3A	<.02	<.2
NE-3B	1.50	1.6
NE-3C	.03	<.2
NE-3D	.14	.2
NE-3E	<.02	<.2
NE-4	<.02	<.2
NE-7A	<.02	<.2
NE-7B	<.02	<.2
NE-7C	<.02	<.2
NE-7D	<.02	<.2
NE-7E	<.02	<.2
NE-8	<.02	<.2
NE-9	<.02	<.2
NE-10	1.40	1.6
NE-11	3.70	1.6
NE-12	1.70	1.0
NE-13	<.02	<.2
NE-16	<.02	<.2
NE-17A	<.02	<.2
NE-17B	<.02	5.0
NE-18	<.02	<.2

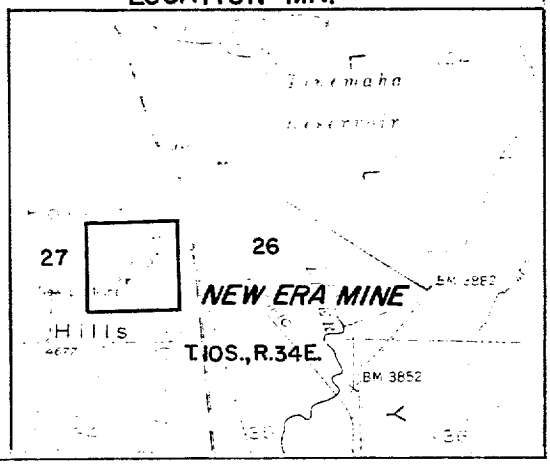
N

SKETCH MAP



GOLD/SILVER IN PPM

LOCATION MAP



ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Waucoba Mtn.Ca. 15'

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☐

SCALE: 1"=500'/1"=1 mile

map no. 6287 **date** 7/85

Twsp.: 10S **Rng.:** 34E **Sec.:** 26,27

Prospect Name: New Era Mine Area

Owner:

State: California

County: Inyo

District:

MILS and/or Terradata # _____ / _____

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 434
July 24, 1985
NE-1/GH-5

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 82 Rock Chip Samples

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)
NEW ERA MINE	1	NE-1	<.02	<.2
	2	NE-3A	<.02	<.2
	3	NE-3B	1.50	1.6
	4	NE-3C	.03	<.2
	5	NE-3D	.14	.2
	6	NE-3E	<.02	<.2
	7	NE-4	<.02	<.2
	8	NE-7A	<.02	<.2
	9	NE-7B	<.02	<.2
	10	NE-7C	<.02	<.2
	11	NE-7D	<.02	<.2
	12	NE-7E	<.02	<.2
	13	NE-8	<.02	<.2
	14	NE-9	<.02	<.2
	15	NE-10	1.40	1.6
	16	NE-11	3.70	1.6
	17	NE-12	1.70	1.0
	18	NE-13	<.02	<.2
	19	NE-16	<.02	<.2
	20	NE-17A	<.02	<.2
	21	NE-17B	<.02	5.0
	22	NE-18	<.02	<.2
	23	NE-19	.05	<.2
	24	NE-21	<.02	.4
	25	NE-22	.04	11.0

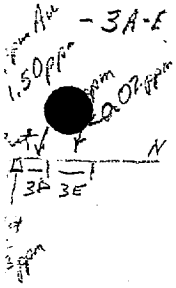
H. G. KREIS
JULY, 1985

NEW ERA MINE
FIELD NOTES

1/2

-1 Qtz-specularite veinlets, upto 1" thick; 5% abundance. Strike N20°E and have steep dip. Hosted in weakly sericite-clay altered granite - qtz mons. Took a high grade sample of qtz-spec vns (at least 50% of sample qtz-spec).

-2 Granite with mod. level shear foliation, N20°E & 65°W; Approx 10% microveinlets of pale-green sericite (chlorite?) and specularite that parallel the shear foliation. Spec. weathers to goeth.



-3A-E Owner's "ore". Strong fault zone with shear attitudes of N30-80°W and dipping 30-50° to south. Weak to locally mod. clay-ser. altn. On south end is 35± width with 3% F.T.S. NE-3A, stg clay-ser. alt. of plag., tr FeOx, 30' length. NE-3B, 30' sample, stg clay-ser alt^n of fdsl. & mod. FeOx (2% F.T.S.?) on so. half of sample; north half of sample same as NE-3C. NE-3C, 30' sample along adit wall, stg clay-ser alt. of plag and wk FeOx. NE-3D same geol. as NE-3C, 30' long sample. NE-3E, 30' sample, stg clay-ser, tr FeOx.

-4 Fault, N20°E 35°E. Took 40' sample across N-S cut of strongly broken, weathered wkly mod clay-ser. alt. granite w/ v. wk FeOx stain.

-5 Decomposed granite outcrops (biot. unaltered)

-6 Granite, wk (pale green) sericite-clay alt. of plag. No biotite. Possibly upto 1% former specularite. Locally 2-4% goe after spec (100' N of #6).

-7A&B, C&D, E Strong fault, N20°E, vert.; strong clay-ser. alt. over 10'-20' width of fault (NE-7A). Strong spec. (Av 15%) on east edge of fault and extending 15' into east wall (NE-7B). NE-7C continues in 1-2% spec for another 15' east of NE-7B. NE-7D in strongly broken and decomposed (wkly alt.) granite with mod. goeth stain after mafics &/or specularite; and NE-7D continues 10' west from NE-7A. Fault dips 50°E in adit below. Sample NE-7E taken 50' NW of portal of lower adit; NE-7E of granite with 4% goeth after mag.-spec.

NE-8 Typical granite with 5% dissem. specularite and minor spec. veinlets. Spec. commonly oxid. to goe. 20' long E-W sample across mod. west dipping shear foliation, No nearby veins or faults. Check to see if anomal. gold assoc. w/ diss. spec

NE-9 Same geol. as NE-8, but appears to be mostly f-g magnetite rather than specularite.

NE-10 Stoped out area N60°E, 45°SE dip, 6-8' thick and 40' long. At least 8-10' thickness of strong clay-sericite alt^n with a few percent F.T.S. Cut 6' (true thickness) x single, 30' down stope.

NE-11 Sample taken vertically for 6', immediately above stope on south end. Strongly broken, mod. clay-ser. alt. of plag., wk (2%) FeOx, and few 1/2" stringers of goeth. after py or spec.

-12 Sample taken vertically for 10', immediately above stope. Site is in middle of stope opening, Same geol. as NE-11.

-13 Sample of adit's dump. Granite w/ 5% goe. after specularite.

-14 Adits and prospect pits on <1' thick white qtz veins with <1% cpy (CuOx) striking N20°E. Walls have wk ly ser. alt plag (of granite) and 5% goe after spec-mag.

-15 Same as NE-14

-16 Sample mod-styly clay-ser. alt. granite with weak FeOx stain.

-17 Samples, Fault N65°W, 20°SW. NE-17A of strongly broken HW of mod. sericitized granite w/ 1% lt. brown FeOx stain (6' vertically) NE-17B of granite (broken) with 5-8% diss. mag-spec. commonly oxid. to goethite (12' ⊥ to fault; in FW of flt). Prospect cut.

NE-18 Sample of strong (5-8%) spec-mag (goe.) in granite taken 0-15' (15 length) from N 25 E, 75°W, 4' thick qtz vein w/ massive specularite in wall rock near edges of qtz vein. ~~Vein parallels foliation.~~

SW/4 SECTION 21 (T10S, R34E) Check for spec-mag.-goe in granite - see KE-20

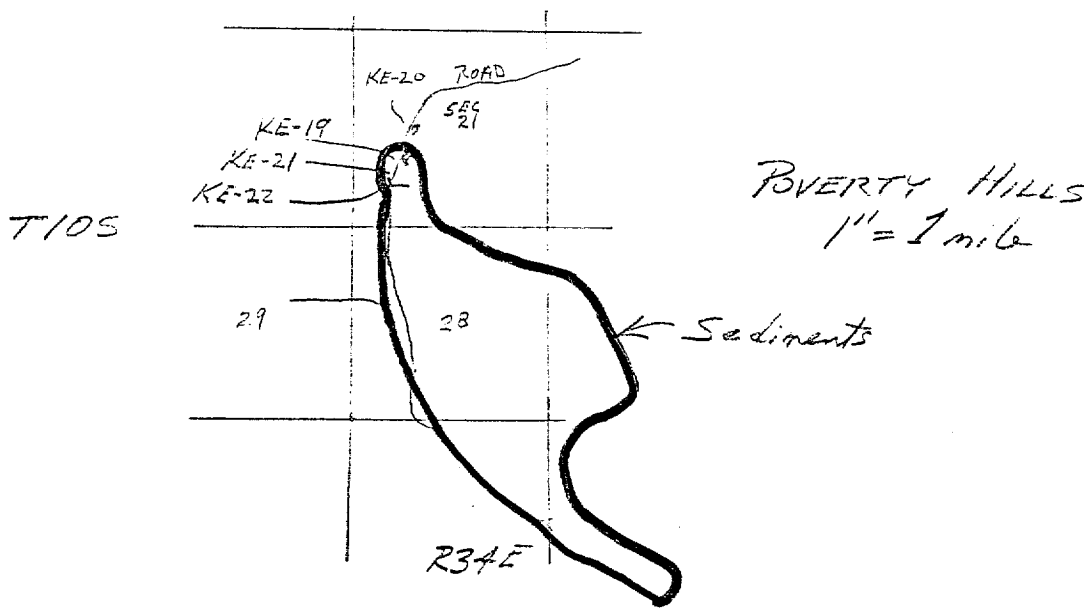
NE-19 Sample of sediments, 500' SW of last granite outcrop. Highly contorted bedding with a general low angle apparent dip to NE. Mixed lithology of carbonate rich (weathers like ankerite to goeth) sediment to totally clays altered shale(?). Locally abundant goeth on weathered surfaces. Rare qtz-goe. veinlets.

POVERTY HILLS SEE SEPARATE MRS SHEET

NE-20 Granite with strong goe. after 5% mag.-spec. Low angled dipping foliation (to east).

NE-21 Sample of vein (formerly a dike??) of qtz-goe (pitch) - totally altered rock. 35' exposed along road; true thickness may be more like 15'. North contact N50°E, w/ mod-stp SE dip.

NE-22 Sample 200' length, white, bleached, clay alt, (calcareous loc.) silty sed. w/ local MnOx and loc. silica veinlets (near adit). Locally broken, alt, and porous.



~~HC~~ ER-File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: GOLD CROWN MINE					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Casa Diablo 15'	⑤ File or Gore No.: Mono Co.	
⑥ Latitude: 37°42'15"	⑦ Longitude: 118°34'	⑧ AMS Sheet: Mariposa	Township: 3S	Range: 31E	Section: 8	⑨ Examined by: H.G.Kreis	⑩ Date: July 1985
						⑪ Office: SWED-Tucson	⑫ Field Days: 1½

Section II Sources of Information

Date Typed 8/27/85

⑬ References

Author	Date	Title	Publications	Vol. No.

J. H. C.

JAN 28 1986

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [?] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Gold	Not researched	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None
Approx Total Footage: _____

⑲ Excavations: Trenches; Underground workings

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Gold Minor: _____

㉕ Host Rocks-Major: Porphyritic Rhyolite Minor: Bio.-hbln. granite

㉖ Age of Host Rocks: Not known

㉗ Nature of Exposures: Rare outcrops outside of trenches and road cuts. Extensive thin soil cover.

㉘ Alteration: Moderate qtz-clay-sericite in vein structure.

㉙ Total Extent: Qtz vn. & stockwork 20'-60' thick,>2500' long

㉚ Structure: Vein (fault?) structure strikes N15°E, dips 75°-90°W. Has same attitude as fault-vein at Sourdough Mine (1 mile to south).

㉛ Ore Occurrence: Massive quartz vein, approx. 2'-20' thick; and wide (≤60') quartz stockwork. Greater than 2500' strike length. Twenty-one samples were taken along the Gold Crown vein. (see attachment)

㉜ Age of Mineralization: not known

㉝ Conclusions & Recommendations: Exposures of the Gold Crown vein show a substantial width and strike. However, the extent of gold mineralization is too limited to indicate an open pit potential of interest to Asarco. The underground mine potential is clouded by at least one previous underground mine failure. The Gold Crown Mine is of no further interest at this time.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

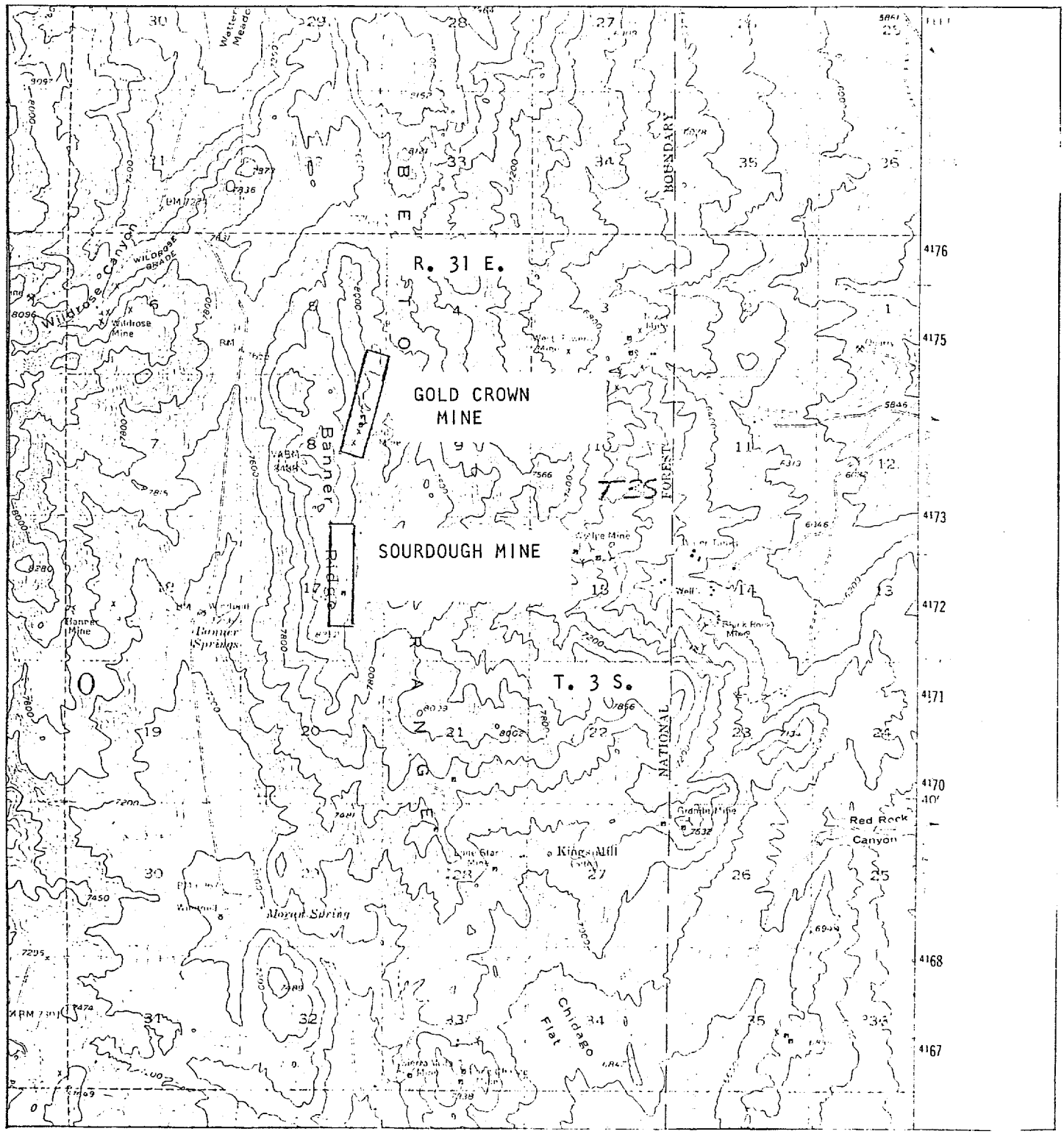
GOLD CROWN MINE

31. Ore Occurrence

None of the samples south of GC-12 contain detectable gold even though the quartz mineralization appears encouraging. All of the samples north of GC-28 contain ≤0.04 ppm Au. Anomalous gold values occur from GC-12 to GC-28, a distance of 800'. In this interval of anomalous gold values, there are four samples ranging from 1.1 to 8.4 ppm Au. Apparently, underground work was done beneath these high grade samples.

A 9/5/41 Asarco memo on the Sourdough Mine mentions that the Gold Crown Mine was developed to a depth of 200' by the Minerals Reduction Co. After doing this development, the Minerals Reduction Co. dropped its option-lease on the Gold Crown even though they had a cyanide mill at nearby Benton. This suggests no ore was developed underground.

The open pit potential of the quartz vein from GC-12 to GC-28 is too small to be of interest to Asarco. It is less than 200,000 tons with a grade of less than 3 ppm Au.



INDEX MAP

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Casa Diablo Mtn. 15'

Twsp.: 3S **Rng.:** 31E **Sec.:** 5,8,17

Prospect Name: Gold Crown & Sourdough Mines

Owner:

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☒

State: California

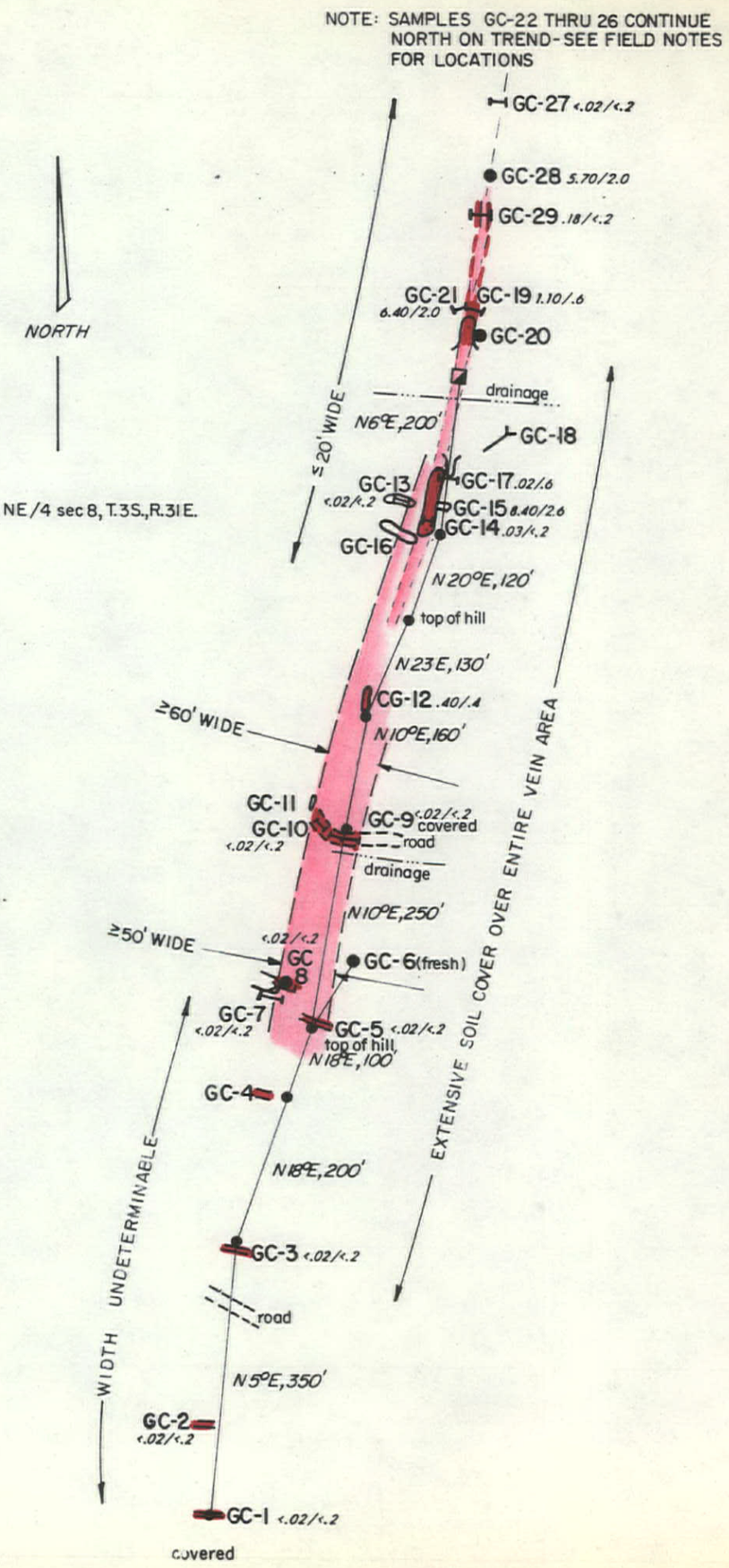
County: Mono

District:

SCALE: 1"=1 mile

MILS and/or Terradata # _____ / _____

map no. 6295 **date** 9/85



All assays in ppm Au/Ag

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Casa Diablo Mtn. 15'

Twsp.: 3 S **Rng.:** 31 E **Sec.:** 5 & 8

Prospect Name: Gold Crown Mine

Owner:

Examined by: H. G. Kreis

Follow-up Recommended: Yes☐ No☒

State: California

SCALE: 1" = 200' brunton & pace

County: Mono

District:

MILS and/or Terradata no. /

map no. 6294 **date** 9/85

H.G. KREIS
JULY, 1985 1/1

GOLD CROWN

Bxa = Stockwork of Qtz. in Rhy

	1 SITE	2 SAMPLE	3 ROCK TYPE	STRUCTURE FLT (Vn)	5 ALTERATION	6 FeOx	7 QTZ	LENGTH	REMARKS
1	GC-1	X	Rhy Bxa	—	Qtz	3% FTS or mag. 4%	20	"Dump" ≈10'E-W	2' Exposure 10' cut E-W
2	-2	X	Qtz Vn & Rhy (altered)	—	Qtz c,s	3% ? FTS 1-6	>50 AN 0-100	"Dump"	No exposure 10' cut E-W
3	-3	X	"	—	"	"	>50	"	"
4	-4	—	"	—	"	"	"	"	"
5	-5	X	Rhy Bxa	—	Qtz, W c,s	≤ ½% FTS. 1	20	≈30' E-W	<5 exposure 35' cut E-W
6	-6	—	Rhy	—	—	—	—	—	Fresh
7	-7	X	Flt	N10E 75W S	S c,s	≤1 1% ? FTS	≤1	15' N60W	At collar of adit Fault in post qtz
8	-8	X	Qtz vn & Rhy Bxa	—	Qtz, W c,s	1-4	20	15'	In adit
9	-9	X	Rhy Bxa	—	Qtz, W c,s	1	15	40' EW	Road base
10	-10	X	Qtz Vn >> Rhy Bxa	—	Qtz	1 ≤1% FTS	>50	30' 15' EW	Road base
11	-11	—	Appears to be subout crop of stg c-s -- (probable flt. of GC-7						
12	-12	X	Qtz vn & Rhy Bxa	— 60°E dip	Qtz	3 1% FTS	>20 Couple 1" vns	Dump of 2-8' wide cut along strike	
13	-13	X	Flted Rhy	M (≈N15E Vert.)	M c,s	<1	1	15' E-W	Sample starts 15' from vein
14	-14	X	Vn		—	Tr	100	20' E-W	Big Boy #1 Claim N. Miller; T. Fancello
15	-15	X	Rhy	N10E 85E M	MS c,s	<½% FTS 1	5	5' EW	E. Wall adj to vn.
16	-16	—	Rhy & And?	Flted? N-S 75W	Fresh-W c,s	—	<1	30' EW	1' deep cut
17	-17	X	Gr	S near Vn	MW, c,s	3% near Vn	2% near Vn	15' EW	Sample starts 4' E. of Vn
18	-18	—	Bio-tite Gr	—	Weathered	—	—	100' 55° W	Adit (caved 100' in)
19	-19	X	Qtz Vn	N16E 75W S	Qtz, S c,s	5% FTS (?) 5	>50	20' EW	
20	-20	—	Gr & Rhy	—	V.W c,s, epid Weathered	— ?? FTS	—	>5 EW	E. wall of qtz vn
21	-21	X	Rhy ?	M	M c,s	10	—	5' EW	0-5' W of qtz vn
22	-22	X	Rhy Bxa	—	Qtz, VW c,s	<1	15	40' N70°E	500' No. of GC-25 from GC-22
23	-23	X	"	—	Qtz, VW c,s epid	<1	8	65' N70E	Continues ENE ^
24	-24	—	Rhy & Gr	—	—	—	—	Scattered outcrops	50' to 100' E of #23
25	-25	—	Rhy	—	—	—	Scattered Qtz & Epid. Vnlts		Starting 500' N. of GC-23 & cont. another 800' N'ly
26									
27	-26	X	Qtz Vn & Rhy Bxa	—	M c,s	1	20	"Dump" of 30' EW cut	Only 2' qtz vn exposed 500' So of GC-25
28	-27	X	" "		"	"	"	"	Rare exposures 150' So. of GC-26
29	-28	X	Qtz Vn	— (stg dip)	Qtz	6 FTS 6	>70	Dump of 2'-4' Vn	100' So of GC-27
30	-29	X	Qtz Vn	—	Qtz	4 FTS 4	>70	2-3' thick Vns + 5' of W. Wall	11' over 25' width GC-29 is 50' So of GC-28
31									

EFFICIENCY LINE • 22-206

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Tucson, Arizona 85703
(602) 622-4836

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)
	51	SD-35	<.02	<.2
	52	SD-36	<.02	<.2
	53	SD-37	<.02	<.2
	54	SD-38	.57	1.4
	55	SD-39	.02	.4
	56	SD-40	<.02	<.2
GOLD CROWN MINE	57	GC-1	<.02	<.2
	58	GC-2	<.02	<.2
	59	GC-3	<.02	<.2
	60	GC-5	<.02	<.2
	61	GC-7	<.02	<.2
	62	GC-8	<.02	<.2
	63	GC-9	<.02	<.2
	64	GC-10	<.02	<.2
	65	GC-12	.40	.4
	66	GC-13	<.02	<.2
	67	GC-14	.03	<.2
	68	GC-15	8.40	2.6
	69	GC-17	.02	.6
	70	GC-19	1.10	.6
	71	GC-21	6.40	2.0
	72	GC-22	.04	<.2
	73	GC-23	<.02	<.2
	74	GC-26	.04	<.2
	75	GC-27	<.02	<.2

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TAJ 434
July 24, 1985

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)
	76	GC-28	5.70	2.0
	77	GC-29	.18	<.2
GREEN HAT	78	GH-1	<.02	<.2
	79	GH-2	<.02	.4
	80	GH-3	<.02	<.2
	81	GH-4	<.02	<.2
	82	GH-5	<.02	.2

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn: Mr. James D. Sell
Ms. Mary Kavanagh

REGISTERED ASSAYER
CERTIFICATE NO.
9425
WILLIAM L.
LEHMBECK
ARIZONA

William Lehmbeck
Manager

~~JHC~~ - ER-FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Poverty Hills	USA	California
	④ USGS Quad. Big Pine 15'	⑤ File or Gore No. Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
37°04'	118°16'	Mariposa	10S	34E	SW/4 21	H.G. Kreis	July 1985
						⑪ Office SWED-Tucson	⑫ Field Days <1

Section II Sources of Information

Date Typed 8/26/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Geologic maps avilable in US PP 470 and GQ-528				

J. H. C.

SEP 30 1985

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Geologic Interest

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [X] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
	None	

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
	None	

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations Road cut

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au-AG

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major Limestone-siltstone (2 sq.mi.) Minor _____

㉖ Age of Host Rocks Paleozoic

㉗ Nature of Exposures Road cut and outcrops common above road cut.

㉘ Alteration Local strong goethite (after ankerite?), local bleaching, local clay alteration.

㉙ Total Extent Not determined

㉚ Structure N 0-30°W striking, 40-90°W dipping bedding.

㉛ Ore Occurrence Three geochem samples (NE-19, -21,-22) taken along 800' of road cut show 0.045 ppm Au in sediments. A 200' long sample has 11.0 ppm Ag (MnOx present).

㉜ Age of Mineralization Not known

㉝ Conclusions & Recommendations Silty and carbonate rich sediments show local hot springs type alteration with anomalous Au-Ag-As-Sb-Cd-Cu. Unfortunately, the area of outcropping sediments is totally withdrawn from mineral entry (BLM, 1931, watershed protection). All the remaining nearby land belongs to the city of Los Angeles. No further work is recommended.

(For additional space use extra sheets)

H.G. KREIS
JULY, 1985

POVERTY HILLS FIELD NOTES

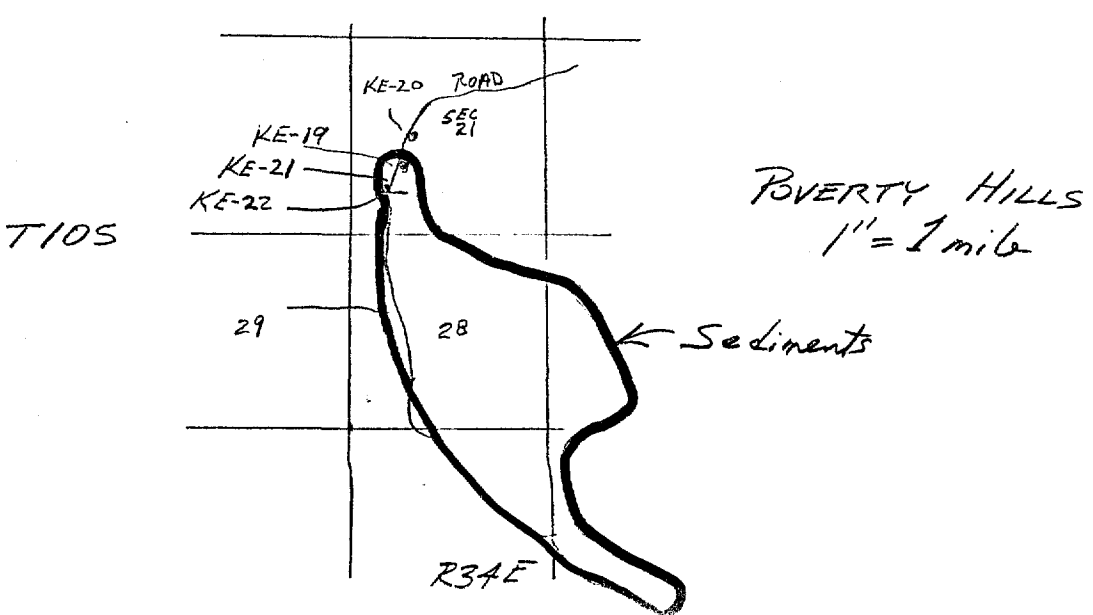
SW/4 SECTION 21 (T10S, R34E) Check for spec-mag.-goe in granite -- see KE-20

NE-19 Sample of sediments, 500' SW of last granite outcrop. Highly contorted bedding with a general low angle apparent dip to NE. Mixed lithology of carbonate rich (weathers like ankerite to goeth) sediment to totally clay altered shale(?). Locally abundant goeth on weathered surfaces. Rare qtz-goe. veinlets.

NE-20 Granite with strong goe. after 5% mag.-spec. Low angled dipping foliation (to east).

NE-21 Sample of vein (formerly a dike??) of qtz-goe (pitch) - totally altered rock. 35' exposed along road; true thickness may be more like 15'. North contact N50°E, w/ mod-stp SE dip.

NE-22 Sample, 200' length, white, bleached, clay alt, (calcareous loc.) silty sed. w/ local MnO_x and loc. silica veinlets (near adit). Locally broken, alt, and porous.



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Tucson, Arizona 85703
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REPORT OF ANALYSIS

JOB NO. TAJ 434A
August 16, 1985
NE-1/GH-5
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. H.G. Kreis
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 3 Pulp Samples

ITEM	SAMPLE NO.	Au (ppm)	TAJ-434	Ag (ppm)	TAJ-434	As (ppm)	Sb (ppm)	Mo (ppm)
23	NE-19	.03	.05	.3	<.2	35.	2.	2.
24	NE-21	<.02	<.02	.6	.4	35.	28.	4.
25	NE-22	.06	.04	12.0	11.0	35.	10.	4.

ITEM	SAMPLE NO.	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
23	NE-19	<1.	1.2	<1.	105.	<1.
24	NE-21	<1.	5.6	<1.	65.	<1.
25	NE-22	6.	4.0	<1.	520.	<1.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn: Mr. James D. Sell
Ms. Mary Kavanagh

Charles E. Thompson
Chief Chemist 8/16/85

~~JHC~~ - ER-FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: SOURDOUGH MINE					② Country: USA	③ State or Province: California	
					④ USGS Quad: Casa Diablo 15'	⑤ File or Gore No.: Mono Co.	
⑥ Latitude: 37°41'15"	⑦ Longitude: 118°34'15"	⑧ AMS Sheet: Mariposa	Township: 3S	Range: 31E	Section: 17	⑨ Examined by: H.G.Kreis	⑩ Date: July 1985
						⑪ Office: SWED-Tucson	⑫ Field Days: 2

Section II Sources of Information

Date Typed 8/26/85

⑬ References

Author	Date	Title	Publications	Vol. No.
J.F. Johnson	9/5/41	Sourdough Mine	Asarco memo in files	

J.H.C.

JAN 28 1986

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [?] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Gold	<10,000(Est.)	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes: None

Approx Total Footage: _____

⑲ Excavations: Trenches and 2 adits

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Gold; Minor: _____

㉕ Host Rocks-Major: Porphyritic Rhyolite; Minor: Biot. granite, Biot. schist

㉖ Age of Host Rocks: _____

㉗ Nature of Exposures: Entire area is covered with thin soil; rare outcrops except in trenches and road cuts. Excellent exposures in trenches.

㉘ Alteration: Moderate clay-sericite; often enhanced by weathering

㉙ Total Extent: 20' to 150' wide; >1000' long

㉚ Structure: N15°E striking, 50°-65°W dipping faults control alteration and mineralization.

㉛ Ore Occurrence: Local minor quartz and 0-1% former pyrite occur in narrow (<5') fault-vein structures. Thirty-one geochem samples were collected, and all but one sample contains less than 0.6 ppm Au. (att.)

㉜ Age of Mineralization: not known

㉝ Conclusions & Recommendations: The Sourdough Mine was examined because the above report describes mineralization extending several hundred feet into the footwall of the vein. Mapping and sampling show a lack of significant gold and silver mineralization at the surface. The property is of no further interest.

(For additional space use extra sheets)

SOURDOUGH MINE

#31. Ore Occurrence (Continued)

Sample SD-2, a 4' thick fault-vein, has 2.50 ppm Au and 2.4 ppm Ag.

JULY 1985
H.G. KREIS

SOUR DOUGH MINE

1/2

	1 SITE	2 SAMPLE TAKEN	3 ROCK TYPE	4 FAULTING	5 ALTN	6 SOE (FeOx)	7 QTZ	8 CALCITE	9 LENGTH	
1	SD-1	X	Rhy	W. NIBE, 48°W	M c,s	2 ½% FTS	—	—	15'	
2	-2	X	Fault	V. Stg.	S c,s	7 4% FTS	—	—	4' true	
3	-3	X	Rhy	W	M c,s	2	—	—	25'	
4	-4	X	Rhy	W	M c,s	1	—	—	30	
5	-5	X	Rhy	Loc MS W	M c,s	1	—	—	50	Weathered
6	-6	X	Rhy	W	M c,s	1	—	—	50	"
7	-7	X	Rhy	W	MS c,s	<1	—	—	30'	
8	-8	—	Rhy	—	W c,s	—	—	—	50'	
9	-9	X	F-g bio gr(?)	—	M s, musc.	0-4	—	—	35'	
10	-10	—	F-g Bio gr.	—	Weathered Crumbly	—	—	—	30'	Fresh bi
11	-11	X	Flt'd Rhy(?)	Dip 65°W V. Stg	MS c,s	½% FTS. 2	—	—	30'	
12	-12	X	Rhy?	W	M c,s	3	—	—	20	
13	-13	X	Bio gr.	—	M s, musc	½% FTS 0-4	—	—	35	Same gr as SD-9 Fresh Bi Same as #12
14	-14	—	Bio gr.	—	Weathered Crumbly	—	—	—	20	
15	-15	X	Flted Rhy?	Dip 65°W V. Stg	MS c,s	½% FTS 3	≤1%	—	8	
16	-16	X	Flted Rhy	S	MS c,s → W (easterly)	½% FTS 3	—	—	15	
17	-17	—	Rhy	—	Fresh	—	—	—	60	CIBOLA 4 & 5 claims
18	-18	—	Bio gr (schist)	—	Musc. Weathered	On front.	—	—	50	
19	-19	X	"	—	"	"	—	—	30	
20	-20	X	Flt. vn.	N20E 50°W V. stg	S c,s	≤1% FTS. 4	1%	—	2' true	
21	-21	X	Rhy (?)	MW	M c,s	2	—	—	12	
22	-22	X	Rhy	—	W c,s → fresh	1	1	—	20	
23	-23	X	Rhy	—	W c,s	1% FTS 2	5	—	12	
24	-24	X	Rhy Rhy?	Bxa M	W c,s M c,s	2 2	— ≤1	8 stock-work 4	3 12 } 15	
25	-25	X	Rhy	S (?)	Weathered MW c,s	<½% FTS 1	—	—	30	
26	-26	X	Flt.	N40W 80SW S	S, c,s	1% FTS 4	—	—	15	
27	-27	X	Rhy	W	Fresh → W c,s	stain	—	—	25	Shallow dipping Gr-Rhy contact on so. wall
28	-28	X	Rhy w/ 6" gr vn	Vn N50W Vert. S	MW c,s	<½% FTS. 3	—	—	15	
29	-29	—	Bio Schist	—	—	Tr pitch 1% on front	—	—	25	
30	-30	—	" "	—	—	"	—	—	10	
31	-31	—	Rhy	—	V.W c,s	Tr FTS <1	—	—	15	

SOURDOUGH MINE, CONT

	1 SITE	2 SAMPLE TAKEN	3 ROCK TYPE	4 FAULTING	5 ALTN	6 GOE. FeO	7 QTZ	8 CALCITE	9 LENGTH
1	SD-32	X	Rhy.	W→S N15E 85E	M c,s	3 3% FTS.	Stockwork 10	—	10
2	-33	X	Rhy	S	MS c,s	1 Tr FTS	—	—	12
3	-34	X	Rhy	—	F→W c,s	—	—	—	18
4	-35	X	Rhy & Grd(?)	Loc. W	M c,s	2 1½% FTS	Stockwork 4	—	12
5	-36	X	Gn & Rhy	—	F→Ul c,s Rotton	Tr ¼% FTS	—	—	25
6	-37	X	Rhy & Gn(?)	M? 45-65°	M c,s	4 3% FTS	—	—	25
7	-38	X	Ft. Vn	S	S c,s	8 ½% FTS	Tr	—	12
8	-39	X	Rhy	MW	MS c,s	2 Tr FTS	Tr	—	15
9	-40	X	Rhy	W	V.W c,s	1	Tr	—	20
10	-41	—	Rhy	W	W c,s Weathered	1	—	—	30
11	-42	—	Rhy	Loc. S??	V.W c,s	Tr	—	—	50
12	-43	—	Alternating Rhy-And	—	V.W. c,s Weathered	—	Small qtz vn on roof at E. end	—	200'
13	-44	—	Rhy-And.	—	MS→c,s @ E. end	5 @ E. End	—	—	200'
14	-45	—	Rhy-And.	—	V.W c,s	—	—	—	50'
15									
16									
17									
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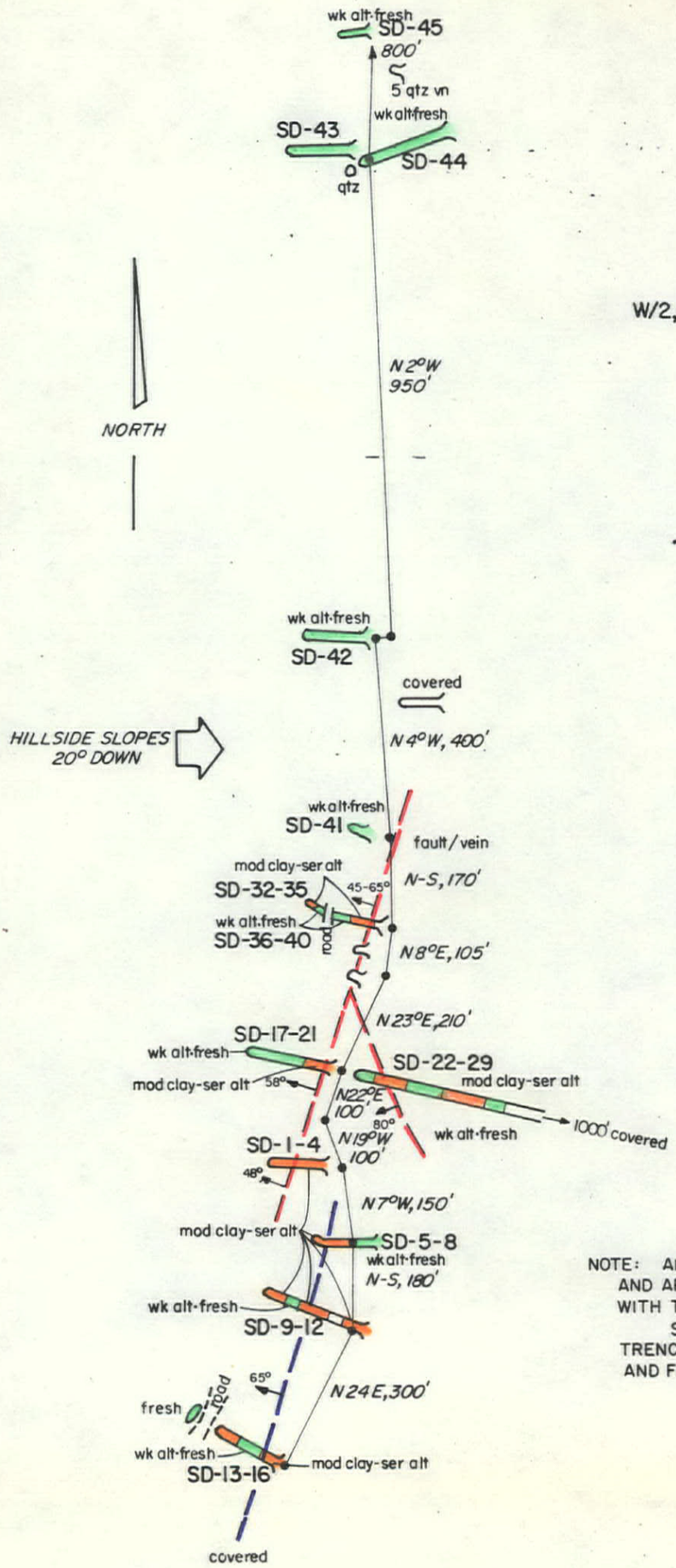
27									
28									
29									
30									
31									

"CIBOLA" CLAIMS (LODE) 5-21-1968
C.C. Miller } Box 936 BENTONITE
G. Stermer }
F. H. Voss 960 Wilkinson Reno Nv.

EFFICIENCY LINE 22-206 AMPAD



W/2,E/2 sec 17, T.3S.,R.31E.

NOTE: ALL THE AREA BETWEEN AND AROUND TRENCHES IS COVERED WITH THIN SOIL.
SEE CROSS SECTIONS OF TRENCHES FOR SAMPLE LOCATIONS AND FIELD NOTES FOR GEOLOGY

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Casa Diablo Mtn 15'

Twsp.: 3 S Rng.: 31 E Sec.: 17

Prospect Name: Sourdough Mine

Owner:

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☒

State: California

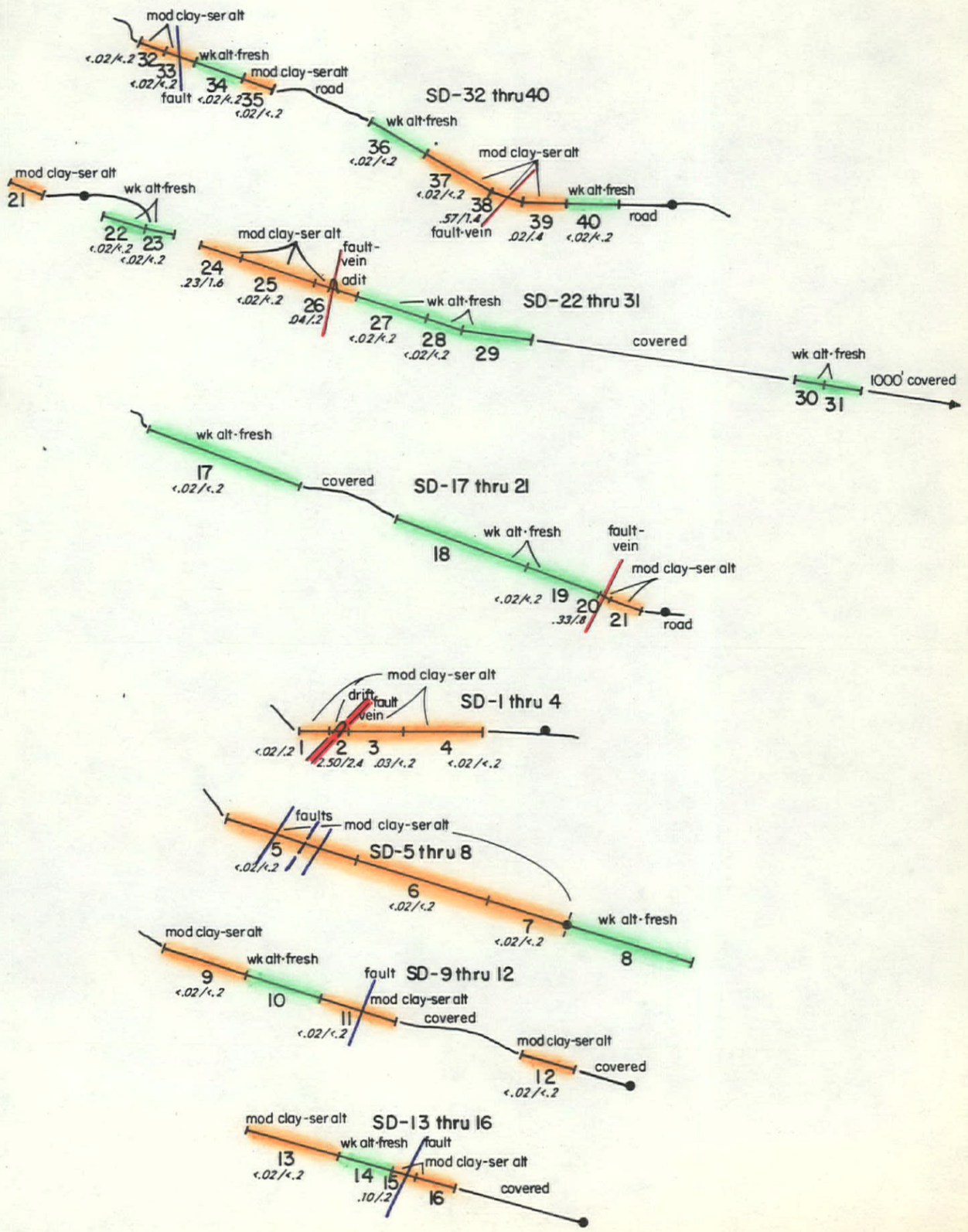
County: Mono

District:

SCALE: 1" = 300' brunton & pace

MILS and/or Terradata no. /

map no. 6292 date 9/85



All assays ppm Au/Ag

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Casa Diablo Mtn. 15'

Twsp.: 3 S **Rng.:** 31 E **Sec.:** 17

Prospect Name: Sourdough Mine

Owner:

Examined by: H.G. Kreis

Follow-up Recommended: Yes☐ No☒

State: California

County: Mono

District:

SCALE: 1" = 50'

MILS and/or Terradata no. /

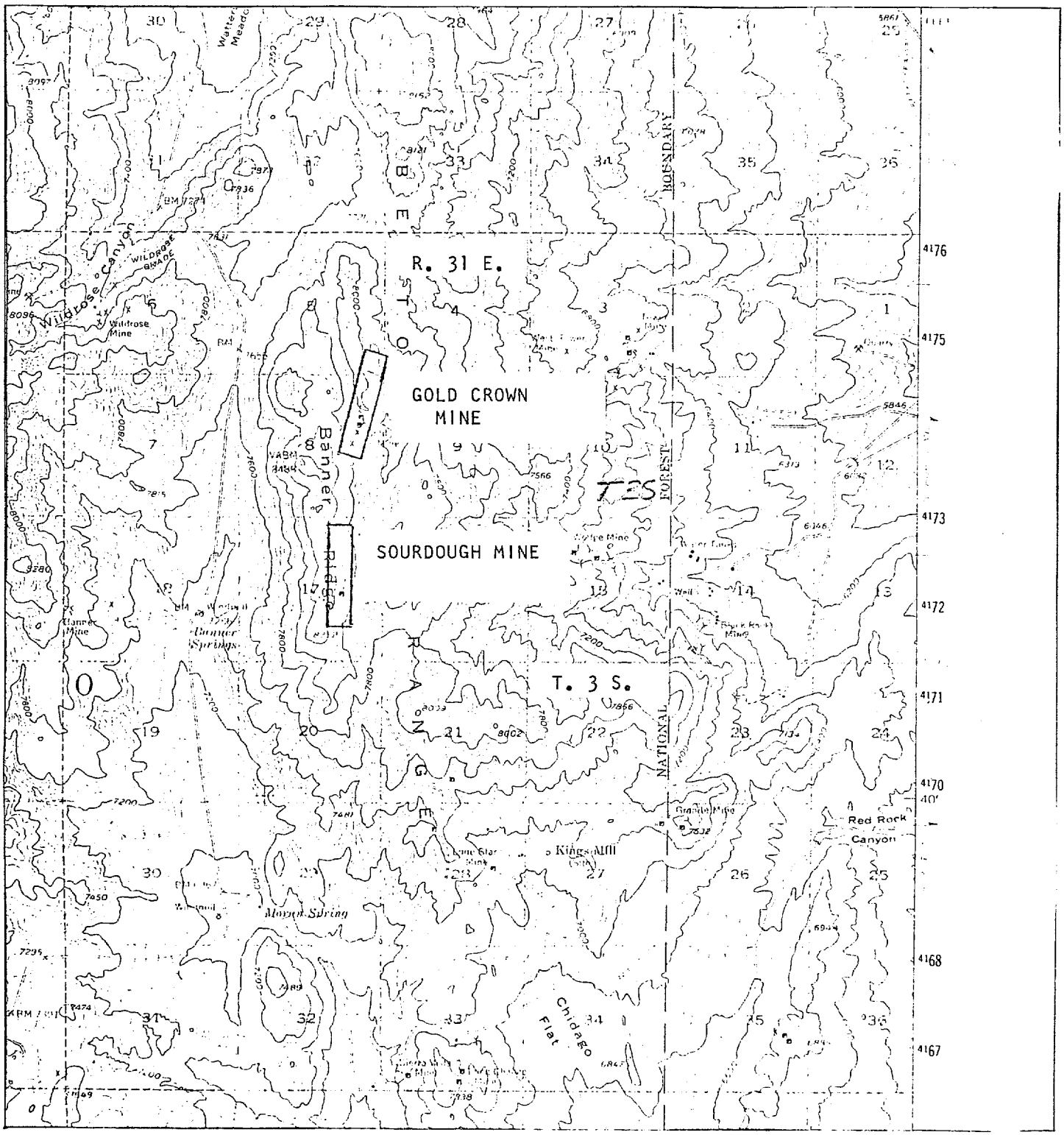
map no. 6293 **date** 9/85

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)
SOURDOUGH MINE	26	SD-1	<.02	.2
	27	SD-2	2.50	2.4
	28	SD-3	.03	<.2
	29	SD-4	<.02	<.2
	30	SD-5	<.02	<.2
	31	SD-6	<.02	<.2
	32	SD-7	<.02	<.2
	33	SD-9	<.02	<.2
	34	SD-11	<.02	<.2
	35	SD-12	<.02	<.2
	36	SD-13	<.02	<.2
	37	SD-15	.10	.2
	38	SD-~~16~~17	<.02	<.2
	39	SD-19	<.02	<.2
	40	SD-20	.33	.8
	41	SD-22	<.02	<.2
	42	SD-23	<.02	<.2
	43	SD-24	.23	1.6
	44	SD-25	<.02	<.2
	45	SD-26	.04	.2
	46	SD-27	<.02	<.2
	47	SD-28	<.02	<.2
	48	SD-32	<.02	<.2
	49	SD-33	<.02	<.2
	50	SD-34	<.02	<.2

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

	ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)
	51	SD-35	<.02	<.2
	52	SD-36	<.02	<.2
	53	SD-37	<.02	<.2
	54	SD-38	.57	1.4
	55	SD-39	.02	.4
	56	SD-40	<.02	<.2
GOLD CROWN MINE	57	GC-1	<.02	<.2
	58	GC-2	<.02	<.2
	59	GC-3	<.02	<.2
	60	GC-5	<.02	<.2
	61	GC-7	<.02	<.2
	62	GC-8	<.02	<.2
	63	GC-9	<.02	<.2
	64	GC-10	<.02	<.2
	65	GC-12	.40	.4
	66	GC-13	<.02	<.2
	67	GC-14	.03	<.2
	68	GC-15	8.40	2.6
	69	GC-17	.02	.6
	70	GC-19	1.10	.6
	71	GC-21	6.40	2.0
	72	GC-22	.04	<.2
	73	GC-23	<.02	<.2
	74	GC-26	.04	<.2
	75	GC-27	<.02	<.2



INDEX MAP

ASARCO Incorporated

1985 GOLD PROGRAM

AMS Sheet: Mariposa

USGS Quad.: Casa Diablo Mtn. 15'

Twsp.: 3S **Rng.:** 31E **Sec.:** 5,8,17

Prospect Name: Gold Crown & Sourdough Mines

Owner:

Examined by: H.G.Kreis

Follow-up Recommended: Yes☐ No☒

State: California

County: Mono

SCALE: 1"=1 mile

District:

MILS and/or Terradata # _____ / _____

map no. 6295 **date** 9/85

ASARCO EXPLORATION RECORD

JHC-ER File

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [X] Submittal

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Jack Black Mine	USA	California
	④ USGS Quad. Independence	⑤ File or Gore No. Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
36°56'30"	118°10'45"	Mariposa	12S	35E	5	H.G. Kreis	7-2-85
						⑪ Office SWED - Tucson	⑫ Field Days 1

Section II Sources of Information

Date Typed 8/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Submitted by Ken Jacobs of Big Pine California, owned by Charlie Pierce of Bishop.			J. H. C. SEP 30 1985	

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Little or none		

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes Appr. 280
Approx Total Footage 9000'

⑲ Excavations Couple deep trenches Prospect Pits

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached (Drill Hole ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Gold

㉔ Ore Minerals-Major Gold Minor

㉕ Host Rocks-Major Granite Minor

㉖ Age of Host Rocks Probably Jurassic-Cretaceous

㉗ Nature of Exposures Sufficient to see there is no tonnage potential for anything of interest to Asarco.

㉘ Alteration None

㉙ Total Extent

㉚ Structure NE'ly striking veins in massive granite. Veins have moderate to steep dips.

㉛ Ore Occurrence Gold occurs in rare thin (≤1') quartz veins. A Canadian company, Panasonic Energy Corp., has drilled 18 more holes on the gold intercepts of older drill holes whose results are

㉜ Age of Mineralization Not known

㉝ Conclusions & Recommendations The property was visited to determine the justification for so many drill holes. Apparently the drilling was done out of ignorance; there was no geologic potential to justify such drilling.

The property has no potential and is of no interest to Asarco.

(For additional space use extra sheets)

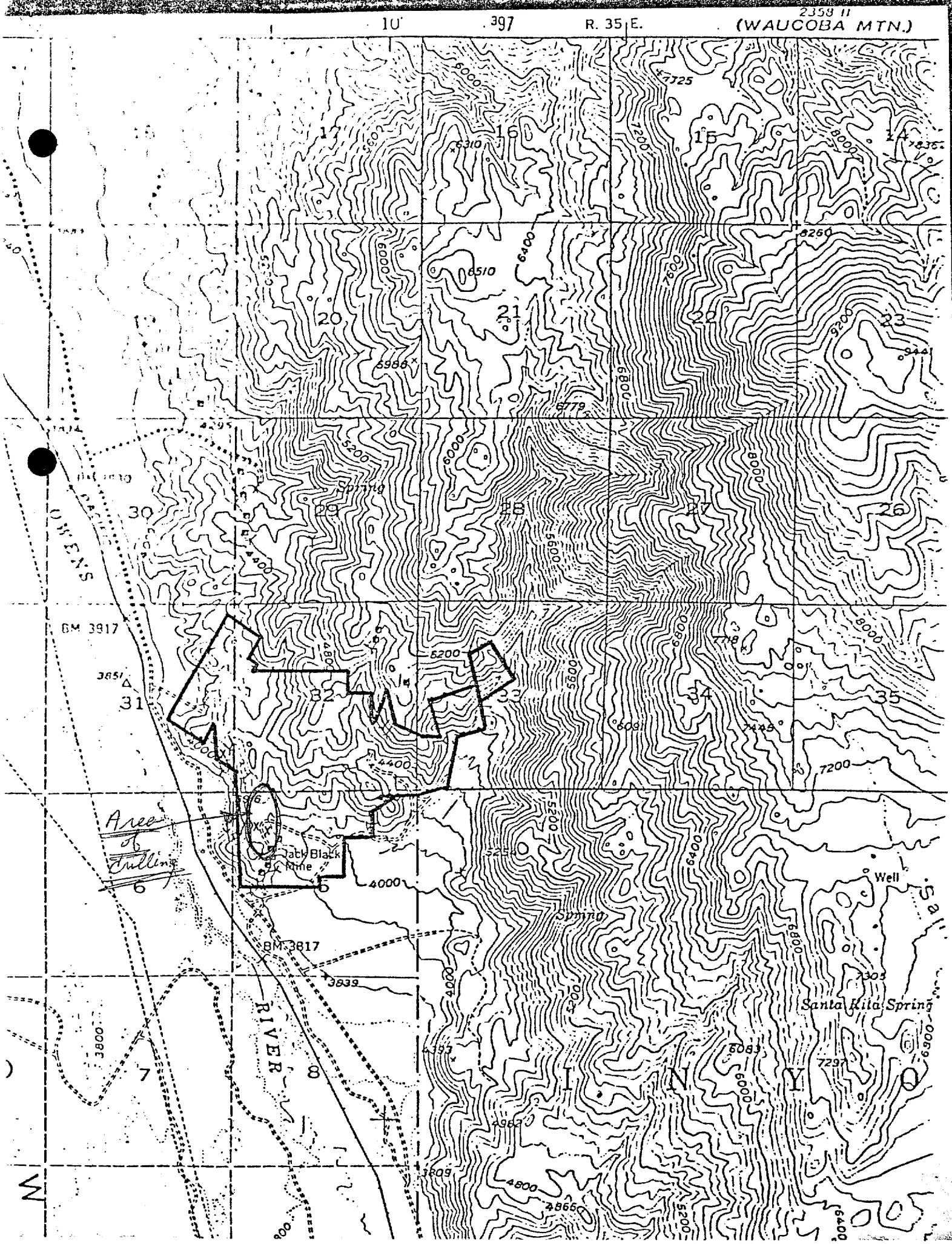
Form Revised-June 1980-J.H.C. MVK-5193

Jack Black Mine

31. Ore Occurrence (continued

attached. One Panasonic drill hole was a 6' offset of a quartz vein with a 3 opt Au assay (sample and assay of unknown integrity), but the drill hole intercept of the same quartz vein ran 0.0X opt Au.

Stops at a couple of diggings one to two miles to the north showed thin quartz veins in fresh, solid granite. Most of the diggings along the 3 mile trend of prospects continuing north from the Jack Black Mine are probably of similar geology and of no interest to Asarco.


10'
397
R. 35 E.
2358 II
(WAUCOBA MTN.)
Area of Drilling
Jack Black Mine
BM 3817
Spring
Well
Santa Rita Spring
OWENS
RIVER
INYO

GWEN MINE TEST HOLE RESULTS

Most of the assays are believed to have been done by Charlie Pierce, the property owner, in his own ~~to~~ lab.

Drill Hole No.		Au	Ag
1*	12-14'	.580	.06
	22-24	Tr	.24
	25' to foot wall		
2	Drilled 9' into drift.		
3	3-9	.056	.09
	12' to granite.		
4	18-20	2.708	.50
	20-22	1.798	.31
	22-24	.166	.10
	25' to hard granite.		
5	18-22	.466	Tr
	25' to foot wall.		
6	12-16	Tr	.14
	16-18	.006	.27
	18-20	.792	.12
	20-22	.772	.12
	22-24	.16	Tr
	26' to foot wall.		
7	10-14	.006	.15
	15' to hard material.		
8	6-10	.006	.10
	42' in soft material.		
9	10-12	.008	.11
	12' to foot wall.		
10	12-14	.024	.20
	14-15	1.500	.59
	15-16	.796	.10
	16-18	1.362	.24
	18' to foot wall. Gold in pan.		
11	7-9	.056	.09
	Drilled 50° southerly toward edge of ore.		
12	16-18	Tr	Tr
	18-20	Tr	Tr
	20-22	Tr	Tr
	22-24	.01	Tr
	24-26	.01	Tr
	26-28	.01	Tr
	28-30	.56	.10
	30-32	.23	.05

Drill Hole No.		Au	Ag
13	16-18	.01	Tr
	18-20	.01	Tr
14	2-6	Tr	Tr
	6-10	Tr	Tr
15	4-8	.016	Tr
	14-18	.022	.21
	18-22	.014	.56
	22-24	1.142	1.87
	24-28	.482	.41
	28-32	Tr	Tr
	32-36	.018	.41
	36-40	.014	.35
16	8-12	.012	Tr
17	10-15	.013	Tr
	15-18	.010	Tr
18	6-8	.018	Tr
	8-15	.012	Tr
	15-24	.007	Tr
19	2-4	.010	Tr
	4-8	.016	.20
20	12-18	.008	Tr
	18-22	.007	Tr
	22-24	Tr	Tr
21	10-14	.016	.46
	14-16	.020	.47
	16-18	3.042	9.99
	18-20	1.936	.77
	20-22	.484	.64
22	12-16	.024	.12
	Hard granite.		
23	8-12	Tr	Tr
	12-16	Tr	Tr
	16-18	.46	.30
	18-20	.48	.05
	20-22	Tr	Tr
24	14-16	Tr	Tr
	16-18	Tr	Tr
	18-20	Tr	Tr
	20-24	Tr	Tr
	24-28	Tr	Tr
	28-30	Tr	Tr

Many or most of the drill holes were done by the property owner, Charlie Pierce

*Numbers 1-29 were drilled with a vacuum drill.

Drill Hole No.		Au	Ag
25	18-20'	.140	3.10
	20-24	.44	.25
26	12-14	Tr	Tr
	14-16	Tr	Tr
	16-18	.28	.05
	18-20	.04	Tr
28	20-26	Tr	Tr
	26-32	Tr	Tr
	32-34	Tr	Tr
29	10-14	Tr	Tr
	20-22	.10	Tr
	22-24	.06	Tr
	24-26	.05	Tr
101*	16'		
102	25-30	.02	.20
	30-35	.01	.10
	35-40	Tr	Tr
103	15'		
104	10-15	Tr	Tr
	15-20	Tr	Tr
	20-25	Tr	Tr
	25-30	Tr	Tr
	30-35	Tr	Tr
	35-40	.23	.05
	40-45	.42	.05
	45-50	.21	.10
105	20-25	.59	.10
	25-30	.18	.05
	30-35	.07	Tr
	35-45	.01	Tr
105A	20-25	2.69	.90
	(vacuum drilled)		
106	20-25	.04	Tr
	25-30	.01	Tr
	30-35	.03	Tr
	35-40	.02	Tr
	40-45	Tr	Tr
	45-50	Tr	Tr
107	10-15	.14	.15
108	10-20	.78	.30

Drill Hole No.		Au	Ag
109	20-25	.16	.05
	(vacuum drilled)		
110	20-25	.06	.10
	25-30	.05	Tr
111	15-18	.02	Tr
	(vacuum drilled)		
112	15-18	.06	Tr
113	10-15	.06	Tr
114	25-35	.01	Tr
	35-40	Tr	Tr
	40-45	Tr	Tr
115	18-20	.6348	.9462
	20-25	.8795	1.6468
116	10-15	.07	.15
	15-20	.03	Tr
117	15-20	.01	Tr
119	25-30	.04	Tr
120	10-15	Tr	Tr
	15-20	Tr	Tr
	20-25	Tr	Tr
	25-35	Tr	Tr
	35-45	.02	.10
121	10-20	Tr	Tr
	20-30	.01	Tr
	30-40	Tr	Tr
122	0-10	Tr	Tr
	10-20	Tr	Tr
	20-25	.02	Tr
	25-30	.03	.10
	30-40	.01	.10
	40-50	Tr	Tr
123	18-20	2.78	.60
	20-22	.74	.23
	(vacuum drilled)		
124	15-20	Tr	Tr
	20-25	Tr	Tr
	25-30	Tr	Tr
126	15-20	.01	Tr
	20-25	Tr	Tr
	25-30	Tr	Tr

*Numbers 101 through 280 were drilled with an air track.

Drill Hole No.		Au	Ag
128	15-20'	1.48	1.10
	20-25	.10	.10
129	10-20	.90	.20
130	5-10	.03	Tr
	10-15	.03	Tr
132	0-10	.03	.05
	10-20	.01	Tr
134	10-15	.11	.05
	15-20	.13	.15
135	0-10	.01	.10
	10-20	.02	.15
136	5-10	Tr	Tr
	10-20	.01	Tr
137	5-15	Tr	Tr
	15-25	Tr	Tr
	25-35	Tr	Tr
138	0-10	.132	.58
	10-20	.00	.20
	25-35	Tr	Tr
139	0-10	Tr	.6962
	10-20	.0302	.2659
	20-30	.0082	.5385
	30-40	.0162	.2944
	40-50	.0089	.4712
140	0-10	.0181	.2123
	10-20	.0012	1.4396
	20-30	Tr	.3293
142	0-10	.0198	.2703
	10-20	.0197	.2427
147	0-10	.062	.1010
	10-20	1.220	1.0000
148	0-10	.010	.22
	10-20	.048	.36
	20-30	.00	.08
	30-40	.002	.01
	40-50	.006	.08
	50-60	.004	.07
149	0-10	.004	.05
	10-20	.014	.00
	20-30	.052	.07
	30-40	.030	.00

Drill Hole No.		Au	Ag
150	0-10	.002	.00
	10-20	.002	.00
	20-30	.002	.00
	30-50	.002	.09
151	0-10	.002	.00
	10-20	.002	.00
	20-30	.002	.01
	30-40	.002	.00
152	0-10	Tr	.2227
	10-20	Tr	.3270
153	0-10	.004	.08
	10-30	.004	.08
	30-50	.004	.06
	granite		
154	0-10	Tr	.1352
	10-20	.00	.00
	20-30	.00	.00
155	0-10	Tr	.1379
	10-20	.00	.00
	20-30	.00	.00
156	0-10	.00	.00
	10-15	.00	.00
157	0-10	.00	.00
	10-20	Tr	.0592
	20-30	Tr	.0460
	30-40	Tr	.00
	40-45	.00	Tr
158	0-10	Tr	.0294
	10-20	.00	Tr
159	0-10	Tr	.0214
	10-20	.00	.00
	20-30	Tr	.1091
160	0-10	.00	.00
	10-20	.00	.00
161	0-10	.00	Tr
	10-20	Tr	.0803
	20-30	.0037	.0964
	30-40	Tr	.1766
	40-50	Tr	.1748
162	0-10	Tr	.2534
	20-30	Tr	.2128
	30-35	Tr	.1588

Drill Hole No.		Au	Ag
163	0-10'	Tr	.1815
	10-20	Tr	.1651
	20-30	Tr	.2367
	30-40	Tr	.1066
164	0-10	Tr	.1642
	10-15	Tr	.1171
	15-18	.005	.100
165	0-10	Tr	.1120
	10-20	Tr	1.0574
	20-30	Tr	1.3518
	30-40	.0340	.7961
166	0-10	.4812	.5560
	10-20	.1630	.4849
	20-30	.00	.7945
	30-40	Tr	.1966
	40-50	.00	.5602
167	0-10	Tr	.1951
	10-20	Tr	.1344
	20-30	Tr	.1819
	30-40	Tr	.0729
	40-50	Tr	.1788
	50-60	Tr	.0775
168	0-10	.00	Tr
	10-20	.00	Tr
	20-30	.00	.00
	30-40	.00	.00
170	0-10	Tr	.0743
	30-40	.002	.02
	40-50	.002	.00
	50-60	.002	.02
171	0-10	.002	.08
	10-20	.002	.01
	20-30	.002	.02
	30-40	.00	.001
	40-50	.002	.03
	50-60	.002	.04
	60-70	.002	.05
172	0-10	.002	.04
	10-20	.00	Tr
	20-30	.002	.00
	30-40	.002	.02
	40-50	.002	.03
	50-60	.002	.03
	60-70	.002	.03
173	0-10	.00	Tr
	10-20	.00	Tr
	20-30	.002	.00

Drill Hole No.		Au	Ag
174	0-10	.06	.02
	10-18	.004	.05
	18-20	1.200	.725
	(vacuum drilled)		
175	0-10	.002	.00
	10-20	.002	.00
176	0-10	Tr	.2742
	10-20	.0056	.3022
	20-30	Tr	.3432
	30-40	Tr	.1778
	40-50	Tr	.2258
	50-60	Tr	.1877
	60-70	Tr	.1469
177	0-10	.002	.00
	10-20	.002	.00
178	0-10	.002	.01
	10-18	.002	.04
	18-20	.605	.325
	(vacuum drilled)		
	20-25	.480	.496
	(vacuum drilled)		
	25-30	.005	.100
	30-35	.368	.102
	35-40	.008	.122
179	0-10	.0247	.3289
	10-20	.0377	.6388
	20-30	.1480	.4508
	30-40	.0146	.7723
	50-60	Tr	.3015
180	0-10	Tr	.3256
	10-20	.0911	.4697
	20-30	.1209	.4417
181	0-10	.00	Tr
	10-20	Tr	.3937
	20-30	Tr	.3049
182	0-10	.002	.04
	10-20	.002	.08
	20-25	.002	.03
183	0-10	.002	.00
	10-20	.002	.02
184	0-10	.002	.08
	10-20	.002	.01
185	0-10	.002	.00
	10-20	.002	.00

Drill Hole No.		Au	Ag
186	0-10'	.002	.00
	10-15	.002	.03
187	0-10	.002	.00
	10-20	.002	.00
	20-30	.002	.00
	30-40	.002	.00
	40-50	.002	.00
	50-60	.002	.00
188	0-10	.002	.07
	10-20	.006	.07
189	0-10	.002	.01
	10-20	.002	.04
	20-30	.002	.01
	30-35	.002	.00
190	0-10	.002	.19
	10-20	.002	.02
	20-30	.004	.04
	30-40	.002	.08
	40-50	.002	.08
	50-60	.002	.00
191	0-10	.002	.00
	10-20	.002	.84
	20-25	.002	.09
192	0-10	.002	.00
	10-15	.002	.09
193	0-10	.002	.00
194	0-10	.004	.03
	10-20	.002	.00
	20-30	.004	.00
195	0-10	.004	.04
	10-20	.002	.01
	20-30	.002	.00
196	0-10	.002	.00
	10-20	.002	.03
197	0-10	.00	.02
	10-15	.002	.00
198	0-10	.002	.01
	10-20	.002	.00
	20-30	.002	.01
	30-40	.002	.00
199	0-10	.004	.04
	10-20	.002	.00
	20-30	.002	.01
	30-35	.002	.340

Drill Hole No.		Au	Ag
200	0-10	.002	.320
	10-20	.003	.405
201	0-10	.003	.444
	10-20	.002	.427
	20-30	.005	.453
	30-40	Tr	.210
	40-45	.002	.409
202	0-10	.002	.01
	10-20	.002	.01
	20-30	.002	.06
	30-40	.002	.00
	40-50	.00	.02
	50-60	.026	.00
	60-70	.024	.00
203	0-10	.004	.00
	10-20	.004	.00
	20-30	.002	.00
	30-40	.010	.02
204	0-10	.00	.00
	10-20	.00	.02
205	0-10	.008	.011
	10-20	.006	.11
	20-30	.002	.02
	30-40	.004	.04
	40-50	.004	.02
206	0-10	.002	.390
	10-20	.001	.225
	20-30	Tr	.432
	30-40	.001	.326
	40-50	.010	.407
207	0-10	Tr	.273
	10-20	.005	.510
208	0-10	Tr	.400
	10-20	.001	.430
209	0-10	Tr	.387
	10-20	.001	.426
	20-30	.001	.345
	30-40	.002	.423
	40-50	.002	.375
	50-60	.002	.405
210	0-10	.010	.338
	10-20	.003	.431
	20-30	.015	.920
	30-40	.010	.440
	40-50	.015	.920
	50-60	.002	.342

Drill Hole No.		Au	Ag
211	0-10'	.005	.500
	10-20	.015	.560
	20-30	.013	.510
214	0-10	.010	.470
	10-20	.005	.380
	20-30	.010	.400
	30-40	.030	.765
	40-50	.001	.220
	50-60	Tr	.310
	60-70	Tr	.188
215	0-10	.002	.270
	10-20	.005	.300
	20-30	.002	.263
	30-35	.001	.370
216	0-10	.002	.340
	10-20	.001	.300
	20-30	Tr	.255
	30-40	Tr	.281
	40-45	Tr	.174
217	0-10	.002	.290
	10-20	.005	.351
	20-30	.007	.367
	30-35	.003	.317
218	0-10	.005	.500
	10-15	.003	.630
219	0-10	.00	.340
	10-20	.001	.490
	20-30	.010	.630
	30-40	.005	.510
220	0-10	.001	.330
	10-20	.003	.650
	20-30	.002	.560
	30-40	Tr	.394
221	0-10	.002	.800
	10-15	.00	.490
222	0-10	.007	.371
	10-20	.004	.291
223	0-10	.015	.272
	10-20	.002	.322
	20-30	.006	.400
224	0-10	.002	.260
	10-20	.005	.310
	20-30	.008	.762
	30-40	.005	.443
	40-50	.002	.416

Drill Hole No.		Au	Ag
225	0-10	.001	.270
	10-15	.002	.340
226	0-10	Tr	.170
	10-15	.002	.340
227	0-10	.005	.440
	10-20	.002	.442
	20-30	.00	.385
	30-40	.003	.821
	40-50	.001	.542
	50-55	.002	.416
228	0-10	.001	.492
	10-20	.00	.460
	20-30	.002	.626
	30-40	.00	.516
	40-45	.003	.480
229	0-10	.00	.460
	10-20	.00	.460
	20-30	010	.550
230	0-10	.00	.480
	10-20	.00	.510
	20-30	.00	.360
231	0-10	.00	.236
	10-20	.001	.296
	20-30	.138	.490
	30-35	Tr	.190
	(vacuum drilled)		
	35-40	Tr	.140
	(vacuum drilled)		
232	0-10	.00	.511
	10-20	.00	.463
	20-30	.00	.434
	30-35	.001	.396
233	0-10	.001	.270
	10-20	.004	.303
	20-30	.005	.520
	30-40	.005	.520
	40-50	.010	.500
234	0-10	.001	.282
	10-15	Tr	.240
235	0-10	.001	.196
	10-20	.003	.319
	20-30	.00	.314
	30-40	.001	.469

Drill Hole No.		Au	Ag
236	0-10'	.005	.449
	10-20	.00	.351
237	0-10	.006	.310
	10-20	.001	.298
238	0-10	.002	.470
	10-20	.005	.470
	20-28	.006	.340
239	0-10	.004	.320
	10-20	.003	.330
240	0-10	.015	.670
	10-15	.005	.550
242	0-10	.010	.070
	10-20	.005	.040
244	0-10	Tr	.160
	10-20	Tr	.180
	20-30	Tr	.130
	30-40	Tr	.120
245	0-10	.004	.400
	10-20	.005	.610
	20-25	.005	.520
246	0-10	.007	.390
	10-20	.005	.530
247	0-10	.001	.360
	10-20	.002	.255
248	0-10	Tr	.360
	10-20	.001	.362
249	0-10	.002	.322
	10-20	Tr	.282
250	0-10	Tr	.140
	10-15	Tr	.082
251	0-10	.003	.205
	10-20	.002	.226
	20-30	.001	.230
	30-40	Tr	.180
	40-50	.004	.182
252	0-10	Tr	.160
	10-20	Tr	.152
253	0-10	.005	.176
	10-20	Tr	.262
	20-30	.001	.220
	30-35	.002	.240

Drill Hole No.		Au	Ag
254	0-10	.010	.049
	10-20	.010	.140
255	0-10	Tr	.060
	10-20	.002	.064
	20-30	Tr	.030
	30-40	Tr	.030
	40-50	.371	.008
256	0-10	Tr	.065
	10-20	Tr	.020
	20-25	Tr	.063
257	0-10	.002	.085
	10-20	.002	.092
	20-30	.004	.120
	30-40	Tr	.100
258	0-10	.001	.064
	10-20	Tr	.065
	20-30	.001	.040
259	0-10	.001	.036
	10-20	Tr	.030
	20-25	.002	.031
260	0-10	.004	.103
	10-20	.002	.020
	20-25	.005	.113
261	0-10	.005	.400
	10-20	.001	.410
	20-25	Tr	.436
262	0-10	.002	.400
	10-15	.002	.360
263	0-10	.002	.233
	10-20	.001	.360
	20-30	.005	.340
264	0-10	.002	.343
	10-20	.001	.286
	20-30	.002	.310
265	0-10	Tr	.290
	10-20	.002	.373
266	0-10	.002	.323
	10-20	.003	.550
267	0-10	Tr	.346
	10-20	.002	.220
	20-30	.002	.100
	30-40	.005	.223

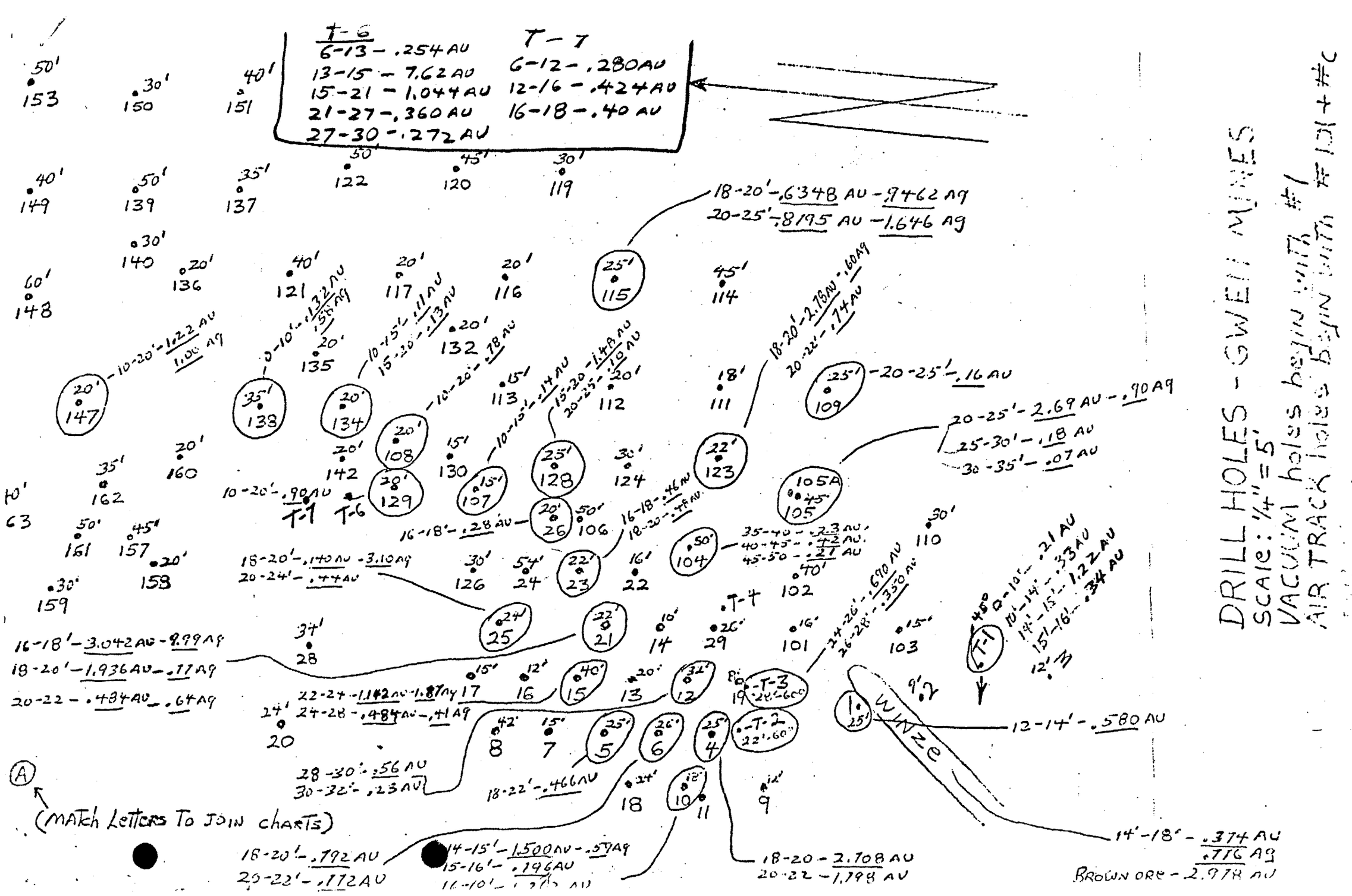
Drill
Hole No.

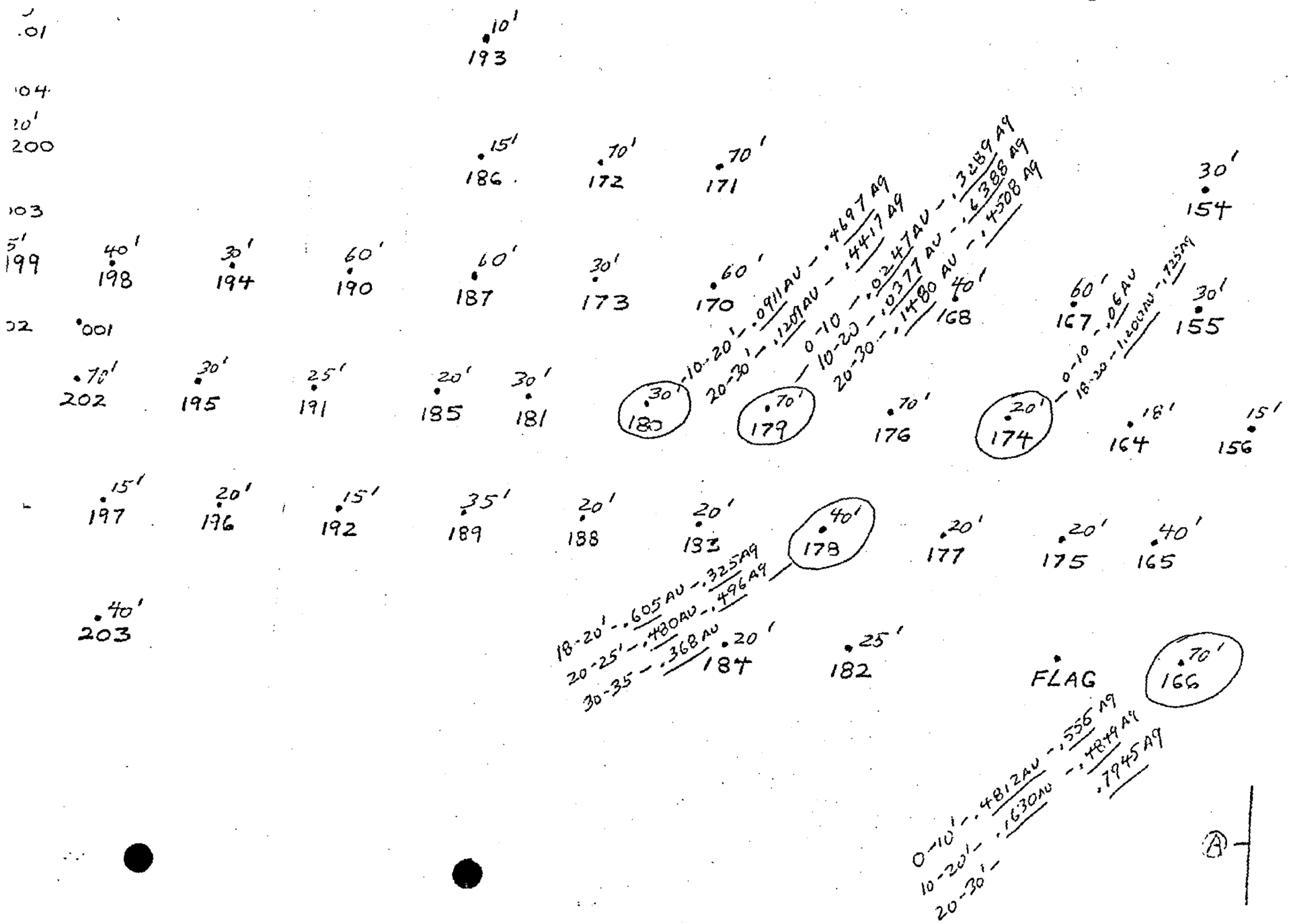
		Au	Ag
268	0-10	.002	.363
	10-15	.001	.443
269	0-10	Tr	.203
	10-20	Tr	.100
	20-25	Tr	.150
270	0-10	.001	.170
	10-20	Tr	.100
271	0-10	.003	.294
	10-20	.010	.348
	20-25	.002	.246
272	0-10	.001	.304
	10-20	Tr	.594
	20-30	.001	.280
	30-40	.002	.250
273	0-10	.001	.245
	10-20	Tr	.211
274	0-10	Tr	Tr
	10-20	.002	.330
275	0-10	.001	.206
	10-20	Tr	.315
	20-25	.002	.223
276	0-10	.001	.260
	10-20	.003	.349
	20-30	.001	.205
	30-40	.001	.170
277	0-10	.002	.263
	10-20	.001	.350
278	0-10	.005	.320
	10-20	.001	.213
279	0-10	Tr	.355
	10-20	.003	.305
280	0-10	.001	.346
	10-20	Tr	.205
	20-30	.001	.310
	30-35	Tr	.358

Gwen hole – No. #905

0 – 5	.165 gold
5 – 10	.050
10 – 15	.060
15 – 20	.230
20 – 25	.145
25 – 30	.020
30 – 35	.125
35 – 40	TR
40 – 45	.185
45 – 50	TR
50 – 55	TR
55 – 60	TR
60 – 65	.060
65 – 70	.095
70 – 75	.052
75 – 80	.043
80 – 85	TR
85 – 90	.050
90 – 95	.020
95 – 100	TR
100 – 105	.034
105 – 110	.180

0 – 25' –	.128 AU	Average
0 – 35' –	.113 AU	" "
0 – 75' –	.108 AU	" "
0 – 110 –	.071 AU	" "


DRILL HOLES - GWELI MINES
SCALE: 1/4" = 5'
VACUUM holes begin with #1
AIR TRACK holes begin with #101
T-6
6-13 - .254 AU
13-15 - 7.62 AU
15-21 - 1.044 AU
21-27 - .360 AU
27-30 - .272 AU
T-7
6-12 - .280 AU
12-16 - .424 AU
16-18 - .40 AU
18-20' - .6348 AU - .9462 Ag
20-25' - .8195 AU - 1.646 Ag
18-20' - 2.78 AU - .60 Ag
20-22' - .74 AU
20-25' - .16 AU
20-25' - 2.69 AU - .90 Ag
25-30' - .18 AU
30-35' - .07 AU
10-20' - 1.22 AU
1.00 Ag
10-20' - .90 AU
10-15' - .11 AU
15-20' - .13 AU
10-20' - .78 AU
10-15' - .14 AU
15-20' - 1.48 AU
20-25' - .10 AU
16-18' - .46 AU
18-20' - .74 AU
16-18' - .28 AU
35-40 - .23 AU
40-45 - .42 AU
45-50 - .27 AU
18-20' - .140 AU - 3.10 Ag
20-24' - .44 AU
16-18' - 3.042 AU - 8.99 Ag
18-20' - 1.936 AU - .77 Ag
20-22 - .484 AU - .64 Ag
22-24 - 1.142 AU - 1.87 Ag
24-28 - .484 AU - .41 Ag
24-26' - .690 AU
26-28' - .350 AU
10-14' - .21 AU
14-15' - .33 AU
15-16' - 1.22 AU
12' - .34 AU
12-14' - .580 AU
28-30' - .56 AU
30-32' - .23 AU
18-22' - .466 AU
14-15' - 1.500 AU - .57 Ag
15-16' - .196 AU
16-18' - 1.270 AU
18-20' - .792 AU
20-22' - .772 AU
18-20 - 2.708 AU
20-22 - 1.798 AU
14'-18' - .374 AU
.776 Ag
BROWN ORE - 2.978 AU
WINZE
T-1
T-2
T-3
T-4
(A)
(MATCH LETTERS TO JOIN CHARTS)


.01
10'
193
104
20'
200
15'
186
70'
172
70'
171
103
30'
154
199
40'
198
30'
194
60'
190
60'
187
30'
173
60'
170
10-20' - .0911 AU - .4697 AG
20-30' - .1201 AU - .4417 AG
0-10 - .0247 AU - .3289 AG
10-20 - .0377 AU - .6388 AG
20-30 - .1480 AU - .4508 AG
40'
168
60'
167
.06 AU
0-10
18-20 - 1.2001 AU - .7259 AG
30'
155
202
70'
195
30'
191
25'
185
20'
181
30'
180
70'
179
70'
176
20'
174
18'
164
15'
156
197
15'
196
20'
192
15'
189
35'
188
20'
183
20'
178
40'
177
20'
175
20'
165
40'
203
18-20' - .605 AU - .325 AG
20-25' - .480 AU - .496 AG
30-35 - .368 AU
20'
184
25'
182
FLAG
70'
166
0-10' - .4812 AU - .556 AG
10-20' - .1630 AU - .7849 AG
20-30' - .7945 AG
A

267 255 251 252

40-50'-.371 AU

15' 268 | 25' 256 | 20' 242

25' 269 | 30' 258 | 40' 257 | 40' 244

20' 270 | 25' 260 | 25' 259 | 15' 250 | 45' 245

25' 271 | 30' 263 | 25' 261 | 20' 246

40' 272 | 30' 264 | 15' 262 | 20' 247

20' 273 | 20' 266 | 20' 265 | 20' 248

20' 249

20' 236

40' 235 | 35' 232 | 45' 229

20'-30'-.138 AU-.490 AU

20' 237 | 40' 231 | 55' 227 | 40' 220 | 15' 218 | 60' 210

28' 238 | 30' 230 | 30' 229 | 15' 221 | 40' 219 | 30' 211

20' 239 | 50' 233 | 20' 225 | 50' 224 | 30' 223 | 35' 215 | 70' 214

15' 240 | 15' 234 | 15' 226 | 20' 222 | 35' 217 | 45' 216

0012

0011

50' 206

20' 207

60' 209 | 50' 205

20' 208

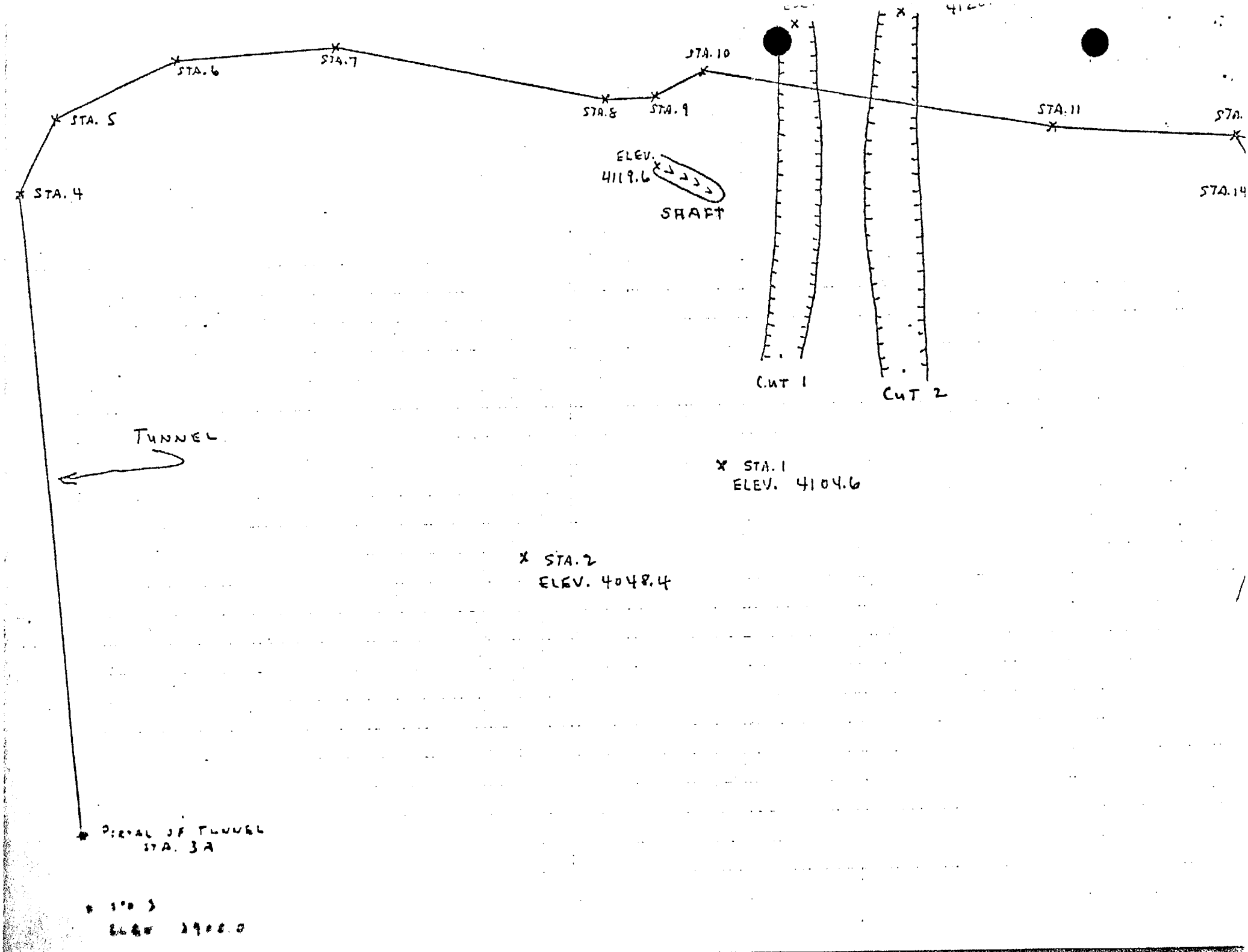
A Lot of .4-.6 silver on This page

(d)

(B)

	280	277
	~~281~~	278
	~~282~~	279
~~285~~	~~283~~	276
~~286~~	~~284~~	275
~~288~~	~~287~~	274

ⓓ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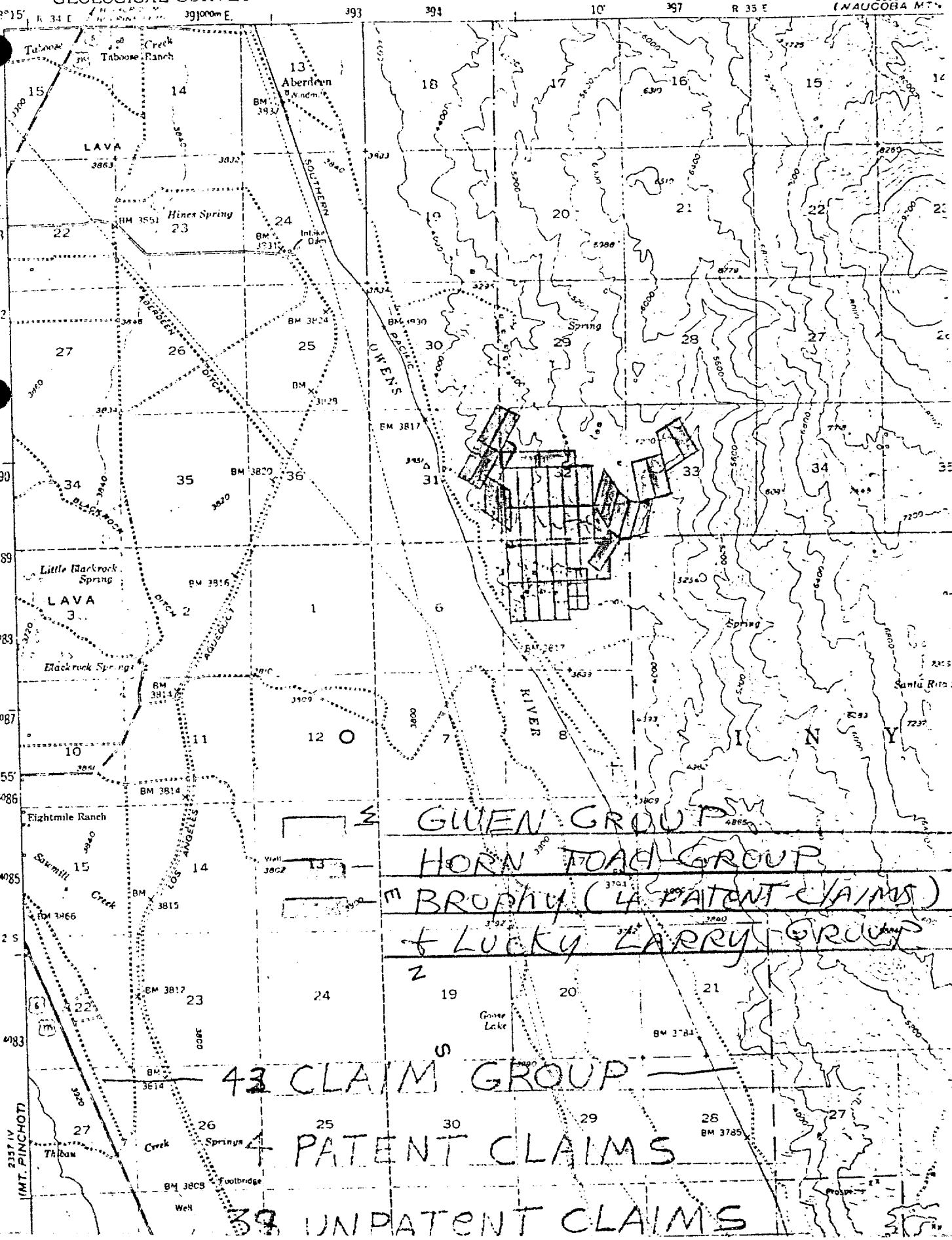
STA. 5
STA. 6
STA. 7
STA. 8
STA. 9
STA. 10
STA. 11
STA. 14
ELEV. 4119.6
SHAFT
CUT 1
CUT 2
TUNNEL
STA. 1
ELEV. 4104.6
STA. 2
ELEV. 4048.4
PIVOTAL OF TUNNEL
STA. 3A

Charlie Pierce

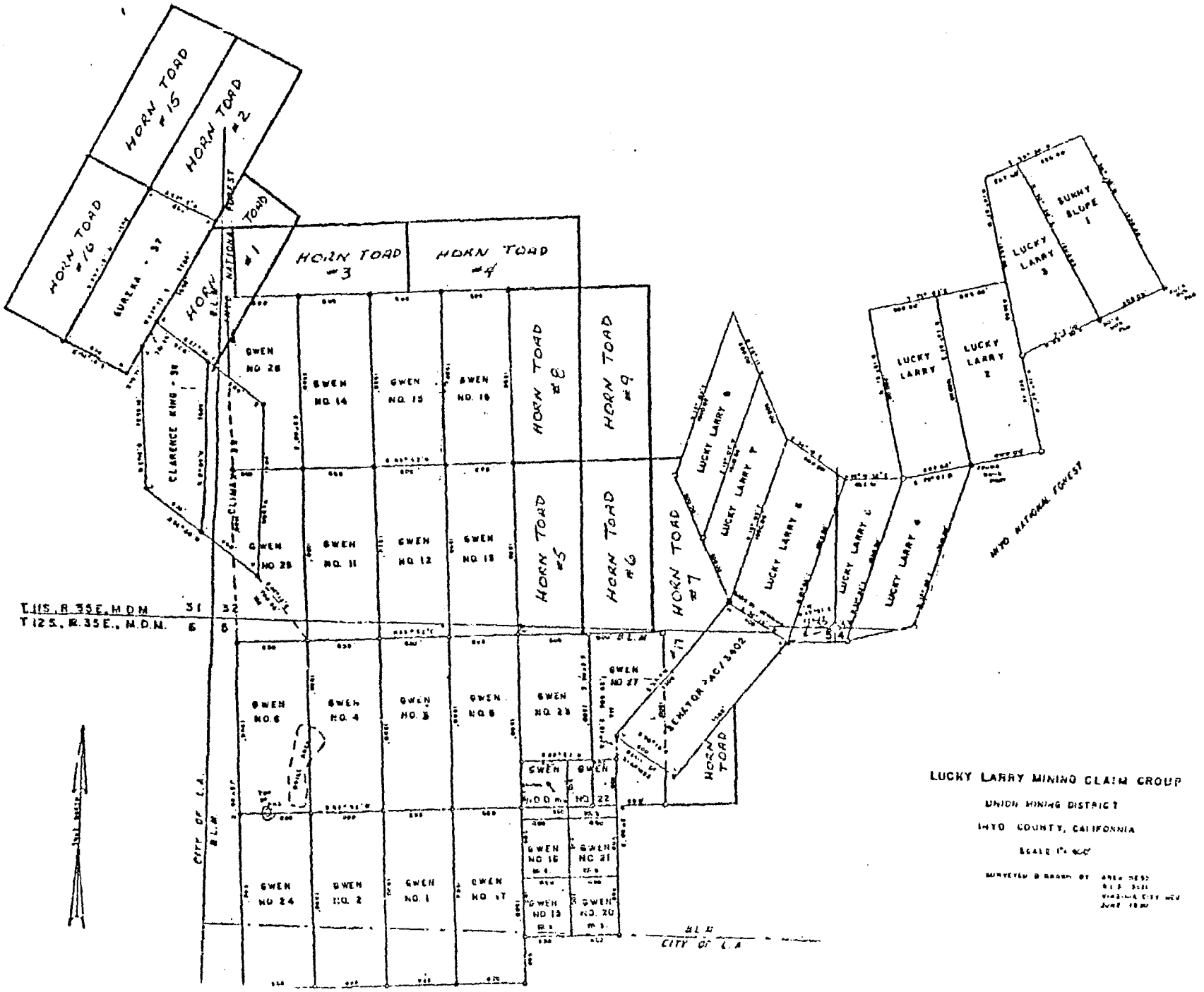
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIF
DEPARTMENT OF WATER



GWEN CLAIMS

Name	Locater	Original Location			CAMC No.
		book	page	date (recorded)	
en #0 (millsite)	Gwen and Charlie Pierce	118	276	2-14-75	6296
en #1	Gwen Pierce	117	791	1-2-75	6297
Relocation	Gwen and Charlie Pierce	131	275	7-22-81	93969
en #2	Gwen Pierce	117	792	1-2-75	6298
Relocation	Gwen and Charlie Pierce	131	276	7-22-81	93970
en #3	Gwen Pierce	117	793	1-2-75	6299
Relocation	Gwen and Charlie Pierce	131	277	7-22-81	93971
en #4	Gwen Pierce	117	794	1-2-75	6300
Relocation	Gwen and Charlie Pierce	131	278	7-22-81	93972
en #5	Gwen Pierce	118	48	Jan 75	6301
en #6	Gwen Pierce	118	49	Jan 75	6302
en #7,8,9,10 are abandoned placer claims.					
en #11	Charlie Pierce	126	942	1-14-80	60731
en #12	Charlie Pierce	126	943	1-14-80	60732
en #13	Charlie Pierce	126	944	1-14-80	60733
en #14	Charlie Pierce	126	945	1-14-80	60734
en #15	Charlie Pierce	126	946	1-14-80	60735
en #16	Charlie Pierce	126	947	1-14-80	60736
en #17	Charlie Pierce	126	948	1-14-80	60737
en #18 (millsite)	Gwen and Charlie Pierce	126	935	1-14-80	60738
en #19 (millsite)	Gwen and Charlie Pierce	126	936	1-14-80	60739
en #20 (millsite)	Gwen and Charlie Pierce	126	937	1-14-80	60740
en #21 (millsite)	Gwen and Charlie Pierce	126	938	1-14-80	60741
en #22 (millsite)	Gwen and Charlie Pierce	126	939	1-14-80	60742
en #23	Gwen and Charlie Pierce	126	940	1-14-80	60744
en #24	Charlie Pierce	126	941	1-14-80	60743
en #25	Charlie Pierce	128	22	8-4-80	71245
en #26	Charlie Pierce	128	23	8-4-80	71246
en #27	Charlie Pierce	128	24	8-4-80	71247



LUCKY LARRY MINING CLAIM GROUP

UNION MINING DISTRICT

INYO COUNTY, CALIFORNIA

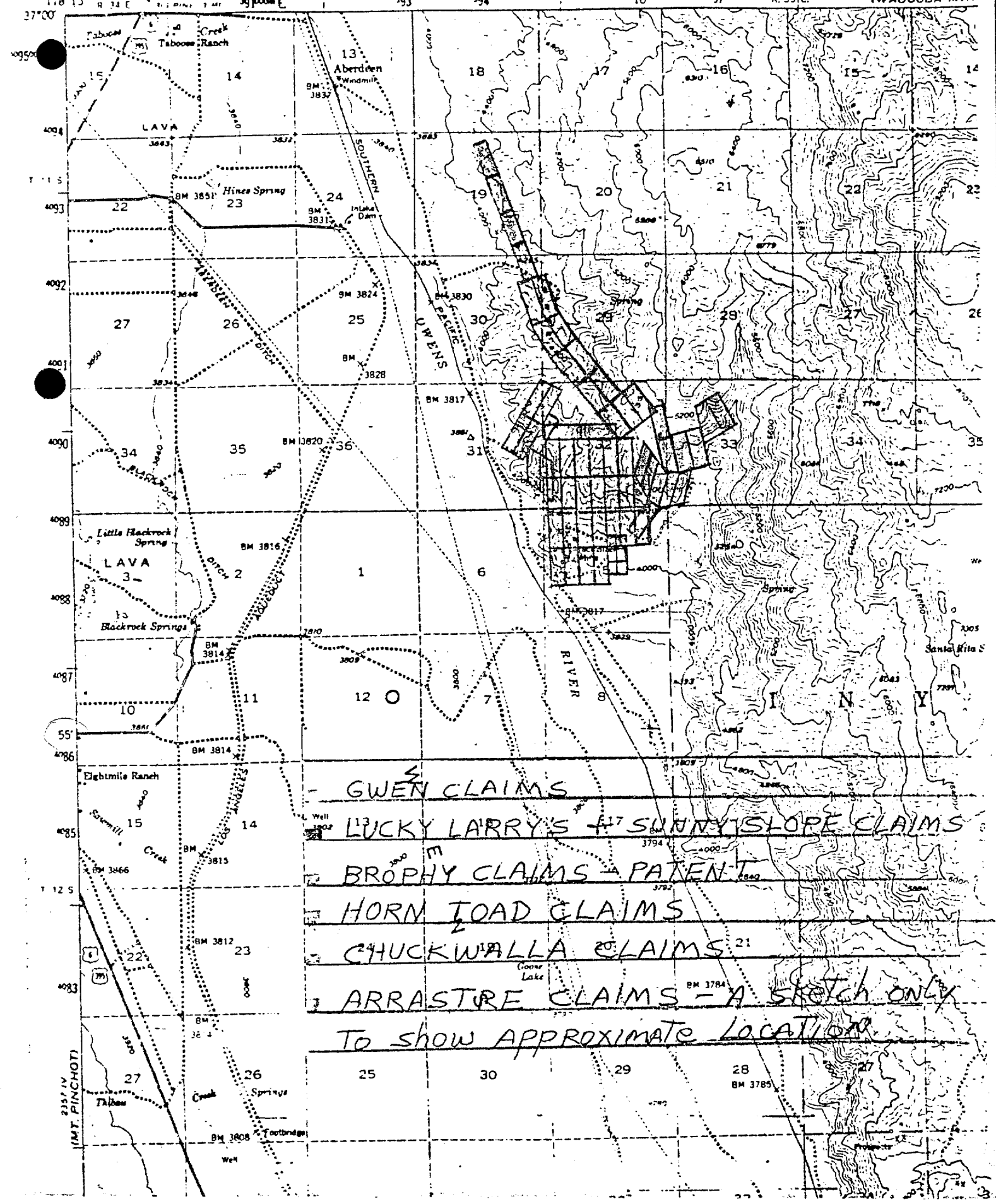
SCALE 1" = 600'

SURVEYED & DRAWN BY [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CHARLIE PIERCE

STATE OF CALIFO
DEPARTMENT OF WATER



~~JHC~~ ER File

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☒ Visited Mine Area

Section I General Indexing

① Name(s) of Property or Area: Cardinal Mine (AMENDED E.R.S)					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Mt. Goddard 15'	⑤ File or Core No.: Inyo Co.	
⑥ Latitude: 37°13'30"	⑦ Longitude: 118°36'5"	⑧ AMS Sheet: Mariposa	Township: 8S	Range: 31E	Section: 29	⑨ Examined by: H.G. Kreis	⑩ Date: June 1985
						⑪ Office: SWED - Tucson	⑫ Field Days

Section II Sources of Information

Date Typed 8/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
ASARCO Files				

J.H.C.

OCT 10 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☐ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ Envir. Problem

⑮
- ☒ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐ Closed to Mineral Entry
- ☐ Geologic Concept
- ☐ Geochem Anomoly
- ☐ Geophy Anomoly

⑯ Production

Commodity	Tons	Grade
Gold(1915-1922)	26,000	0.44 opt Au

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade
Gold	<20,000	0.5 opt Au

⑱ Num. Drill Holes ____ Approx Total Footage ____

⑲ Excavations: Former Underground Workings

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Native Gold Minor:

㉕ Host Rocks-Major: Quartzite inclusion in granite Minor: Basaltic dikes

㉖ Age of Host Rocks: Older than Jurassic-Cretaceous

㉗ Nature of Exposures: Generally good along steep mountainside.

㉘ Alteration: Some silicification. Wollastonite and garnet contact metamorphism.

㉙ Total Extent: Mineralization >2000'horiz.>2500'vert.

㉚ Structure: Vein has N50°W,70°NE attitude that parallels the attitude of the quartzite bedding.

㉛ Ore Occurrence: Gold occurs with po, asp, py, cpy sl, and <1 opt Ag. Ore (0.5 opt Au) is 10' thick with no definite walls. Ore shoots 100' long.

㉜ Age of Mineralization: probably Jurassic-Cretaceous

㉝ Conclusions & Recommendations: This property is part of an environmentally, very sensitive area and a very popular recreation area. A highway into the area is not shown on the 1948 topographic map. Because of the environmental problem, the open pit and/or underground gold potential was not evaluated and need not be evaluated.

The land situation was researched by J.R. Stringham (10/8/85) and found to be closed to mineral location by an act of Congress.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

JHC-ER Rec'd to File 11-7

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☒ Visited Mine Area

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Cardinal Mine	USA	California
	④ USGS Quad. Mt. Goddard 15'	⑤ File or Gore No. Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
37°13'30"	118°36'5"	Mariposa	8S	31E	29	H.G. Kreis	June 1985
						⑪ Office SWED - Tucson	⑫ Field Days

Section II Sources of Information

Date Typed 8/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
ASARCO Files				

J. H. C.

SEP 30 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☐ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ Envir. Problem

⑮
- ☒ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
Gold (1915-1922)	26,000	0.44 opt Au

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade
Gold	<20,000	0.5 opt Au

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations Former Underground Workings

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Native Gold Minor:

㉕ Host Rocks-Major: Quartzite inclusion in granite Minor: Basaltic dikes

㉖ Age of Host Rocks: Older than Jurassic-Cretaceous

㉗ Nature of Exposures: Generally good along steep mountainside.

㉘ Alteration: Some silicification. Wollastonite and garnet contact metamorphism.

㉙ Total Extent: Mineralization >2000'horiz.>2500'vert.

㉚ Structure: Vein has N50°W,70°NE attitude that parallels the attitude of the quartzite bedding.

㉛ Ore Occurrence: Gold occurs with po, asp, py, cpy sl, and <1 opt Ag. Ore (0.5 opt Au) is 10' thick with no definite walls. Ore shoots 100' long.

㉜ Age of Mineralization: probably Jurassic-Cretaceous

㉝ Conclusions & Recommendations: This property is part of an environmentally, very sensitive area and a very popular recreation area. A highway into the area is not shown on the 1948 topographic map. Because of the environmental problem, the open pit and/or underground gold potential was not evaluated and need not be evaluated.

X ?

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK 5193

? with Tungsten, study limited to geologic, geophysical, and geochem. data, since interest in the property, because of the environmental problem, current reserves, and potential reserves are small.

Duplicate

~~JHC~~ - ER File

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☒ Visited Mine Area

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province	④ USGS Quad.	⑤ File or Gore No.
Cardinal Mine	USA	California	Mt. Goddard 15'	Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
37°13'30"	118°36'5"	Mariposa	8S	31E	29	H.G. Kreis	June 1985
						⑪ Office: SWED - Tucson	⑫ Field Days

Section II Sources of Information

Date Typed 8/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
ASARCO Files				

J.H.C.

SEP 30 1985

Section III Appraisal

⑭ Recommendations

- ☐ Action Now
- ☐ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ Envir. Problem

⑮

- ☒ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
Gold(1915-1922)	26,000	0.44 opt Au

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade
Gold	<20,000	0.5 opt Au

⑱ Num. Drill Holes ____ Approx Total Footage ____

⑲ Excavations Former Underground Workings

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Native Gold Minor:

㉕ Host Rocks-Major: Quartzite inclusion in granite Minor: Basaltic dikes

㉖ Age of Host Rocks: Older than Jurassic-Cretaceous

㉗ Nature of Exposures: Generally good along steep mountainside.

㉘ Alteration: Some silicification. Wollastonite and garnet contact metamorphism.

㉙ Total Extent: Mineralization >2000'horiz.>2500'vert.

㉚ Structure: Vein has N50°W,70°NE attitude that parallels the attitude of the quartzite bedding.

㉛ Ore Occurrence: Gold occurs with po, asp, py, cpy sl, and <1 opt Ag. Ore (0.5 opt Au) is 10' thick with no definite walls. Ore shoots 100' long.

㉜ Age of Mineralization: probably Jurassic-Cretaceous

㉝ Conclusions & Recommendations: This property is part of an environmentally, very sensitive area and a very popular recreation area. A highway into the area is not shown on the 1948 topographic map. Because of the environmental problem, the open pit and/or underground gold potential was not evaluated and need not be evaluated.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

JHC - ER. FILE

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Yaney Mine	USA	California
	④ USGS Quad. Bishop 15'	⑤ File or Gore No. Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
37°19'15"	118°27'30"	Mariposa	7S	32E	SW/4 22	H.G.Kreis	6/19/85
						⑪ Office SWED - Tucson	⑫ Field Days <1

Section II Sources of Information

Date Typed 8/13/85

⑬ References

Author	Date	Title	Publications	Vol. No.
T.L. Chapman	3/24/32	Emily Enid Mine	Asarco files (Yaney)	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
	<50,000 Est.	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes None

Approx Total Footage _____

⑲ Excavations Two adits and glory hole

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Gold, Silver

㉔ Ore Minerals-Major Native Gold Minor

㉕ Host Rocks-Major Lms-siltstone inclusion in granite Minor

㉖ Age of Host Rocks Older than Jurassic-Cretaceous

㉗ Nature of Exposures Excellent exposures of sediments in workings and road cuts; otherwise soil covered. Good exposures of granite.

㉘ Alteration Strong sericite-clay-alunite in apparent siltstone.

㉙ Total Extent 75' x 100'

㉚ Structure 300' long (E-W) by ≥100' (up-down slope) inclusion of sediments in granite have steeply dipping bedding (N-S'ly strike).

㉛ Ore Occurrence Gold occurs in pyrite (oxidized) - sericite-clay. Seven Asarco underground samples (3-24-32) averaged 0.02 opt Au and 0.3 opt Ag.

㉜ Age of Mineralization Probably Jurassic-Cretaceous

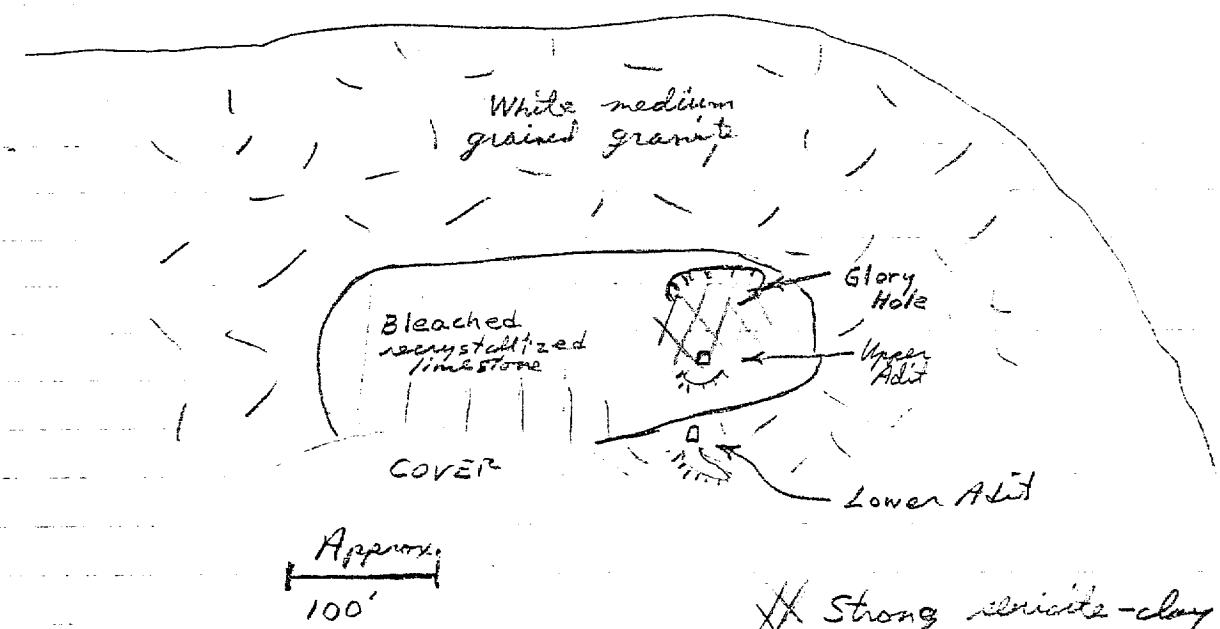
㉝ Conclusions & Recommendations Property examined to determine extent and geology of reported (3-24-32) 0.02 opt Au and 0.3 opt Ag mineralization. Property has no potential for large tonnage or grades of interest. Property is of no further interest.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

YANEY MINE
SEC 22 T7S, R32E

SKETCH OF NORTH SLOPE
LOOKING SOUTH



Strong sericite-clay alteration of siltstone. Local alunite & gypsum. Strong FeOx (after pyrite) in glory hole.

ASARCO's 3-24-1932 samples were taken underground in the lower tunnel. 7 samples, 10' in length averaged, 0.02 oz. Au/ton with a range of 0.01 to 0.03 oz Au. Silver averaged 0.3 oz./ton.

J.H.C. - ER File

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [X] Submital

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Casa Diablo Mine	USA	California
	④ USGS Quad. Casa Diablo Mt. 15	⑤ File or Gore No. Inyo Co.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
37°35'	118°33'	Mariposa	4S	31E	21, 27	H.G.Kreis	6/30/85
						⑪ Office SWUS-Tucson	⑫ Field Days 1

Section II Sources of Information

Date Typed 8/12/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Submitted by Ken Jacobs of Big Pine, Calif. and Denver, Colorado				

J.H.C.

SEP 30 1985

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
	<10,000 Est.	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes None

Approx Total Footage

⑲ Excavations Adit, few vertical shafts

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

wallrock samples?

㉓ Commodity or Contained Metals Gold, Silver

㉔ Ore Minerals-Major Native gold Minor

㉕ Host Rocks-Major Granite Minor

㉖ Age of Host Rocks Jurassic-Cretaceous

㉗ Nature of Exposures Fair; bold granite outcrops are common and are separated by widespread gruss and soil.

㉘ Alteration None

㉙ Total Extent Widely scattered veins from SE/4 Sec. 21 to center Sec. 34

㉚ Structure N70°W to N60°E striking veins with 60-70° north dip

㉛ Ore Occurrence Widely spaced, parallel quartz-pyrite veins up to 1' thick. All veins >100' apart, more like 500' apart, up to 1500' apart. Stoped up to 5' in width.

㉜ Age of Mineralization Jurassic-Cretaceous (?)

㉝ Conclusions & Recommendations Shipping records (<500 tons) show 1 opt Au and 2 opt Ag from Casa Diablo Mine, the only productive vein. Pyrite common near surface. Veins too small and probably too low grade to carry a mineable width. No alteration or mineralization in wall rocks. Veins far too widely spaced to provide any type of bulk tonnage. Veins have no economic potential.

no sample results supporting this

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

JHC-ER

J. H. C.

JUL 22 1985

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

Section I General Indexing

① Name(s) of Property or Area: Browns Ranch Fault, Lava Mt. (Himco-Tenneco) Claims (60)						② County: San Bernardino	③ State or Province: CA
						④ USGS Quad: Klinker Mt. Cuddleback Lake	⑤ File or Gore No.
⑥ Latitude: 34°24'N	⑦ Longitude: 117°30'W	⑧ AMS Sheet: Trona	Township: 29S	Range: 42E	Section: 16,17 20,30	⑨ Examined by: F.R.Koutz (GJS-FAM) 6/82	⑩ Date: 5/13/85
						⑪ Office: Tucson	⑫ Field Days: ½+1

Section II Sources of Information

Date Typed 7/1/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Stathis,G.J.	Aug.7, 1982	Greater Randsburg Region Evaluation	(2p. + maps)	
Smith, G.I.	1964	Geol.&Volc.Petrol.-Lava Mts.	USGS Prof.Paper 457, 98p.	
Hulin,C.D.	1925	Geol.& Ore Deposits Randsburg Quad:	CA State Mine Bur.Bul. 95, 152p.	

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [?] Ownership Problem
- [?] Access Problem
- [X] Margin WSA? Stake

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

Hot Spr. re-
- [ ] lated Au-Ag mineraliz.
- [X] Geologic Concept
- [X] Geochem Anomaly
- [?] Geophy Anomaly
- [X] Recent Himco Drilling (?)

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves
- [ ] Measured
- [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 6 ?
Approx Total Footage 1095'

⑲ Excavations Sev. shallow pits Adits & cuts

⑳ [X] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached

Section IV Geologic Data

11 Samples(FRK) mean: 0.17ppm Au, 9ppm Ag, 315ppm As, 1.2ppm Hg

㉓ Commodity or Contained Metals: Ag(to 41ppm),Au(to.33ppm), Anom: As,Sb,Hg,Ba,Mn,V,Sr

㉔ Ore Minerals-Major: Au(Ag) Argentite,goeth-hem-jar af.py Minor: Prob Ag sulfosalts-and oxides

㉕ Host Rocks-Major: Lithic Lapilli tuft-tuft Bx & congl. Minor: Andesite flows & breccias

㉖ Age of Host Rocks: Pliocene(?) Almond Mt. Volcanics - <10 m.y.b.p.

㉗ Nature of Exposures: 70% Q-Tal cover, 20% pediment subcrop., Fairly open desert, nil veg. Considerable talus on higher hills to N&W.Mineraliz. in areas of low relief, best

㉘ Alteration: Strong f.g.silicification-chalcedonic quartz, later greyish qtz unlts., local strong argillic-CO_3 (alunite?) ㉙ Total Extent: 3-4000' strike of FW silica Vn,

㉚ Structure: N40-70°E Fissure veins-fault zone 500-1500' wide. 40-70° Dip SE to silica veins. Volc-seals dip 10-35°. Silicified-opalite zones max 20-30' wide but covered

㉛ Ore Occurrence: Potential for stratiform and vein Au-Ag mineralization in permeable sediments, volcanics and breccias cut by structures of Browns Ranch Fault zone. More anomalous metal values where BRF ㉜ Age of Mineralization: Late Tertiary (Pliocene?)-

㉝ Conclusions & Recommendations: Top or near top of siliceous hot spring system with venting along Browns Ranch Fault. Steam well 2 miles SW contains 96°C water @ 416', local geothermal exploration. Local exploration for Hg. 1x3 mile propylitically altered area 1-2 miles w./7-8 miles ENE of Randsburg and Kelly major Au-Ag districts in older rocks. 57 Lava Mountain claims of HIMCO (Tenneco) apparently abandoned 4/1/85 according to 5/8/85 BLM microfiche. After confirming this we should restake this ground to protect future exploration. Association

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

ASARCO EXPLORATION RECORD
(Continued)

Browns Ranch Fault, Lava Mt. (Himco-Tenneco) Claims

27. exposed in arroyos.

28. wk-mcl. chl-clay-py ±alunite ("propylite") to west.

29. bleaching, clay up to 1500' wide.

30. by pediment gravels in part.

31. changes strike from NE to ENE.

32. recent Geothermal

33. Placers of J.A. Briscoe and others over western claims. "Roadless" closed area on NW side.

ASARCO EXPLORATION RECORD

J. H. C. JHC

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area: Mohawk Pass					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Mohawk Mts. NW 7½'	⑤ File or Gore No.	
⑥ Latitude: 32°44'N	⑦ Longitude: 113°45'W	⑧ AMS Sheet: Ajo	Township: 8S	Range: 15W	Section: 11, 12, 13	⑨ Examined by: J.D. Sell	⑩ Date: 5/23/85
						⑪ Office: Tucson	⑫ Field Days: partial

Section II Sources of Information

Date Typed 6/24/85

⑬ References

Author	Date	Title	Publications	Vol. No.
S.B.Keith, 1978, Index of Mining Properties in Yuma Co., AZ; AZ B.G&MT, Bulletin 192, pages 59-60, 125, 136 & 163.				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Follow-up

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations: Several prospects

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached TAJ-428

Section IV Geologic Data

㉓ Commodity or Contained Metals: Trace Copper

㉔ Ore Minerals-Major: Oxide Zone X Minor:

㉕ Host Rocks-Major: Detachment Zone Minor:

㉖ Age of Host Rocks: Mesozoic metamorphics, Jurassic? granite

㉗ Nature of Exposures: Footwall metamorphics and hanging wall granite exposed in hills; detachment zone mostly in saddles in wash drainages, i.e. poor exposures.

㉘ Alteration: Minor epidote at SY - sample area.

㉙ Total Extent: Probably several miles strike length.

㉚ Structure: Detachment zone tens to 100's(?) feet thick, dipping 20°-30° to NE, striking northwesterly.

㉛ Ore Occurrence: Strong Fe oxide, 5-10 feet thick at SY - area. Barite, fluorite reported at Renner Mine in Sec. 11.

㉜ Age of Mineralization: Late Mesozoic? - or Tertiary?

㉝ Conclusions & Recommendations: Typical setting of detachment zone type with metamorphic complex on footwall and brecciated granite on hanging wall. Other prospects to northwest (not looked at). Total zone should be reviewed. Shaft in Sec. 11 (Renner mine) apparently shipped 18 carloads of barite in 1929-30.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

ASARCO

Southwestern Exploration Division

June 4, 1985

To: W. L. Kurtz

From: J. D. Sell

Review Trip
Detachment Zones
May 20-29, 1985

During this time period I visited a number of areas with suspected detachment zones capable of having clues to an ore deposit. Some zones were initially seen by viewing from the highway, others were submittals, and some were from the Winter Program.

1. Mohawk Pass, Yuma County, AZ

On Interstate 8 (Tucson-Yuma) approximately 12 miles west of Dateland interchange, the east side of the Mohawk Mountains shows a core complex main mass with light colored granite slabs attached as spurs extending easterly.

A good exposure of the detachment surface can be seen by taking the Mohawk Valley off-ramp west (Ave. 52E) onto old US 80 and approximately ½ mile to Milepost 57.2. At this roadcut area the hanging wall brecciated granite can be viewed as well as the footwall sequence. Back to the southeast toward the railroad tracks, a line of pits and trenches probe the detachment zone itself. One pit, near a saddle is 4' x 6' x 5' deep and exposes the best red-black iron oxide. A competitor aluminum tag #SY-19-62 is nailed in the wall. I collected three samples from top to bottom on the north wall.

SY-19-62-1	1½ feet of sheared iron-stained granitoid.
SY-19-62-2	1 foot of fractured rhyolite sill subparallel to zone.
SY-19-62-3	3 foot sheared, heavy (+10%) FeOx red-black limonite and quartz seams with minor chloritic material.

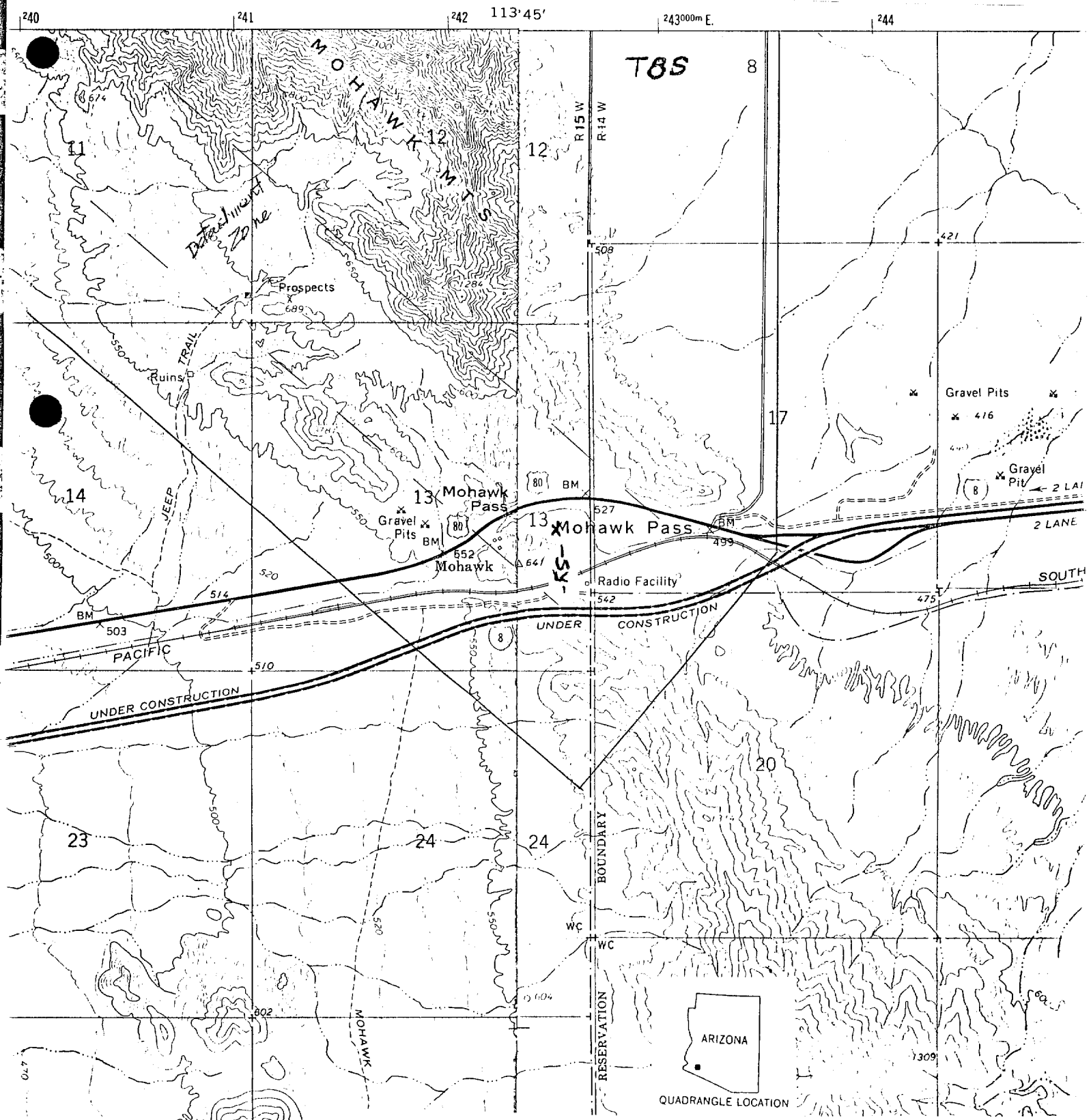
The zone trends northwesterly and dips 20°-30° northeasterly. The footwall is various sheared subparallel to the detachment zone with epidote and some iron-staining, mapped as Mesozoic schist. The detachment zone itself is variable in thickness, but may be up to 50 feet in thickness in some areas. The hanging wall is brecciated, Mesozoic granite, and forms a ¼-½ mile topographic valley to the northeast prior to rising up into the hills.

As several miles of space are available northwesterly and southeasterly from the pass before the farm lands or Gunnery Range is reached, the zone should be further reconnaissanced, sampled, and mapped as an environment to host a detachment type deposit.

MOHAWK QUADRANGLE
ARIZONA—YUMA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 MOHAWK 15' QUADRANGLE

MOHAWK MTS. NW, ARIZ.
N3237.5—W11337.5/7.5

1965



CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

JRS
6/85

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 428
June 13, 1985
SY-19-62 (1-3)
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

ASARCO Incorporated
JUN 14 1985
SW Exploration

Analysis of 3 Rock Chip Samples

ITEM	SAMPLE NUMBER	Au (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Mo (ppm)
1	SY-19-62-1	<.1	.10	2.	4.	6.
2	SY-19-62-2	<.1	.10	2.	<2.	2.
3	SY-19-62-3	<.1	.05	4.	2.	8.

ITEM	SAMPLE NUMBER	Bi (ppm)	Cd (ppm)	Tl (ppm)	Cu (ppm)	Te (ppm)
1	SY-19-62-1	<1.	<.1	<1.	85.	<1.
2	SY-19-62-2	<1.	<.1	<1.	40.	<1.
3	SY-19-62-3	<1.	<.1	<1.	175.	<1.

cc: Asarco Incorporated
Attn.: Ms. Mary Kavanagh
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED 6-13-85 ARIZONA U.S.A.

William L. Lehmbeck
Manager

JHC → ER File

J. H. C.

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Poteet Claims, Aguila District, Yavapai Co., AZ	U.S.	Arizona
	④ USGS Quad.	⑤ File or Gore No.

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
34°04'30"N	113°12'30"	Prescott	9N	9W	32 33	AEG	4/11/85
						⑪ Office: Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 6/10/85

⑬ References

Author	Date	Title	Publications	Vol. No.
S.J.Reynolds	1982	Multiple Deform.	Mes.-Cen.	
			Tect.Evol.	
			p.137-142	

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮

- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes -- Approx Total Footage --

⑲ Excavations --

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached #649.1.30m #650.1.20m

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

~~Au Assays~~

㉓ Commodity or Contained Metals: None

㉔ Ore Minerals-Major: Unknown Minor: Magnetite

㉕ Host Rocks-Major: Gneiss Minor:

㉖ Age of Host Rocks: Pre-Tertiary

㉗ Nature of Exposures: Contact to Tertiary Volcanics lies 100m to South. ?

Contact dips South.

㉘ Alteration: Local Chloritization

㉙ Total Extent

㉚ Structure: Foliation N110E/30S

㉛ Ore Occurrence: None

㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Claims "MARS," Formerly "MAX" (1974) show quartz veins of irregular form and size. Wallrock = Gneiss (Foliated Q.M. & Amphibolite). Former exploration consists of several dozer cuts. No mineral potential in evidence.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

Geochemical Analysis Report

10.VI.85

TO: Mr. A.E. Giesecke
ASARCO, Inc.
P.O. Box 5747
Tucson, AZ 85703 tel:602/792-3010

Lot Identity: ASB-50607A

Report Date: 06/07/85

Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Z
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	p
649 POTEET (.3m)	1	<.045	6.190	<.001	8.560	<.457	5.070	<.915	<.915	<.915	1.
650 " (.2m)	2	<.041	2.381	<.001	17.26	<.418	3.998	<.836	<.836	<.836	2.
651	3	.0737	20.94	.0068	58.99	<.492	18.90	3.971	1.034	<.984	8.
652	4	<.049	33.09	.0014	268.2	.8980	21.04	10.50	1.603	<.996	10
653	5	<.048	2.357	.0014	34.34	<.482	4.202	7.185	<.965	<.965	58
654	6	<.048	3.468	.0015	19.72	.7740	4.782	3.896	1.740	1.499	13
655	7	<.044	2.779	<.001	4.344	.7867	1.840	1.680	<.899	2.256	10
656	8	<.047	2.521	<.001	22.59	.5703	2.344	5.287	<.957	<.957	26
657	9	.1509	13.44	.0017	40.06	430.	7.493	6.987	14.06	<1.00	10
658	10	<.042	1.868	<.001	7.517	8.870	2.985	9.088	1.008	<.850	63
659	11	.0594	2.865	.0016	45.05	2.586	2.817	3.985	1.617	<.957	67
660	12	<.050	831.4	.0012	6.558	.7892	3.303	5.262	9.236	1.716	35
661	13	.1605	18.93	.2177	5983	2.690	.6135	3.015	2.209	<.957	13
662	14	<.045	5.724	.0047	120.2	.6680	1.057	7.379	<.912	<.912	39
663	15	<.047	13.72	.0013	10.57	1.010	2.199	3.888	5.197	<.954	56
664	16	.1184	<.972	.0193	22.96	<.486	2.339	161.9	<.972	<.972	15
665	17	.8831	<.984	.4824	98.64	<.492	2.065	917.7	<.984	<.984	47
666	18	<.049	14.33	.0038	4.708	2.469	6.860	14.75	1.512	<.980	47
667	19	1.478	3.012	.0338	56.28	.8832	15.58	233.9	1.564	<.833	38
668	20	.6728	4.135	.0097	24.23	.4736	9.714	11.38	1.572	<.827	75

Red: Indicates data above high standard and may not be quantitatively accurate.

This report has been reviewed and approved by:

Date: 6/7/85

William B. Henderson, Lab Director/Chemist

GSI 2741 Toledo St ,Suite 211, Torrance, CA 90503 Phone: 213/320-3680

ASARCO

Southwestern Exploration Division

7. III. 85

March 7, 1985

To: A. E. Giesecke

From: J. D. Sell

E. L. Poteet Claims
Sec. 32-33, T9N, R9W
Aguila District, AZ YAVAPAI Co.

Mr. Poteet, Farmington, NM, Phone: 505/325-7685, has reported a 3-8 foot wide reddish quartz vein running NW-SE and carrying up to 1/4 opt gold. He believes the wallrock is altered on each side, stained reddish, for some 100 feet.

His posts are some 600 feet N of the SW corner of Section 33. (Section 32 is a state section.)

Access should be on the topo sheets and up a narrow sandy wash in the final stages.

I suggest you stop off on your way north next week and take a look and sample what you need.

James D. Sell

JDS:mek

James D. Sell

Au Cu
Ba
Mn

Field visit 11. III. 85
Spc. 649 + 650

~~J.H.C.~~ → ER File

ASARCO EXPLORATION RECORD

J. H. C.

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area: Osborne Wash, La Paz Co.					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Black Creek 15'	⑤ File or Gore No.	
⑥ Latitude: 34°09" N	⑦ Longitude: 114°11' W	⑧ AMS Sheet: Needles	Township: 9N, 10N	Range: 18W, 19W	Section: 6, 36	⑨ Examined by: GIE A.E. Giesecke	⑩ Date: 4/19/85
						⑪ Office: Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 6/3/85

⑬ References

Author	Date	Title	Publications	Vol. No.

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
None		

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade
None		

⑱ Num. Drill Holes 1

Approx Total Footage 0

⑲ Excavations: Adit (caved), Trench 60m

⑳ [ ] Spectro. Analysis Attached ㉑ [ ] Assays Attached ㉒ [X] Geochem Results Attached 3

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au Ag

㉔ Ore Minerals-Major: _____ Minor: _____

㉕ Host Rocks-Major: Phyllitic Gneiss Minor: Limestone

㉖ Age of Host Rocks: Paleozoic

㉗ Nature of Exposures: Adit and Cliff ?

㉘ Alteration

㉙ Total Extent

㉚ Structure: Phyllite locally intensely tectonized.

㉛ Ore Occurrence: No formal veins. Breccia zones of irregular nature.

㉜ Age of Mineralization: Tertiary

㉝ Conclusions & Recommendations

Texaco - Project 1984. Geochem & Mag. Survey. At least 1 Drill Hole.

No Dozer Work. Hundreds of samples abandoned in field. No work 1985.

Texaco shut down after minor exploration work.

Mineral Potential appears negligible.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

Osborne Wash (Texaco prospect)

Spl. No.	width	Au ppm	Ag ppm	Cu ppm
672	1.60 m	0.019	0.2	25
673	1.90	0.015	- 0.2	10
674	3.70	0.022	- 0.2	10

Skyline , May 85

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

f 22. V. 85

REPORT OF ANALYSIS

JOB NO. TAJ 414
May 10, 1985
669-674

ASARCO INCORPORATED
Attn: Mr. A.E. Giesecke
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 6 Rock Chip Samples

ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)	Cu (ppm)	
1	669	.007	<.2	25.	
2	670	.009	3.0	10.	
3	671	.020	<.2	20.	
4	672	.019	.2	25.	Osborn
5	673	.015	<.2	10.	Wash
6	674	.022	<.2	10.	

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

CROSS ROADS QUAD 7½"
10 Km E of PARKER

AEG — fi 16, IV.
Stop by & look at this area.
Call me with your thoughts
JBS

Project: W. Arizona

Commodity: Au, Ag

Prospects: Osborne Wash

Target Size: 2+ mmt

Location: La Paz Co., AZ, T9N R18W Sec. 6; T10N R19W, Sec. 36

Target Grade: 0.10 oz/T Au

Startup Date: January, 1983

Land Description: 32 Lode Mining Claims totaling 640 acres and 5 State of Arizona mining leases totaling 772 acres.

Gross Acres: 1,412

Net Acres (Texaco): 1,412

Business Terms: 100% Texaco

Co-Venturers: None

Operator: Texaco

Geologic Basis: Metamorphosed shale is locally faulted, sheared, brecciated and silicified. Gold values range up to 1.0 oz/ton in shears within the silicified, faulted and brecciated zones. In addition to the high grade shear zones there is disseminated gold mineralization within zones of silica replaced shale.

1984 Program:: Geochemical outcrop sampling, and magnotometer survey completed.

Proposed Program - 1985: No 1985 program is proposed.

Program Summary

	Number of Holes	Total Footage
Prior to 1985	0	0
1985 Proposed	No 1985 program is proposed.	

---

aer2604
ibmird

JHC → ERFile

ASARCO EXPLORATION RECORD

J. H. C.

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] _____

JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area: Jewell Ann (= Three Musketeers)					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad: La Paz Co.	⑤ File or Gore No.	
⑥ Latitude: 33°50' N	⑦ Longitude: 113°47' W	⑧ AMS Sheet: Phoenix	Township: 6N	Range: 15W	Section: 23,24 25,26	⑨ Examined by: AEG	⑩ Date: 4/23/85
						⑪ Office: Tucson	⑫ Field Days: 1

Section II Sources of Information

Date Typed 5/28/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Ciancanelli, E.V.	1964/65	Struct.Geol.Granite Wash Mts.	M.Sc. U of A	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
$CaWo_4$	X	X

⑰ Reserves

[ ] Measured Commodity	[ ] Estimated Tons	Grade

⑱ Num. Drill Holes +7

Approx Total Footage _____

⑲ Excavations: Adits, inc.shafts

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached #670

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: WO_3

㉔ Ore Minerals-Major: Scheelite Q. Minor: Dol. Sid

㉕ Host Rocks-Major: Limestone & Phyllite Minor: Andesite

㉖ Age of Host Rocks: Paleozoic

㉗ Nature of Exposures: Surface & Underground ?

㉘ Alteration: ----

㉙ Total Extent: ----

㉚ Structure: Vein & Shearzone N70E Dip 30 S (Flat Fault)

㉛ Ore Occurrence: 1-2m Wide Stopes in Q-vein.
50m Long. 50m Down-Dip

㉜ Age of Mineralization: Tertiary

㉝ Conclusions & Recommendations

Tungsten Mine with reported gold. -(0.24 opt Au, 0.40 opt Ag)

The ore is non-sulphidic. No Lim. Gossan. occurrence of gold unlikely except spot values:

#670	0.009	ppm Au	1.0m Vein
	3.0	ppm Ag	
	10.0	ppm Cu	

No follow-up recommended.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5195

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

f 22. V. 85

REPORT OF ANALYSIS

JOB NO. TAJ 414
May 10, 1985
669-674
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. A.E. Giesecke
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 6 Rock Chip Samples

ITEM	SAMPLE NO.	Au (ppm)	Ag (ppm)	Cu (ppm)
1	669	.007	<.2	25.
2	670	.009	3.0	10.
3	671	.020	<.2	20.
4	672	.019	.2	25.
5	673	.015	<.2	10.
6	674	.022	<.2	10.

cc: Asarco Incorporated
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703
Attn.: Mr. James D. Sell
Ms. Mary Kavanagh

JHC

J. H. C. ERFile

ASARCO EXPLORATION RECORD

☒ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☐ _____

JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area: CHUCKWALLA MINING COMPANY. RIVERSIDE CO.					② Country: USA	③ State or Province: CALIFORNIA	
					④ USGS Quad.: CHUCKWALLA SPRINGS 15'	⑤ File or Gore No.	
⑥ Latitude: ~~115°12.5'~~ 33°22.5'	⑦ Longitude: ~~33°22.5'~~ 115°12.5'	⑧ AMS Sheet: SALTON SEA	Township: T8S	Range: 17E	Section: 16,17,20 21	⑨ Examined by: MA MILLER	⑩ Date: APRIL-21-24
					⑪ Office: TUSCON	⑫ Field Days: 3	KMS

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
ATTACHED		CHUCKWALLA MINING COMPANY REPORTS		

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☒ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☒ 15

⑮
- ☐ Post Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☒ DREAM BUILDER
- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly
- ☒ COLOR ANOMALY

⑯ Production

Commodity	Tons	Grade

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes 0

Approx Total Footage _____

⑲ Excavations: PIT AREA ~ 3 ACRES IN SIZE

⑳ ☐ Spectro. Analysis Attached ㉑ ☒ Assays Attached ㉒ ☒ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: GOLD

㉔ Ore Minerals-Major: GOLD, SILVER, PGE PLATINUM! Minor: _____

㉕ Host Rocks-Major: VOLCANIC ANDESITES & LATITES Minor: _____

㉖ Age of Host Rocks: TERTIARY

㉗ Nature of Exposures

㉘ Alteration: CELADONITE ASSOCIATED w/ THE VOLCANICS; CALCITE veinlets & OPAL

㉙ Total Extent: VOLCANICS COVER THE S END of THE CHUCKWALLA MTS range.

㉚ Structure: NONE SEEN

㉛ Ore Occurrence: REPORTED TO BE ASSOCIATED w/ VOLCANICS AS "MICRON GOLD"

㉜ Age of Mineralization: TERTIARY?

㉝ Conclusions & Recommendations: A MANS DREAM of A GOLD DEPOSIT. PAN ~~AMALGATION~~ AMALGAMATION TECHNIQUES SHOW .4 opt GOLD. FIRE ASSAYS SHOW NOTHING. RECOMMEND THAT WE VISIT ONCE HE IS IN PRODUCTION TO SEE THE GOLD.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

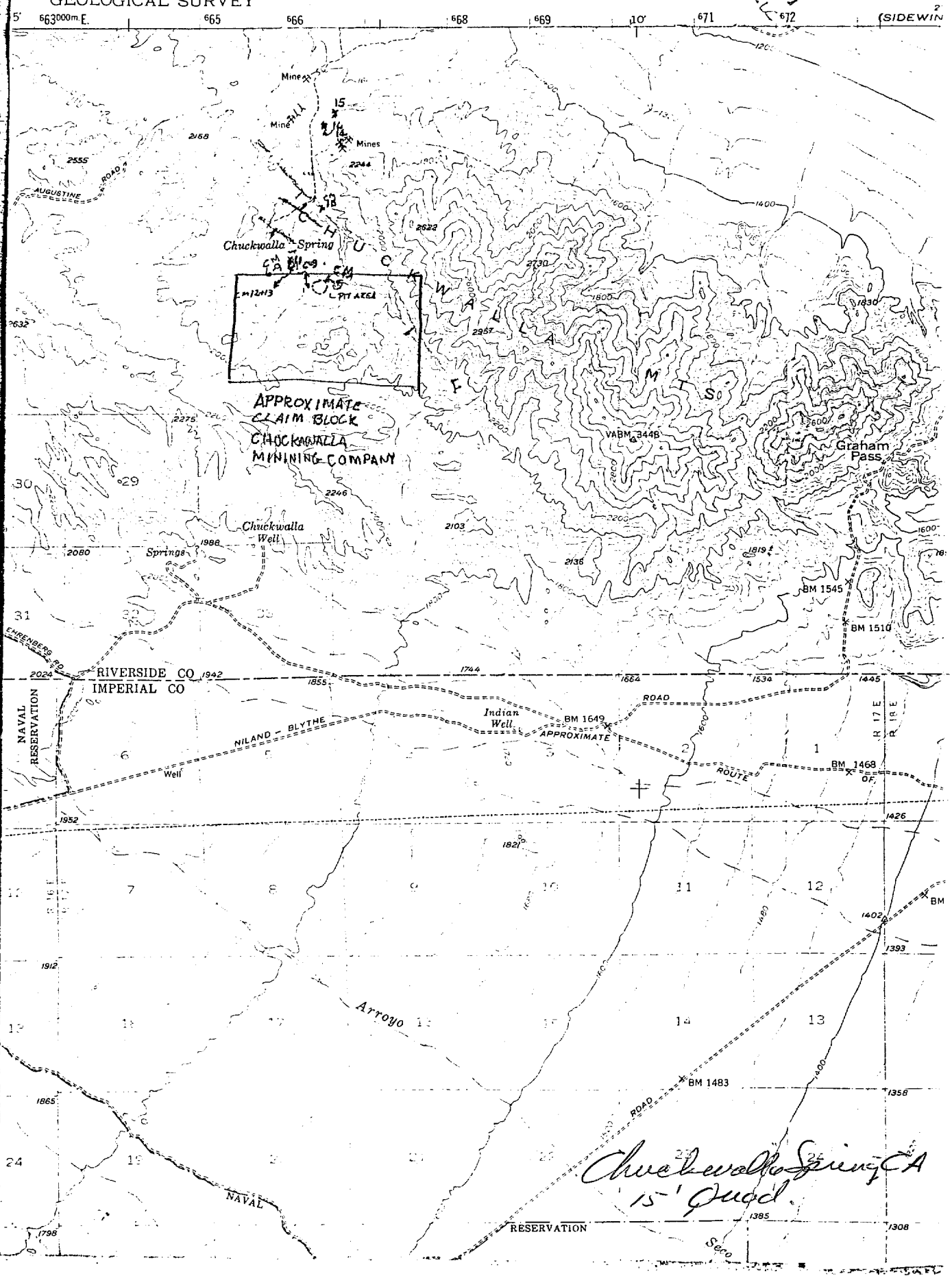
Tom Tuccillo
Rex Oil Company

Chuckwalla
Mining Co

East Side Auto Pk
Avenue Dunn N.Y.
Bill MARTINDALE
Chuckwalla

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF
REPRESEN
DIRECTOR OF



Chuckwalla Spring CA
15' Quad.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 412
May 7, 1985
MOHAVE GOLD
CHR-41/HD-40

ASARCO INCORPORATED
Attn: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 45 Rock Samples

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)
1	CHR-41	.002	<.2
2	CHR-42	.007	<.2
3	CHR-43	.060	.2
4	CHR-44	.017	<.2
5	CHR-45	<.002	<.2
6	CHR-46	.004	<.2
7	CHR-47	.003	<.2
8	CHR-48	<.002	<.2
9	CHR-49	.002	<.2
10	CHR-50	<.002	<.2
11	CHR-51	<.002	<.2
12	CM-1	<.002	<.2
13	CM-2	<.002	<.2
14	CM-3	<.002	<.2
15	CM-4	<.002	<.2
16	CM-5	<.002	<.2
17	CM-6	.005	<.2
18	CM-7	<.002	<.2
19	CM-8	.002	<.2
20	CM-9	<.002	<.2
21	CM-10	.007	<.2
22	CM-11	.009	<.2
23	CM-12	<.002	<.2
24	CM-13	<.002	<.2
25	CM-14	<.002	<.2
26	CM-15	<.002	<.2
27	CM-16	<.002	<.2
28	BM-1	<.002	.2

M.A. Miller
Asarco Exploration Record
Chief Chiricahua Mining Co
April 21-24, 1985

ASARCO Incorporated
MAY 9 1985
SW Exploration

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 412A
May 22, 1985
MOHAVE GOLD
CHR-41/HD-40
PAGE 1 OF 1

ASARCO INCORPORATED
Attn: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 4 Pulp Samples

ITEM	SAMPLE NO.	Te (ppm)
12	CM-1	.005
23	CM-12	.010
24	CM-13	.005
25	CM-14	.005

MAM: Chuckwalla Mining Co. AER Sheet April 21-24, 1985

MAM: Wray Oil Co. Properties May 7, 1985 Report.

cc: Mr. Mark Miller
P.O. Box 306
Salem, Missouri 65580

cc: Asarco Incorporated
Attn: Ms. Mary Kavangh
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED ARIZONA

William L. Lehmbeck
Manager

~~JHC~~ - ER File

ASARCO EXPLORATION RECORD

J. H. C.

JUL 22 1985

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

Section I General Indexing

① Name(s) of Property or Area: Liberty Bell					② Country: USA	③ State or Province: Arizona	
					④ USGS Quad.: Laguna Dam, Ariz-Calif	⑤ File	
⑥ Latitude: 32° 45'	⑦ Longitude: 114° 25'	⑧ AMS Sheet: Salton Sea, El Centro	Township: 7-8S	Range: 21W	Section: many	⑨ Examined by: L. Muttpelgate; H. Kreis	⑩ Date: April 1985
						⑪ Office: Tucson Ariz	⑫ Field Days: 2

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
See property files				

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [ ] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ]
- [X] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Au Placer		$4-$10.00/yd.

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached See File

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au

㉔ Ore Minerals-Major _____ Minor _____

㉕ Host Rocks-Major: Gneiss Minor _____

㉖ Age of Host Rocks: Precambrian

㉗ Nature of Exposures: extension outcrop

㉘ Alteration: sericite-chlorite

㉙ Total Extent _____

㉚ Structure: Low angle faults - monolithic megabreccias

㉛ Ore Occurrence: Placer Au in washes (?) potential for several million yds - previous tests show 8-10.00 per yd. in upper 10' of gravel. (See File)

㉜ Age of Mineralization _____

㉝ Conclusions & Recommendations

Potential for Picacho-Mesquite type Au mineralization associated with low angle faults. Dome area contains some alteration an minor Au mineralization, but repeated sampling by several companies returned only low values - (See File) Area under controll by owner ≈ 10-12,000 acres. mostly by association placer claims.

(For additional space use extra sheets)

MVK-5193

ASARCO EXPLORATION RECORD

(Form Revised 3/8/75 by J.H.C.)

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO J. H. C. ☐

AUG 13 1985 JHC-ER File

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
MODEL MINE + N4S EXTENSIONS?	USA	CAL
	④ Co. or Map Sheet: CHUCKWALLA MTS 15'	⑤ File or Gore No.: Riverside Co.

⑥ Latitude	⑦ Longitude	⑧ Mer.	Twp.	Rng.	Sec.	⑨ Examined by	⑩ Date
30° 30' → 37'	115° 30'-115° 27'					WAM Miller	APRIL 85
						⑪ Office: TUCSON	⑫ Field Days: 5

Section II Sources of Information

⑬ References Author	Date	Title	Publications	Vol. No.
USBM	MARCH 1985	CHUCKWALLA MTS WILDERNESS STUDY AREA		

J. H. C.

AUG 13 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☒ Too Low Grade
- ☒ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☐

⑮
- ☒ Past Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☒ Prospect
- ☐
- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy. Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
?		

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx. Total Footage _____

⑲ Excavations NUMEROUS PITS, TRENCHES SHAFTS & ADITS

⑳ Spectro. Analysis Attached

㉑ Assays Attached

㉒ X Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au, Ag, Cu

㉔ Ore Minerals - Major Au MALACITE Minor

㉕ Host Rocks - Major PE CHUCKWALLA COMPLEX Minor VOLCANICS - TERTIARY - RHYOLITES, ANDES

㉖ Age of Host Rocks PE TERTIARY

㉗ Nature of Exposures PART OF PE CHUCKWALLA COMPLEX WHICH HAS BEEN INTRUDED BY BASIC DIKES, MESOZOIC INTRUSIVES AND GRANITES. 5% outcrop?

㉘ Alteration LOCALIZED TO VEINS - SERICITE, LITTLE CARBONATE, CLAY MINERALS, LOC HM

㉙ Total Extent ±10' FROM VEINS

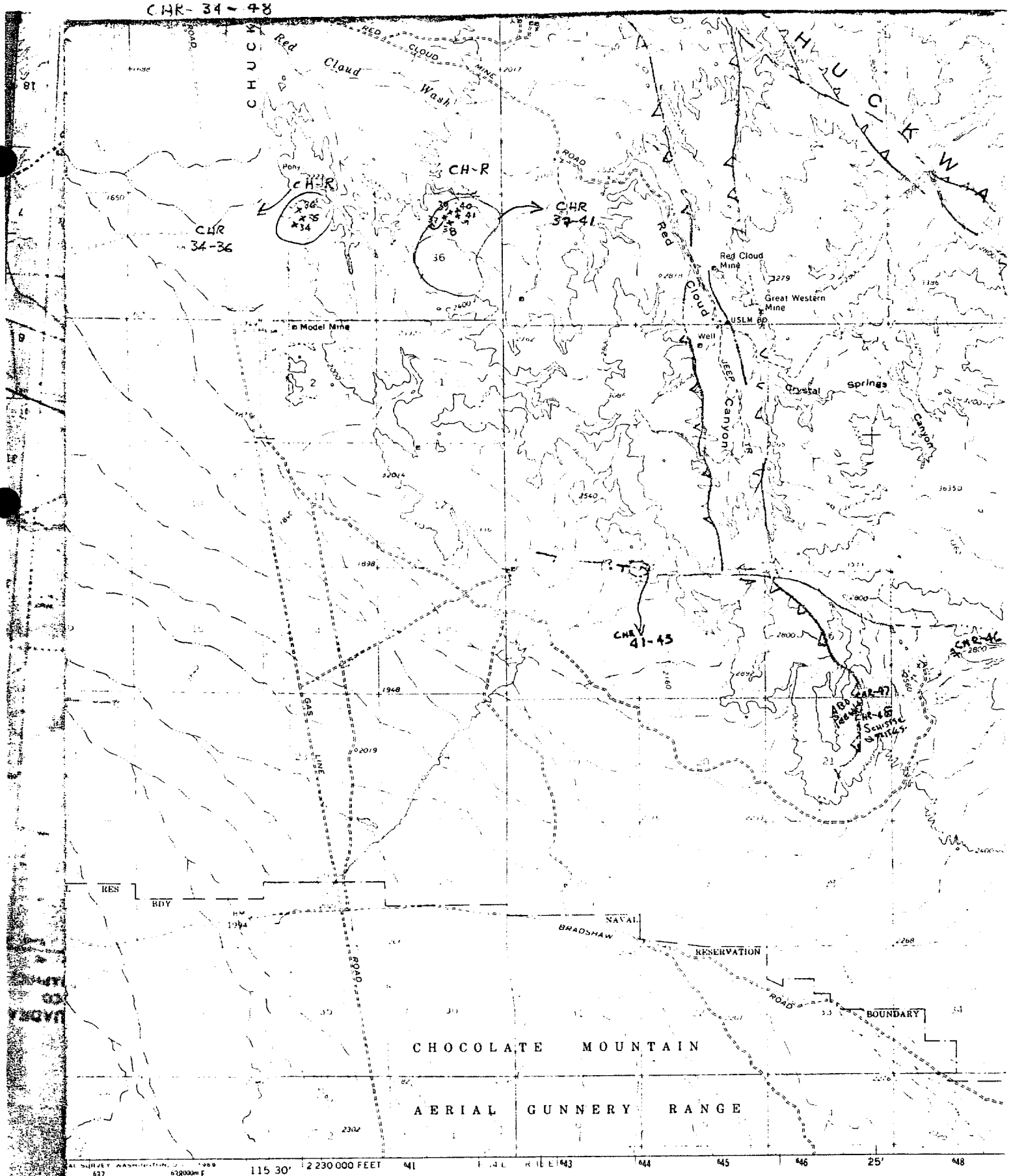
㉚ Structure Qz VEINS & SHEAR ZONES.

㉛ Ore Occurrence ASS w/ Qz VEINS ETC USUALLY IN THE MORE SULFIDE RICH PORTIONS.

㉜ Age of Mineralization ?

㉝ Conclusions and Recommendations TOO SMALL, TOO LOW GRADE → No ACTION. ÷ POSSIBILITIES MAY LIE @ PE VOLCANIC CONTACT BUT NEVER CHECKED IN DETAIL. CHR 99-51 WENT WELL INTO THE VOLCANICS

CHR- 34 - 48



ROAD CLASSIFICATION

Light duty

Unimproved dirt

U S Route

Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography by photogrammetric methods from aerial photographs taken 1956. Field checked 1963

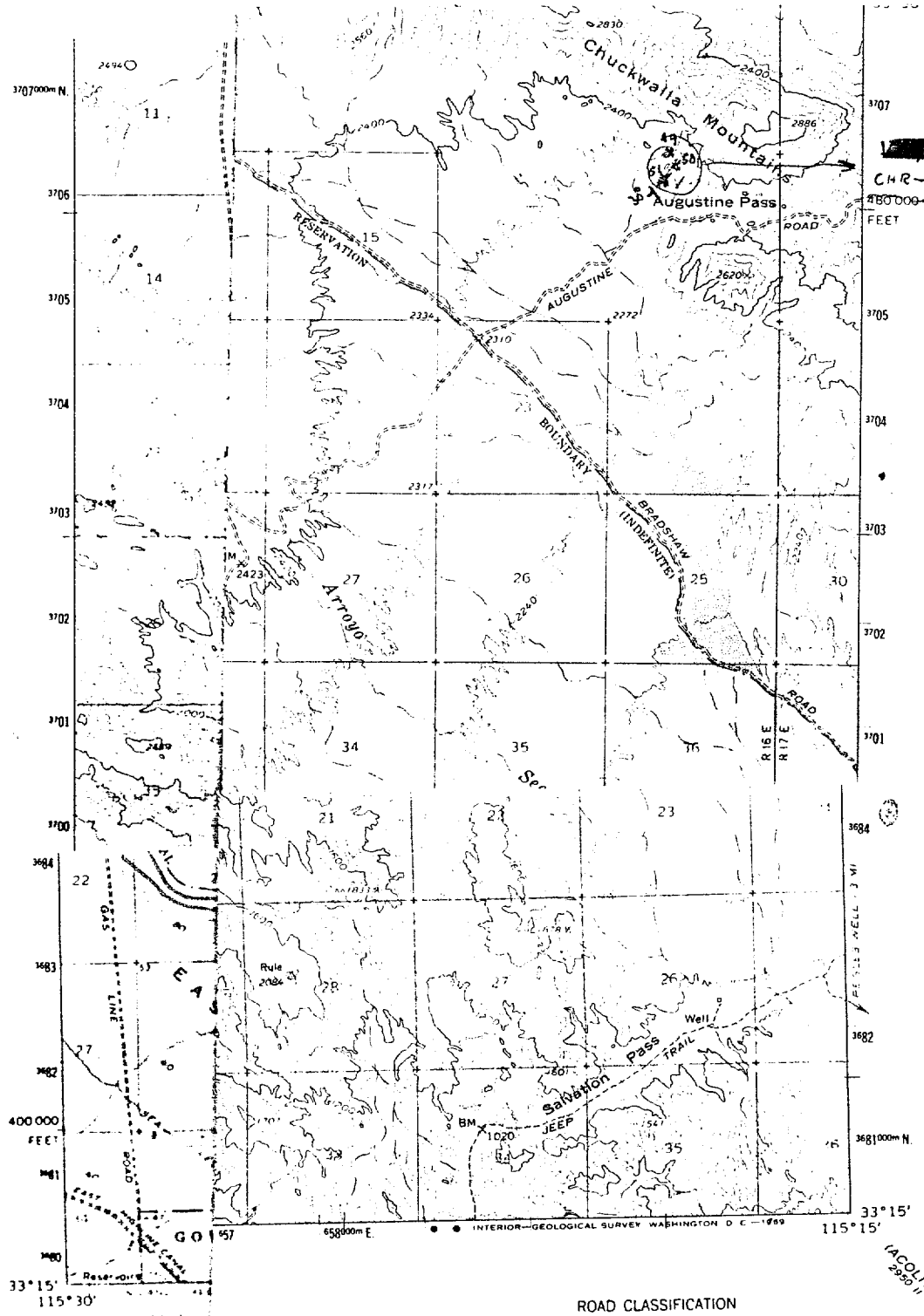
Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zone 6
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

Where omitted, land lines have not been established

UTM GRID AND 1963 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

HAYFIELD, CALIF

CHOCKWALLA MTS 15' SW 1/4 QUAD



[redacted]

CHR-49-51

Mapped, edited, an
Control by USGS, US
SW quarter compiled
dated 1956 revised,
topography by photo
photographs taken 1
Polyconic projection
10,000-foot grid ba
1000-meter Univers
zone 11, shown in b
Where omitted, land

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Light-duty ——— Unimproved dirt - - - - - -

The SW quarter also covered by 7.5 minute, 1:24 000-scale map: Iris Wash, 1956

IRIS PASS, CALIF.

N3315—W11515/15

1963

AMS 2950 IV—SERIES V795

Description of Sample Sites

Model Mine Area + Other Prospects along W. Side of Chuckwalla Mts.

CHR-34: W of Model Mine ~3000' Qz, Greenish Intrusive w/ chlorite & poss some other mafic minerals. Does not appear altered Chip sample represent. ~75' of o.c. (.005, <.04)

CHR-35: F.G equivilant of CHR-34 rocks. May be interbedded w/ CH-34 type (.001, <.05)

CHR-36: A.A. Represents ~300' of Random Chip (.003, <.05)

CHR-37: RAZ (Red Alteration Zone) Similar in appearance to RAZ in Red Cloud Canyon Area; but less obvious Qz. Appears to have numerous shearing directions: Suggestion of Hematite Rims. Represents ~50' of o.c. (.001, <.04)

CHR-38: AA 50' N of #37 (.003, <.04)

CHR-39: A.A. Represents ~100' of chips. Line ⊥ to o.c pattern ~75' N of #38. .001, <.05)

CHR-40: AA but 400' N of 39 100' of chips ⊥ to o.c. (.003, <.05)

CHR-41: Composite Chip Down Hill above schist/Fault contact; Represents 75' of section (V) contains Qz veins (.002, <.2)

CHR42: Same as 41 but Qz veins only (.007, <.2)

CHR43: Schist or Fault Contact 10' Tk: composite chip sample 100' of outcrop. (.060, .2)

CHR44: Bleached Zone or Lithologic Contact @ Base Below CHR-43 ~3' exposed (.017, <.2)

CHR-45: Spotted Granite Limonite Spts Est 5-10% Spts. (<.002, <.2)

CHR-46: CO_3 "veins" ~½" wide in Qz & Granite 50' of exposure (.004, <.2)

CHR-47: Qtzite @ F.W. of Pegmatites Area; Sheared Fgn Qz Veins. (.003, <.2)

R-48: RANDOM CHIP Qz FROM REGMETITES PROJECTED ALONG CONTACT OF RED CLOUD THRUST ZONE (<.002, <.2)

VOLCANICS ALONG AUGISTINE PASS RD IRIS PASS 15' QUAD

CHR-49 LOOKS LIKE RECENT MUDFLOW, CO_3 VEINS & MATRIX (.002, <.2)

CHR-50 AA # 49 BUT 3-400' AWAY (<.002 <.2)

CHR-51 VOLCANICS SHOW MORE HM STAINING; POSS ALTERED-QTZITE UNIT BENEATH VOLCANICS CO_3 VEINING (<.002, <.2)

Geochemical Analysis Report

TO: Mr. Mark Miller
ASARCO
Desert Star Motel, 9090 E. Hobson Way
Blythe, CA. 92225 tel:619/922-0273

Lot Identity: ASE-50529A

Report Date: 05/30/85

	Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Zn
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
AER Sheet Red Cloud Canyon	CHR-19	1	.1228	5.201	.0038	20.27	.5812	2.844	13.85	1.296	<.892	10.7
	CHR-20	2	.0585	2.149	.0018	12.33	<.498	3.736	11.86	1.041	<.996	9.84
	CHR-21	3	<.047	2.741	<.001	6.692	.6082	2.254	9.186	<.957	<.957	4.38
	CHR-22	4	<.050	<1.00	<.001	5.511	.8340	1.662	12.08	1.449	<1.00	1.94
	CHR-23	5	<.048	3.198	.0026	8.096	<.486	1.419	39.68	1.198	<.972	23.4
	CHR-24	6	<.050	1.019	<.001	4.949	<.500	3.190	11.54	<1.00	<1.00	13.1
	CHR-25	7	<.049	<.980	<.001	3.444	.5863	1.551	9.073	<.980	<.980	24.4
	CHR-26	8	<.047	<.957	.0012	5.415	.9832	2.498	6.650	1.658	<.957	16.9
	CHR-27	9	<.049	1.805	<.001	3.668	.6987	2.151	9.407	2.006	<.992	22.6
	CHR-28	10	<.050	<1.00	<.001	7.481	1.224	3.158	3.990	1.763	<1.00	2.30
	CHR-29	11	<.050	<1.00	.0183	3.937	.5538	2.599	12.24	1.407	<1.00	15.6
	CHR-30	12	<.050	2.721	<.001	7.272	.5645	2.341	8.944	<1.00	<1.00	36.1
	CHR-31	13	.5522	5.509	.0540	303.8	.6554	10.70	14.38	9.599	<1.00	25.8
	CHR-32	14	22.52	29.19	29.04	6421	13.21	7.973	2046	3.076	<.996	99.1
	CHR-33	15	.1569	1.113	.1218	102.5	.7906	1.731	33.06	1.388	<1.00	9.59
AER Sheet Mode I Mine	CHR-34	16	<.049	1.670	.0051	16.36	.8899	1.777	4.750	1.815	<.992	9.94
	CHR-35	17	<.050	1.911	.0017	9.953	<.500	.6778	6.462	1.683	<1.00	19.2
	CHR-36	18	<.050	1.129	.0030	14.12	.6694	1.109	5.657	1.456	<1.00	35.1
	CHR-37	19	<.049	10.25	.0010	13.14	.5525	2.424	5.138	2.239	1.697	17.0
	CHR-38	20	<.049	7.431	.0026	13.39	1.300	2.799	12.92	2.501	<.988	19.5
	CHR-39	21	<.050	1.865	.0017	9.658	<.500	1.974	4.825	2.174	<1.00	17.9
	CHR-40	22	<.049	1.317	.0032	7.576	.8769	1.838	6.857	2.358	1.032	18.5

Red: Indicates data above high standard and may not be quantitatively accurate.

This report has been reviewed and approved by:

Date: 5/31/85

William B. Henderson, Lab Director/Chemist
for

GSI, 2741 Toledo St.,Suite 211, Torrance, CA 90503 Phone: 213/320-3680

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 412
May 7, 1985
MOHAVE GOLD
CHR-41/HD-40

ASARCO INCORPORATED
Attn: Mr. James D. Sell
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

Analysis of 45 Rock Samples

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)
1	CHR-41	.002	<.2
2	CHR-42	.007	<.2
3	CHR-43	.060	.2
4	CHR-44	.017	<.2
5	CHR-45	<.002	<.2
6	CHR-46	.004	<.2
7	CHR-47	.003	<.2
8	CHR-48	<.002	<.2
9	CHR-49	.002	<.2
10	CHR-50	<.002	<.2
11	CHR-51	<.002	<.2
12	CM-1	<.002	<.2
13	CM-2	<.002	<.2
14	CM-3	<.002	<.2
15	CM-4	<.002	<.2
16	CM-5	<.002	<.2
17	CM-6	.005	<.2
18	CM-7	<.002	<.2
19	CM-8	.002	<.2
20	CM-9	<.002	<.2
21	CM-10	.007	<.2
22	CM-11	.009	<.2
23	CM-12	<.002	<.2
24	CM-13	<.002	<.2
25	CM-14	<.002	<.2

MA Millers
AER sheet
Mohal Mine

ASARCO Incorporated
MAY 9 1985
SW Exploration

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

~~JHC~~-ER File

J. H. C.

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] ~~JUL 22 1985~~

Section I General Indexing

① Name(s) of Property or Area: Lime Canyon					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Clark Mt. Calif.	⑤ File	
⑥ Latitude: 35° 32'	⑦ Longitude: 115° 38'	⑧ AMS Sheet: Kingman	Township: 17N	Range: 12E	Section: 30	⑨ Examined by: L.M. Appelgate	⑩ Date
						⑪ Office: Tucson, Ariz	⑫ Field Days: 1/2

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Appelgate	1985	Clark-Ivanpah-Shadow Mts Reconn.	ASARCO Files	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached See Files

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major: Chalcopyrite Minor:

㉕ Host Rocks-Major: Dolomite Qtz. Monzonite Minor:

㉖ Age of Host Rocks: Mid Paleozoic

㉗ Nature of Exposures: Surface outcrops. ?

㉘ Alteration: Skarn

㉙ Total Extent

㉚ Structure: Intrusive contact + faults

㉛ Ore Occurrence: Fault zone mineralization along intrusive contact.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Not of interest

(For additional space use extra sheets)

MVK-5193

~~JHC~~ - ER File

J. H. C.

JUL 22 1985

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ]

Section I General Indexing

① Name(s) of Property or Area: Mineral Springs					② Country: U.S.A.	③ State or Province: California	
					④ USGS Quad.: Ivanpah	⑤ File	
⑥ Latitude: 35° 27'	⑦ Longitude: 115° 25'	⑧ AMS Sheet: Kingston	Township: 15N	Range: 14E	Section: 2-3	⑨ Examined by: L.M. Appelgate	⑩ Date: April 1985
						⑪ Office: Tucson Ariz	⑫ Field Days: 4

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Appelgate	1985	Clark-Ivanpah-Shadow Mts. Reconn	ASARCO Files	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [X] Too Low Grade
- [X] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [ ] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [X] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____

Approx Total Footage _____

⑲ Excavations: Adits - Trenches

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached See Files

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Chalcopyrite - Cu - Ag.

㉔ Ore Minerals - Major: Chalcopyrite Minor: _____

㉕ Host Rocks - Major: Gneiss Minor: _____

㉖ Age of Host Rocks: Precambrian

㉗ Nature of Exposures: outcrops - adits - trenches ?

㉘ Alteration: Kaolinite - sericite - minor quartz veinlets

㉙ Total Extent: 1 square mile

㉚ Structure: Hanging wall of ~60° - 60° Fault

㉛ Ore Occurrence: Veinlets in hangingwall (300' x 100' area) scattered groups of veinlets of quartz with chalcopyrite - no mineralization in wallrock.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Not of Interest

(For additional space use extra sheets)

MVK-5193

~~JHC~~-ER File

J. H. C.

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] ~~JUL 22 1985~~

Section I General Indexing

① Name(s) of Property or Area: Copper World mine					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Clark Mt. Calif.	⑤ File	
⑥ Latitude: 35° 31'	⑦ Longitude: 115° 36'	⑧ AMS Sheet: Kingston	Township: 16N	Range: 13E	Section: 5	⑨ Examined by: Am. Appelgate	⑩ Date: March 1985
						⑪ Office: Tucson Ariz.	⑫ Field Days: 3

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Wright, Lauren	1953	Mines + Mineral deposits of San Bernadino Co Calif.	Calif Jour. of Mines and Geology	49
Appelgate, A.M.	1985	Clark-Ivanpah, Shadow Mts Reconn.	ASARCO Files	

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Cu, Pb, Zn, Ag	+ 2000' of workings	?

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations: stripping

⑳ [ ] Spectro. Analysis Attached

㉑ [ ] Assays Attached See Files

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Cu, Pb, Zn, Ag

㉔ Ore Minerals-Major: Oxidized - Minor: _____

㉕ Host Rocks-Major: Dolomite Minor: _____

㉖ Age of Host Rocks: mid Paleozoic

㉗ Nature of Exposures: old workings - surface stripping ?

㉘ Alteration: skarn

㉙ Total Extent: _____

㉚ Structure: skarn at intrusion (quartz monzonite) contact, 400 x 400 x 100 ft.

㉛ Ore Occurrence: sulfide replacement of low angle shears in dolomite 4 to 30 ft thick

㉜ Age of Mineralization: _____

㉝ Conclusions & Recommendations

Presence of stacked ore zone at surface, possibility of additional stacked zones at depth.

(For additional space use extra sheets)

[redacted] MVK-5193

X?

~~JHC~~ - ER File

ASARCO EXPLORATION RECORD

J. H. C.

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area: Mohawk Mine					② Country: USA	③ State or Province: California	
					④ USGS Quad.: Mescal Range	⑤ File	
⑥ Latitude: 35° 29'	⑦ Longitude: 115° 36'	⑧ AMS Sheet: Kingman	Township: 16N	Range: 13E	Section: 7-18	⑨ Examined by: L.M. Appelgate	⑩ Date: March 1985
						⑪ Office: Tucson Ariz	⑫ Field Days: 3

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Wright, Lauren	1953	Mines + Mineral deposits of San Bernadino Co, Calif.	Calif. Jour. of Mines and Geology	49
Appelgate, L.M.	1985	Clark-Ivanpah-Shadow Mts Reconn.	Asarco Files	

Section III Appraisal

⑭ Recommendations
- [X] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Pb, Zn, Ag, Cu.	+ 2000' of workings	
		10% Pb, 3% Zn
		8 opt Ag

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____ Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached See Files

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Cu, Pb, Zn, Ag, Au.

㉔ Ore Minerals-Major: Chalcopyrite, sphalerite, galena (oxidized) Minor: _____

㉕ Host Rocks-Major: Dolomite Minor: _____

㉖ Age of Host Rocks: mid Paleozoic

㉗ Nature of Exposures: old underground workings (caved) ?

㉘ Alteration

㉙ Total Extent

㉚ Structure: Low angle fault replacements.

㉛ Ore Occurrence: Low angle fault zone replacements. ?

㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Potential for mineralization on low angle faults down dip from old workings.

(For additional space use extra sheets)

MVK-5193

X ?

~~JHC~~ - ER File
J. H. C.

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] JUL 22 1985

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
Fro mine	USA.	California
	④ USGS Quad. Clark Mt. Calif.	⑤ File

⑥ Latitude	⑦ Longitude	⑧ AMS Sheet	Township	Range	Section	⑨ Examined by	⑩ Date
35° 34'	115° 40'	Kingston	17N	12E	14	L.M. Appelgate	March 1985
						⑪ Office: Tucson Ariz	⑫ Field Days: 1/2

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Appelgate	1985	Clark-Ivanpah-shadow Mts. Recon	ASARCO Files	

Section III Appraisal

⑭ Recommendations
- [ ] Action Now
- [ ] Too Low Grade
- [x] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [ ]

⑮
- [x] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ]

- [ ]
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly
- [ ]

⑯ Production

Commodity	Tons	Grade
Pb-Zn	?	

⑰ Reserves [ ] Measured [ ] Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes _____
Approx Total Footage _____

⑲ Excavations

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached See Files

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals

㉔ Ore Minerals-Major: Oxides — Minor

㉕ Host Rocks-Major: Quartzite - Dolomite — Minor

㉖ Age of Host Rocks: Cambrian

㉗ Nature of Exposures: Old workings ?

㉘ Alteration

㉙ Total Extent

㉚ Structure: West limb of small anticline - associated faulting

㉛ Ore Occurrence: low angle (with bedding) shear replacement of dolomite 1-3 ft in thickness - limited vertical extent.

㉜ Age of Mineralization

㉝ Conclusions & Recommendations

Not of interest

(For additional space use extra sheets)

[redacted] MVK-5193

~~JHC - ER File~~

ASARCO EXPLORATION RECORD

Submittal by Queenstake Resources

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [X] ASARCO FILE [X]

238 Unpatented Claims + ½ School Sec. Lease + 57 Claims w/5% NSR

Section I General Indexing

① Name(s) of Property or Area: ARGUS Gold Project - (Arondo, Davenport, Mohawk, Ruth Mines) : Queenstake					② Country: USA	③ State or Province: Inyo Co., CA	
					④ USGS Quad.: Trona 15'	⑤ File or Gore No.	
⑥ Latitude: 35°54'N	⑦ Longitude: 117°23'W	⑧ AMS Sheet: Trona	Township: 23S, 23S	Range: 42E, 43E	Section: 25,35, 36, 29-32	⑨ Examined by: F.R. Koutz	⑩ Date: 3/12-13/85
						⑪ Office: Tucson	⑫ Field Days: 2

Section II Sources of Information

Date Typed 4/12/85

J.H.C.

⑬ References

Author	Date	Title	Publications	Vol. No.
Queenstake Res.	10/84	Argus Project File + Maps	Submittal Data	
Ca.J.Mines & Geo.	10/38-1/51	Min.Res. Inyo Co.	V34,n4,p368; V47,n1,p17	
CA Div.Mines & Geo.	1962	Trona 1:250,000 Geol.Sheet	(Asarco File on Ruth Mine)	

APR 16 1985

Section III Appraisal

⑭ Recommendations
- [X] Action Now: Trench-Shallow Drill
- [?] Too Low Grade
- [?] Too Small
- [X] Ownership Problem
- [ ] Access Problem
- [X] Bad? Deal

⑮ Shut 1942.
- [X] Post Producer: L-208
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [X] Bulk Ton Pot.

- [X] Geologic Concept: Detachment? Fault Zones
- [X] Geochem Anomaly: Hg-As-Sb Zon
- [ ] Geophy Anomaly
- [X] 1-2mt@.0Xopt

⑯ Production

Commodity	Tons	Grade
Au(1890-1942	±200,000	.2-.3 opt Au
Au(1939-42)	68,257	0.203 opt Au
Au(1937-42)	100,528	Mint:0.186 optAu Rec.

⑰ Reserves Prob.+ Poss inferred
- [X] Measured
- [X] Estimated (tails)

Commodity	Tons	Grade
Au-	81,613 (vein)	.24 opt Au
4'min.diluted	width (5'av)	0.1 opt c/o
Tails	±200,000	(.016> .046Au)

⑱ Num. Drill Holes 4DDH/Anac. Approx Total Footage 3150'

⑲ Excavations 9400' + workings numerous pits, trenches

⑳ [ ] Spectro. Analysis Attached

㉑ [X] Assays Attached XXXXXXX 2000+

㉒ [ ] Geochem Results Attached

Section IV Geologic Data

Queenstake/Anaconda Data

㉓ Commodity or Contained Metals: Au(Ag) Au/Ag 41/1 (mill) T Cu: very low Pb,Zn : Anom. Hg,As,Sb (zoned with depth)

㉔ Ore Minerals-Major: Electrum(fg) Relict pyrite Minor: @ depth Stibnite, T cpy

㉕ Host Rocks-Major: 1.Granodiorite 2.Granite 3.DioritePorp Minor: 4Alk.2mica gr 5.Rhyodacite

㉖ Age of Host Rocks: 1.Jurassic(148my) 2.Jurassic 3.Tertiary-sills+Dikes-also Q-T Basalt

㉗ Nature of Exposures: 40% outcrop,40% float,20% covered;1400'relief,2800-4440'El.desert scrub 5"rain/yr. Waterin Homewood Cyn @ 200', Most Workings above H_2O. Housing: N/2 Sec.36 + squatters

㉘ Alteration: illite>>Kaolin,silicified vein fillings, late siderite +calcite. Gen.sharp contacts except in stringer zone chl.±epidote+quartz in low angle faults

㉙ Total Extent: Veins(5maj.mines) over 8 sq.miles.

㉚ Structure: WNW major high angle shears, SE rake to ore shoots, N-S post-min.Block faulting. NE dipping Flat Faults bring less brittle GRD over brittle GR=FX: Local stockwork-horsetail zone

㉛ Ore Occurrence: Fissure vein filling, Au in hem+Goeth after pyrite. Minor replacement in local gneissic foliation An Epithermal system. Close Assoc. of Au with As. Both BX veins with little wallrock repl.+much calcite & repl. un ore shoots 300' long - 500' deep : 3-40' wide (5'Av)

㉜ Age of Mineralization: Tertiary (Early?)

㉝ Conclusions & Recommendations: Vein tonnage potential prob.limited to 200,000T@.2Au in small discontinuous shoots in several veins. Fair bulk tonnage (.01-.1 opt Au) Potential in stockwork-stringer zones at vein ends & bends around several old glory holes. Some low-angle potential in detachment (?) zones over high angle mineralized structures. Bulk tonnage potential has not been tested. A100-200' deep Air-Trak +long hole drilling program would test the bulk tonnage potential (5 zones: 1-2 mt estimate @.0X opt Au). Discuss terms with Queenstake. Deep Au-bearing sulfide potential low-poor recovery. Ruth + E.Arondo +W.Davenport Best O.P. potential.

(For additional space use extra sheets)

Form Revised-June 1980-J.H.C. MVK-5193

X ?

JHC - ER File

ASARCO EXPLORATION RECORD

☐ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☐ Visit

Section I General Indexing

① Name(s) of Property or Area: Morning Star Mine					② Country: USA.	③ State or Province: Calif.	
					④ USGS Quad: Ivanpah, 1:62500	⑤ File	
⑥ Latitude: 115° 30'	⑦ Longitude: 35° 22'	⑧ AMS Sheet: Kingman	Township: 15N	Range: 14E	Section: 28-21	⑨ Examined by: L.M. Appelgate	⑩ Date: 9/26/85
						⑪ Office: Tucson	⑫ Field Days: 0.2

Section II Sources of Information

Date Typed _____

⑬ References

Author	Date	Title	Publications	Vol. No.
Wright + others	1953	Mines + Mineral deposits of San Bernardino Co Calif. Calif. Div. of Geology	J. H. C.	#49

JUL 19 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☐ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☐

⑮
- ☐ Post Producer
- ☒ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
Au		
	Considerable	Higrade - Underground

⑰ Reserves

① Measured Commodity	Tons	Grade
① 4.5	open pit	0.063
② Total of 8.5	" "	?

② Estimated Commodity	Tons	Grade

⑱ Num. Drill Holes: ± 25

Approx Total Footage: ?

⑲ Excavations: 5000' underground

⑳ ☐ Spectro. Analysis Attached ㉑ ☐ Assays Attached ㉒ ☐ Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au.

㉔ Ore Minerals-Major: Au. Minor:

㉕ Host Rocks-Major: Granite Minor:

㉖ Age of Host Rocks: Cret.

㉗ Nature of Exposures:

㉘ Alteration: Minor - chlorite, slight Feldspar

㉙ Total Extent: ≈ ½ square mile

㉚ Structure: - low angle Fault - Fractured hanging wall

㉛ Ore Occurrence: Fracture coatings and qtz veins in hanging wall of (Thrust?) 100' thick zone, 800' x 1200', continues down dip -30°

㉜ Age of Mineralization:

㉝ Conclusions & Recommendations

Operator: Heavy Metals Dev. 3301 Spring Mt. Rd. Suite 13, Las Vegas.
Ph. 362-3152 (702) Jack Jordan

(For additional space use extra sheets)

[redacted] MVK-5193

ASARCO EXPLORATION RECORD (Form Revised 3/8/75 by J.H.C.)

☒ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☐ JHC-ER File

Section I General Indexing

① Name(s) of Property or Area	② Country	③ State or Province
RED CLOUD CANYON + AREA → N	USA	CALIFORNIA
	④ Co. or Map Sheet: CHUCKWALLA MTS 15'	⑤ File or Geol. No.: Riverside Co.

⑥ Latitude	⑦ Longitude	⑧ Mer.	Tws.	Rng.	Sec.	⑨ Examined by	⑩ Date
33°37' → 33° 32.5'	115° 27' → 115 25'					Mam Miller	MARCH 1-15, 85
						⑪ Office: TUCSON	⑫ Field Days: 15

Section II Sources of Information

⑬ References

Author	Date	Title	Publications	Vol. No.
USBM	1985	CHUCKWALLA MTS WILDERNESS STUDY AREA		

J.H.C.

AUG 13 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☒ Too Low Grade
- ☐ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☐

⑮
- ☒ Past Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐

- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy. Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
GOLD	3000 oz	

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes ?
Approx. Total Footage

⑲ Excavations NUMEROUS, PITS, SHAFTS.

⑳ Spectro. Analysis Attached

㉑ Assays Attached

㉒ YES Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals Au, Ag, W

㉔ Ore Minerals - Major Au, Ag, SCHEELITE Minor

㉕ Host Rocks - Major GRANITIC GNEISSES Minor

㉖ Age of Host Rocks PE CHUCKWALLA COMPLEX ? outcrop ?

㉗ Nature of Exposures. ROCKS OF THE PE CHUCKWALLA COMPLEX INCLUDE GNEISSES, GRANITIC ROCKS, SCHISTS & LATTER MESOZOIC INTRUSIONS

㉘ Alteration RED, BROWN LIMONITIC COLOR ANOMALY. SERICITE, CLAY MINERALS ADJ TO MAJOR ORE STRUCTURES

㉙ Total Extent FROM FEET → SEVERAL HUNDRED FEET FROM VEIN SYSTEMS?

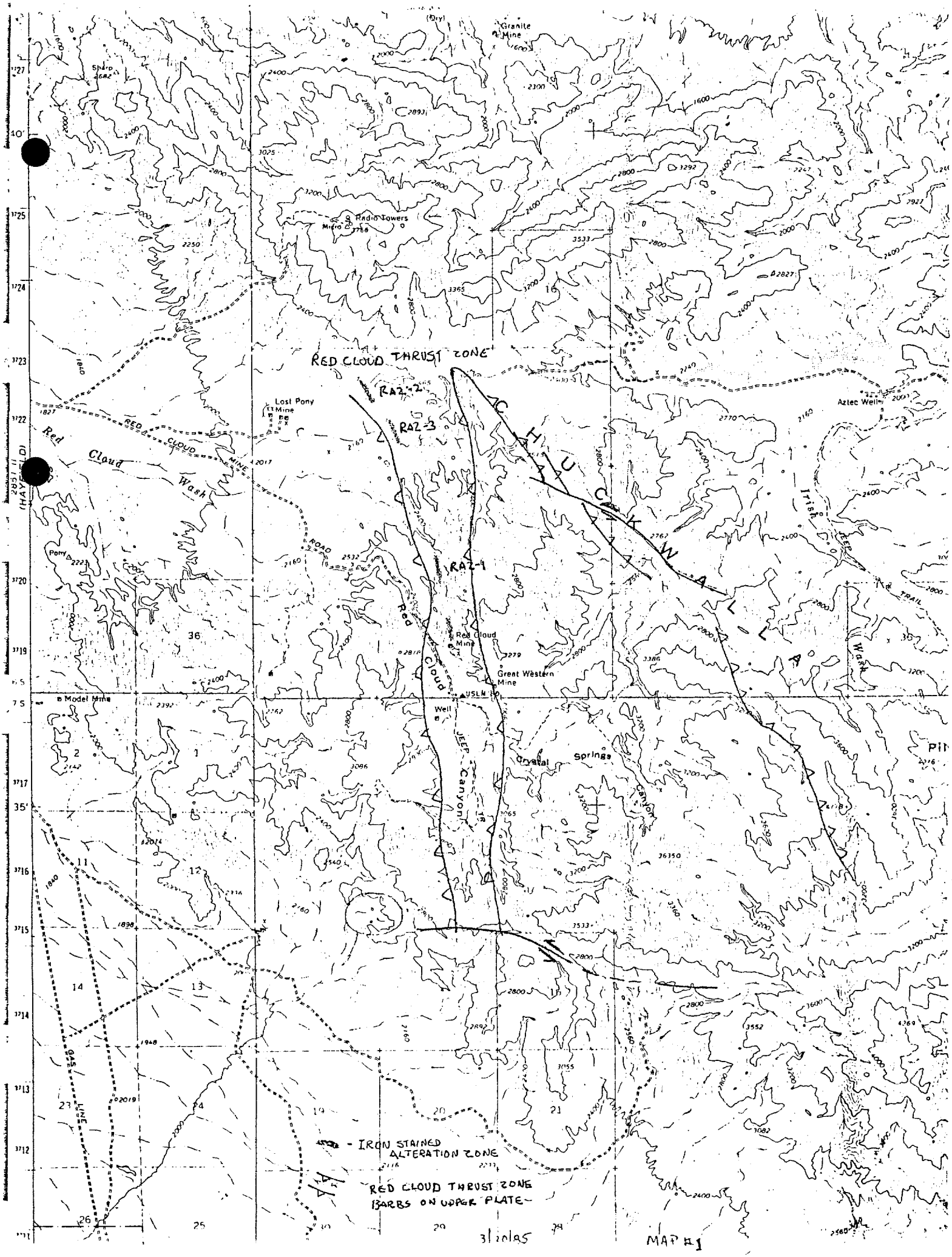
㉚ Structure RED CLOUD CANYON THRUST IS MAPPED W/IN AREA. THIS AREA APPEARS TO BE A SANDWICHED SEGMENT BETWEEN TWO MOVEMENTS OF THE THRUST

㉛ Ore Occurrence - ASSOCIATED W/ QZ VEINS & SHEAR ZONES. GOLD VALUES HISTORICALLY HAVE BEEN ERRATIC.

㉜ Age of Mineralization ?

㉝ Conclusions and Recommendations - TOO LOW GRADE & TOO TO INTEREST ASARCO. ALTHOUGH STRUCTURES APPEAR TO BE LARGE 1 2 MILES x 500' WIDE ONLY BACKGROUND GOLD WAS DETECTED. RED BROWN LIMONITIC ALTERATION IS NOT ANOMALOUS IN GOLD & THIS IS THE LARGEST SIGN OF ALTERATION. SAMPLING WAS DONE WHEREVER THE LIMONITIC ALTERATION WAS FOUND

BUT NO GOLD ANOMALIES OF ANY INTEREST WERE DETECTED.


RED CLOUD THRUST ZONE
RAZ-2
RAZ-3
RAZ-1
CHUCKWALLA
Granite Mine
Radio Towers
Lost Pony Mine
Red Cloud Wash
Red Cloud Mine
Great Western Mine
Model Mine
Crystal Springs
Aztec Well
Red Cloud Canyon
Irish Trail
Pony
Well
- IRON STAINED ALTERATION ZONE
RED CLOUD THRUST ZONE
BARBS ON UPPER PLATE
3/20/85
MAP #1

SAMPLE #
CH-R 2-18
CHRC-1-10 (RED CLOUD MINE AREA)

MAPS #2

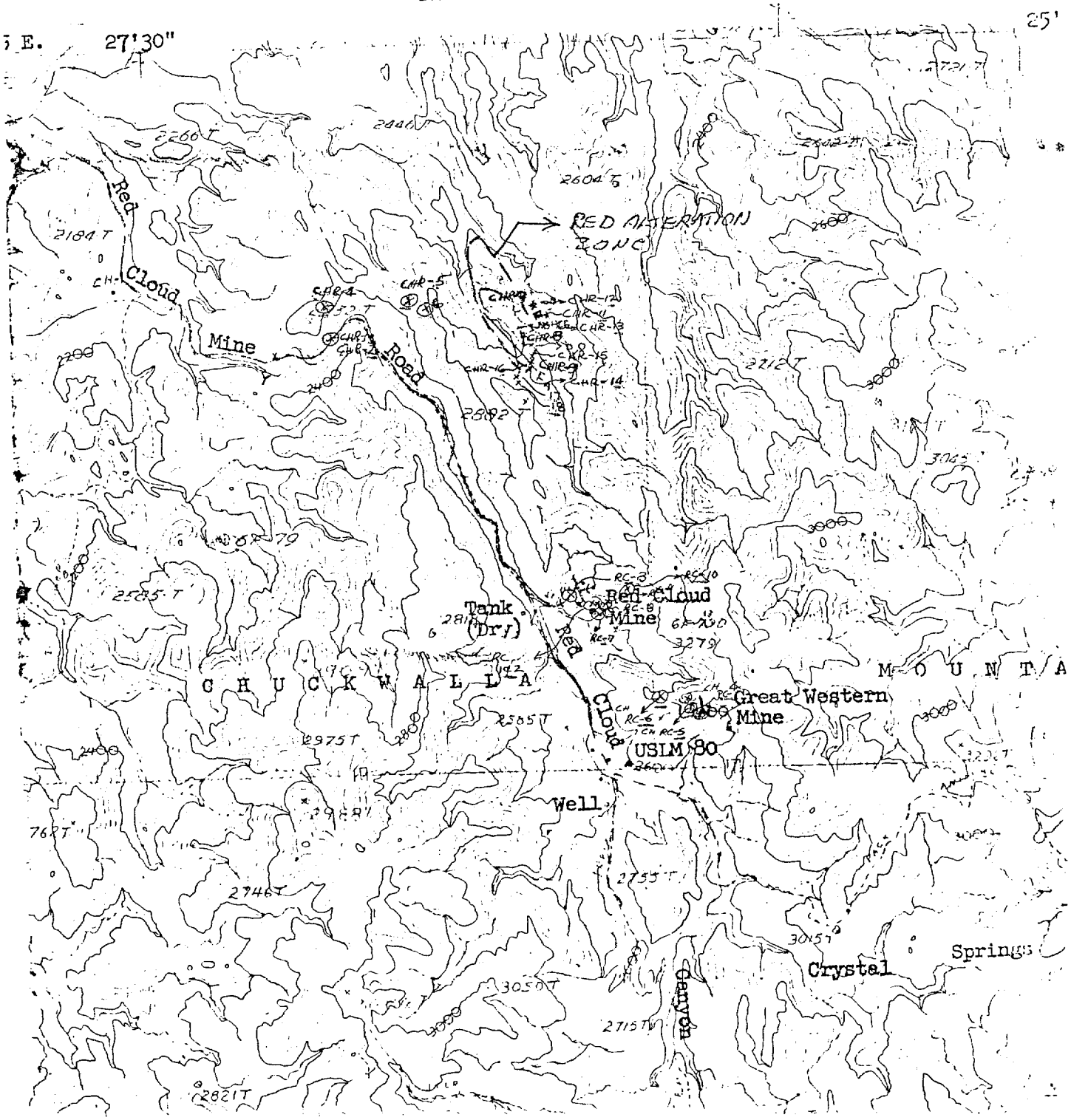
21

GSVII C-C

ESTON SMITH
LAKE TAMARISK

CHUCKWALLA MTS
7½ MIN MAP

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES



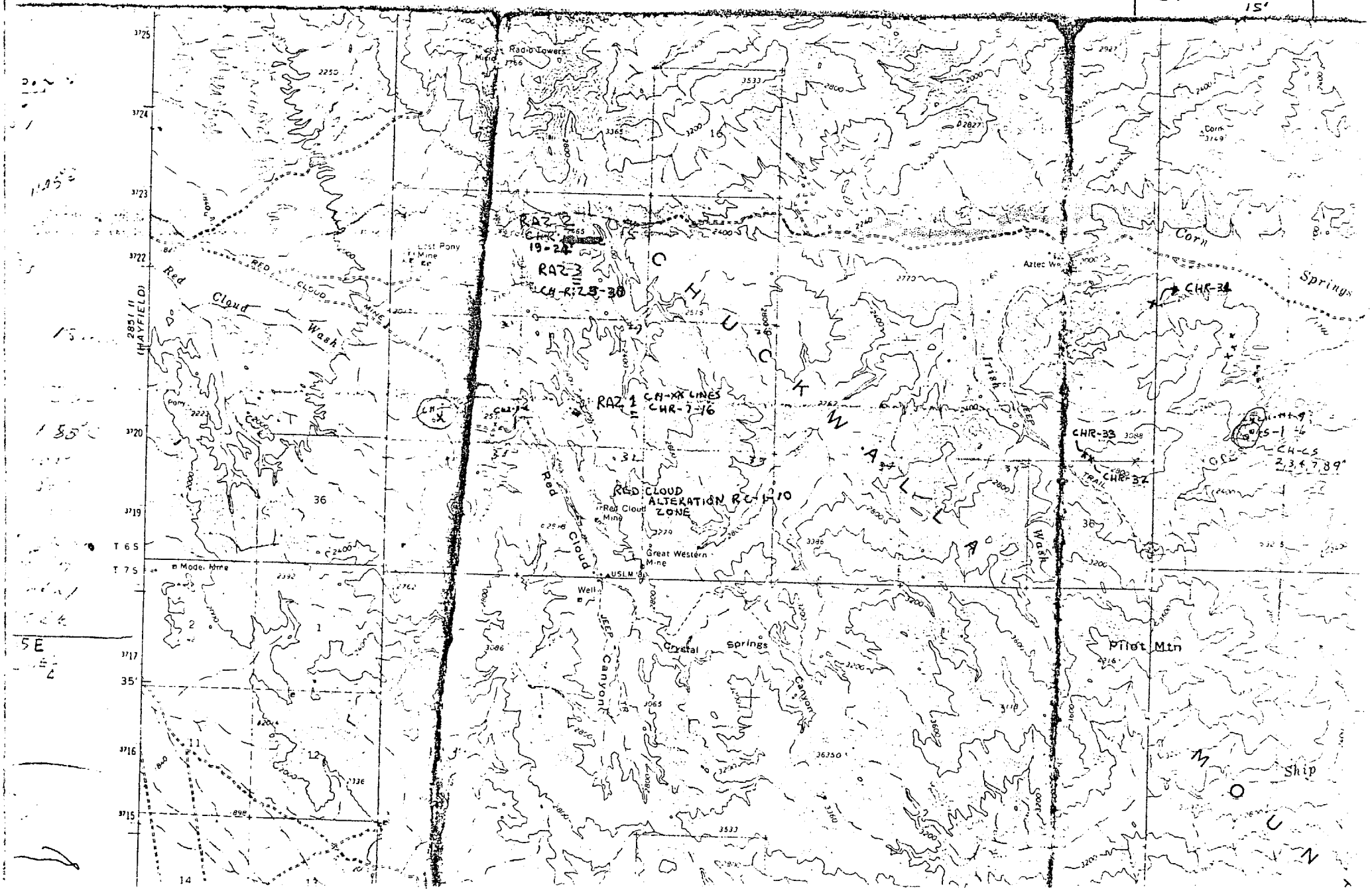
SAMPLG SITES
CHCS, 2;3,4,7,8,9

CHR-31 -33

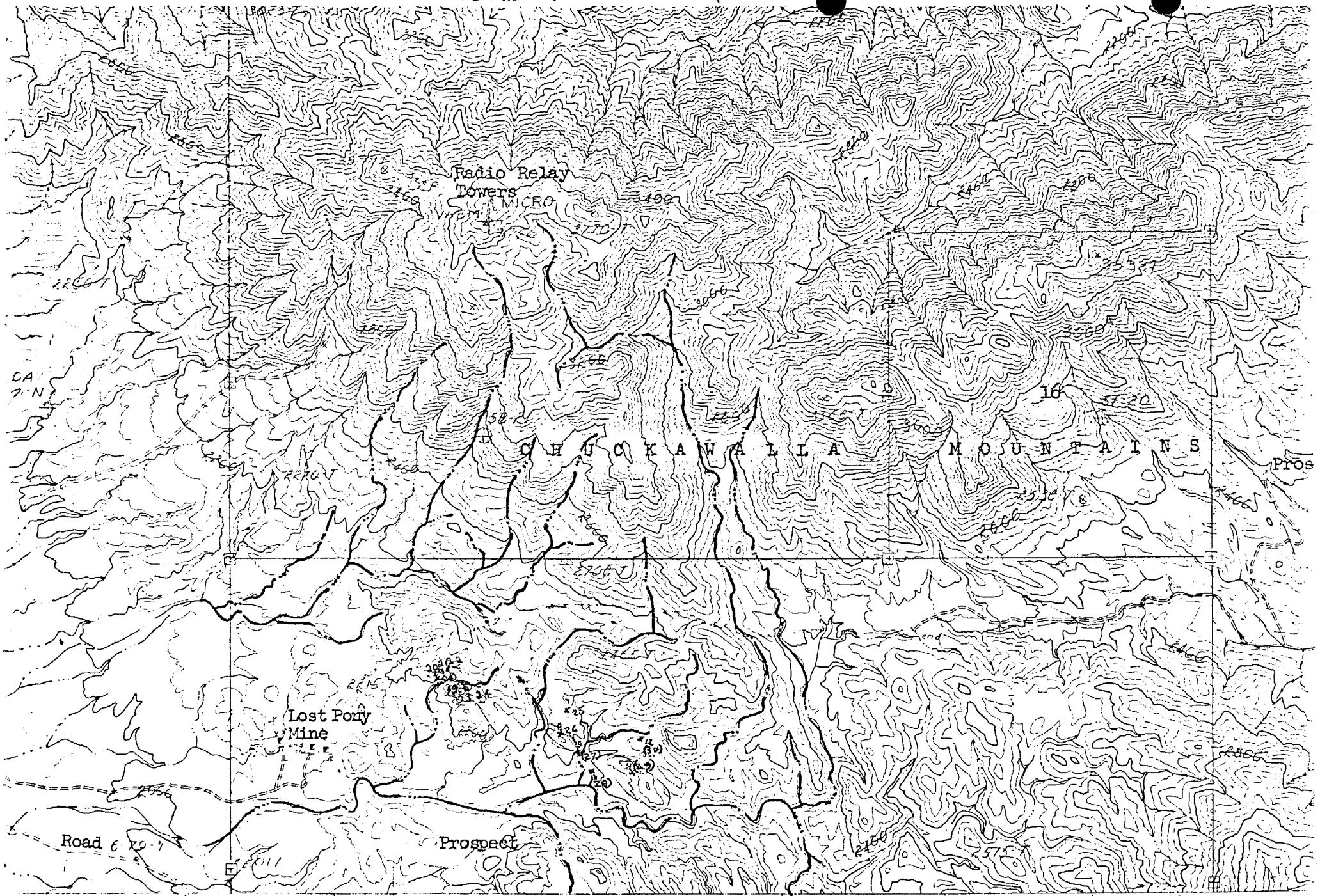
AREAS OF IRON STAINED ALTERATION (RAZ)

SEE NEXT PAGE FOR DETAIL

CHUCKWALLA MTS 15'



DETAIL OF PRIOR 15' MAP



DETAIL OF AREAS
AZ 24 3

SAMPLE #'S
[redacted] CHR 19-24
[redacted] CHR 25-30

CHUCKWALLA MTS SW
1"=2000'

SCALE 1:24000

1 MILE

☒ FIELD EXAMINATION ☐ LITERATURE SEARCH ☐ ASARCO FILE ☐

Section I General Indexing

① Name(s) of Property or Area: CORN SPRINGS & IRISH WASH AREA							② Country: USA	③ State or Province: CAL.
							④ Co. or Map Sheet: CHUCKWALLA MTS 15'	⑤ File or Corp No.
⑥ Latitude: 33° 32→37'	⑦ Longitude: 115° 20-25'	⑧ Mer.	Tws.	Rng.	Sec.	⑨ Examined by: MA. MILLER		⑩ Date: MARCH 85
						⑪ Office: TUCSON.		⑫ Field Days: 9

Section II Sources of Information

⑬ References

Author	Date	Title	Publications	Vol. No.
USBM	MARCH 1985	CHUCKWALLA MTS WILDERNESS STUDY AREA	J. H. C.	

AUG 13 1985

Section III Appraisal

⑭ Recommendations
- ☐ Action Now
- ☒ Too Low Grade
- ☒ Too Small
- ☐ Ownership Problem
- ☐ Access Problem
- ☐

⑮
- ☒ Past Producer
- ☐ Producer
- ☐ Mineral Deposit
- ☐ Prospect
- ☐
- ☐ Geologic Concept
- ☐ Geochem Anomaly
- ☐ Geophy. Anomaly
- ☐

⑯ Production

Commodity	Tons	Grade
?		

⑰ Reserves ☐ Measured ☐ Estimated

Commodity	Tons	Grade

⑱ Num. Drill Holes ?
Approx. Total Footage

⑲ Excavations: NUMEROUS PITS & SHAFTS, TUNNELS.

⑳ Spectro. Analysis Attached

㉑ Assays Attached

㉒ X Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Au, Cu

㉔ Ore Minerals - Major: Au; MALACITE; Minor:

㉕ Host Rocks - Major: PE CHUCKWALLA COMPLEX; GNEISSES, GRANITES SCHISTS; Minor:

㉖ Age of Host Rocks: PE

㉗ Nature of Exposures: GNEISSES & SCHISTS OF THE CHUCKWALLA COMPLEX. X ?

㉘ Alteration: LOCALLY ASSOC. W/ THE VEINS AS SERICITE, LIMONITE & CLAY MINERALS

㉙ Total Extent: 1-2 FEET.

㉚ Structure: Qz VEINS, FAULT, SHEAR ZONES.

㉛ Ore Occurrence: ASSOC. W/ Qz VEINS USUALLY W/ SHOWS of MALACITE

㉜ Age of Mineralization: ?

㉝ Conclusions and Recommendations: TOO SMALL, HOWEVER ONE SAMPLE of INTEREST IS CHR-32 WHICH RAN ~1 OPT. IN A BASIC DIKE W/ 0.6% Cu. UNUSUAL OCCURRENCE. OTHERWISE VEIN SYSTEMS +/- 100' LONG NARROW ± 3' AND DISCONTINOUS. USBM DID EXTENSIVE SAMPLING (SEE REFERENCE) W/ NO INDICATION OF ANY POTENTIAL

DESCRIPTION OF SAMPLE SITES: CORN SPRINGS AREA

HR-31 Qz VEINS OR ZONES S OF ORO FINO MINE IN CORN SPRINGS DISTRICT S. OF CORN SPRINGS Rd. AT WIDEST POINT ZONE IS ~100' WIDE. MAY BE BRECCIATED. (.05, .55)

IRISH WASH AREA

CHR-32 BASIC DIKE IN IRISH WASH AREA SHAFT SUNK IN DIKE. Cu STAINING MOST OF OUTCROP IS GRANITE (29.04, 22.52)

CHR-33 FELSIC DIKE OR F.G. GRANITE N OF SAMPLE #32. CHIP IS ~ 100' LONG ALONG RIDGETOP (.12, .15)

CORN SPRINGS DISTRICT.

~~CHR-34~~

CH-CS 1: Qz VEIN & SHEAR ZONE Qz VEIN IS ~3' WIDE

CHCS 2: AA +50'N (.047, 2.03)

CHCS 3: CHIP ALONG VEIN EXPOSED IN STOPES. VEIN IS ~4' WIDE. (.868, 1.98)

CHCS 4: CHIP ALONG F.W HOST ROCK (.03, .516)

CHCS 5: 2' CHIP ACROSS VEIN H.W + F.W SHOW CLAY ALTERATION

CHCS 6: AA BUT ALONG STRIKE

CHCS 7: F.W HOST ROCK GRANITE PORPHRY (.005, .112)

CHCS 8: H.W ROCKS ~ 50'W OF VEIN. REPRESENTS ~20' OF SECTION. (.001, .043)

CHCS 9: SILIC SHEAR ZONE TERMINATES AGAINST MSY Qz VEIN POSS MYL. FILL IN SHEAR ZONE STRIKE → N DIP STEEP → SE. (.008, <.05)

Red Cloud Canyon Area (Au .007, Ag .07) in ppm's

Descriptions of Sample Sites -

Red Cloud Canyon Area CHR-2-18

CHR-2: Alteration ads. to Qz Vein: Zone is ~ 5' wide .007, .07

CHR-3: Qz vein of CHR-2 ~ 1' wide shows vertical slickensides (.004, .2)

CHR-4 Qz zone w/ Limonite Alteration. Qz Vein on saddle (Qz zone) Chip sample across zone is 15' wide (.002, <.05)

CHR-5: "Spotted" Qz vein w/ sulfides. Py? N85°E 1' wide Spotting appears to be muscovite and possibly other silicates. Vein is ~ 25' long (.002, <.05)

CHR-6: Qz/Fpar Pegmetite zone ~ 15-20' wide o.c very abundant in area. Located on S. side of Red Cloud Canyon Ridge. (<.002, <.05)

CHR-7 & 8 Red Alteration Zone Traverses (Chip Sample) across zone as shown on map. (.003, <.09)

CHR-9: Fault zone on ridge N.W of Red Alt. Zone (RAZ) N30°W NE dip-(steep)

CHR-10: Qtzite - Poss Bleached, Altered Zone (.101, .075)

CHR-11: Dump Sample (Grab) from shaft on E side of RAZ (3.71, 2.88)

CHR-12 Chip Sample Prospect Pit N of CHR-11; ~ 50' N of Shaft (.03, .64)

CHR-13: Chip Sample 30' S of 6N 2E (.163, 0.9)

CHR-14: Dk Gy Hvy sheared Between Felsic Rks on Ridge W. of RAZ. (.004, .124)

CHR-15: "Silica" zone above RAZ Granular Qtzite occ Lim after Py (.135, 1.07)

CHR-16: Felsic Rock w/ some altered F/par W. of RAZ (.004, 063)

CH -XX- SOIL SAMPLING GRID ON RED ALT ZONE IN RED CLOUD CANYON AREA.

CH-XX 0N-10N @ 0.5 INTERVALS (50')

CH-XX 0N-.5W @ 1.00 INTERVALS (100')

CH-XX 10N-2E → 1N2E @ 1.00 INTERVALS (100') - (THIS LINE IS 200' E of CH-XX 0N-10N)

CHR-17: FELSIC UNIT W. OF RAZ ON RIDGE (.272, .467)

CHR- 18 SILIC & SHEARED UNIT

~~CHR-~~ ~~CHR~~. RED CLOUD MINE AREA
CH-RC 1-6 7-10

CHRC-1 BELOW F.W IN RED CLOUD MINE AREA - HIGH ALTERED SERICITE/CLAY ZONE - 5' VERTICAL SAMPLE N35°W 25°E (.436, .34)

CHRC-2 CHIP SAMPLE ABOVE H.W. LIMONITE & RELICT SULFIDES. (1.98, .47)

CHRC-3A+B CHIP/GRAB SAMPLE ~ 300' N OF CHRC-1 - EXTENSION OF CLAY ZONE (.01, .12) (.017, .405)

CHRC-4 SAMPLE ALONG Qz VEIN @ GREAT WESTERN MINE (.056, 1.23)

CHRC-5 CHIP SAMPLE ALONG F.W OF Qz VEIN IN ALTERED BIOTITE GNEISS - ABUNDANT CLAY MINERALS - FEW IN SHR/FLT ZONES. (.005, .235)

CHRC-6 CHIP ALONG Qz VEIN OF CHRC-5 Qz VEIN IS ±9' WIDE N60°W 45°E (.02, 26.6)

CHRC-7 "RED" ALTERATION ZONE ADJECENT TO H.W. OF RED CLOUD MINE AREA BIOTITE GNEISS, HWY (.002, .135)

CHRC-8 A.A. 50' E of #7 (.002, .103)

CHRC-9 AA. 100' N OF #8 (.001, .068)

P3

CHRC-10 200' E of CHRC-9 IN LESS LIMONITE STAINED PART OF RAZ EAST EDGE OF COLOR ZONE STILL APPEARS TO BE ± 500' FURTHER E.

(.001, <.05)

N. OF RED CLOUD CANYON AREA

NORTH EXTENSION OF RED ALTERATION ZONE

CHR-19: IRON STAINED ZONE: ROCK is GRANITIC GNEISS w/ EPIDOTE VEINING (.004, .12)

CHR-20: IRON STAINED ZONE AA. RANDOM CHIP SAMPLES (.001 .05)

CHR-21: Qz EPIDOTE ZONE (<.001, <.05) " "

CHR-22: Qz EPIDOTE, PEIDMONTITE ZONE (<.001, <.05)

CHR-23: AA. ~ 10% EPIDOTE (.003, <.05)

CHR-24: FE STAINED ZONE ADJ. TO Qz, EPIDOTE ZONE (<.001, <.05)

CHR-25: Qz, Fpar EPIDOTE: PODS NEAR CONTACT ZONE OF JURASSIC INTRUSIVE (<.001, <.05)

CHR-26: FE STAINED "ALTERED" ZONE GRANITIC GNEISS w/ HVY SHEARING OR FOLIATION (.001, <.05)

CHR 27: SOUTH OF CHR-26 ~ 200' FE STAINED ZONE (<.001, <.05)

CHR-28 CHIPS OF Qz VEINS IN FE STAINED ZONE (<.001, <.05)

CHR-29 200' S OF CHR-28 FE STAINED ZONE (.02, <.05)

CHR-30 SIMILAR TO CHR-25 BUT 700' S. OF CONTACT OF INTRUSIVE CAN BE SEEN → E AS A LT GRN/GY FALLS. (<.001, <.05)

~~CHR-31~~ ~~[illegible]~~

Geochemical Analysis Report

TO: Mr Mark Miller
ASARCO
Desert Star Motel, 9090 E. Hobson Way
Blythe, CA 92225 tel:619/922-0273

Lot Identity: ASB-50322B

Report Date: 03/22/85

Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Zn
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CH-XX 0; 0	1	.0541	8.262	.0099	15.89	.5173	3.074	9.179	1.642	<.996	15.72
CH-XX 0.5; 0	2	<.049	<.996	.0045	15.69	.5206	2.119	8.721	<.996	1.752	9.937
CH-XX 1N; 0	3	<.048	2.360	.0014	12.07	<.480	2.955	4.965	1.337	<.961	10.12
CH-XX 1.5N; 0	4	<.048	2.380	.0017	12.55	.7518	3.184	7.051	<.972	1.610	11.34
CH-XX 2N; 0	5	.1762	3.085	.0073	28.12	.5312	3.297	9.322	1.214	1.695	23.43
CH-XX 2.5N; 0	6	1.427	4.445	.0035	30.15	<.498	3.693	8.516	<.996	<.996	35.63
CH-XX 3N; 0	7	.0645	1.193	.0021	21.23	1.047	3.041	9.911	<.965	2.830	32.48
CH-XX 3.5N; 0	8	<.048	3.776	.0017	9.076	<.488	2.241	5.633	1.500	<.976	16.27
CH-XX 4.5N; 0	9	.2594	94.43	.0568	15.82	<.478	3.532	19.63	<.957	1.409	33.91
CH-XX 5N; 0	10	<.046	2.487	.0037	10.88	<.464	2.121	8.520	1.204	<.929	21.60
CH-XX 5.5N; 0	11	.0595	4.986	.0026	17.98	.8412	2.347	6.917	<.936	1.392	28.26
CH-XX 6N; 0	12	.0916	5.047	.0015	18.19	<.454	2.684	7.101	<.909	<.909	13.64
CH-XX 6.5N; 0	13	<.047	4.220	.0017	21.26	.7060	3.184	6.497	<.946	<.946	10.61
CH-XX 7N; 0	14	.0649	5.038	.0145	17.02	.4832	2.793	8.781	1.024	.9745	13.14
CH-XX 7.5N; 0	15	<.044	4.572	.0121	22.27	<.446	5.136	7.789	.9133	<.892	15.68
CH-XX 8N; 0	16	<.048	2.124	.0027	14.91	.8208	2.733	6.588	<.972	1.862	16.91
CH-XX 8.5N; 0	17	.0691	7.671	.0019	17.23	.6373	3.384	6.875	<.976	<.976	11.11
CH-XX 9N; 0	18	.0803	16.32	.0014	8.815	.5748	3.744	7.952	<.946	<.946	11.02
CH-XX 9.5N; 0	19	.0841	8.353	.0091	5.988	.6351	2.670	34.52	1.730	<.984	35.38
CH-XX 10N; 0	20	.0723	4.461	.0019	11.81	.6440	2.577	14.13	<.992	2.878	19.45
CH-XX 0N.5W	21	.0948	2.887	.0056	10.56	.7819	1.376	10.53	1.153	1.713	37.01
CH-XX 1N.5W	22	<.049	3.774	.0058	11.65	<.496	1.737	7.092	1.109	<.992	29.96
CH-XX 2N.5W	23	.1858	36.54	.1033	22.57	1.288	2.594	7.675	1.326	<.976	10.87
CH-XX 3N.5W	24	.3036	6.120	.0520	16.77	<.496	2.902	3.966	1.627	<.992	11.89
CH-XX 4N.5W	25	2.476	13.38	.1040	34.33	<.461	5.945	12.62	1.573	<.922	19.84
CH-XX 5N.5W	26	<.049	6.969	.0057	6.742	.7355	2.855	13.23	<.984	<.984	24.75
CH-XX 6N.5W	27	<.046	7.367	.0023	19.72	<.464	3.362	9.061	1.150	<.929	15.97
CH-XX 7N.5W	28	<.050	5.664	.0025	14.94	<.500	3.789	7.317	<1.00	<1.00	18.75
CH-XX 8N.5W	29	.1173	4.210	.0029	4.468	.8819	2.727	6.095	<.996	<.996	8.971
CH-XX 9N.5W	30	.0674	3.164	.0045	18.81	<.494	2.426	4.777	<.988	<.988	13.19
CH-XX 10N.5W	31	.1760	7.335	.0040	11.59	.6589	4.190	3.869	<.980	<.980	8.449
CH-R 2	32	.0795	5.352	.0076	10.57	<.486	3.346	10.16	<.972	1.264	16.49
CH-R 3	33	.2030	32.00	.0047	10.18	<.494	4.709	14.36	1.200	<.988	10.50
CH-R 4	34	<.046	11.17	.0024	7.734	<.469	3.297	5.805	<.939	<.939	11.27
CH-R 5	35	<.047	<.943	.0029	11.52	<.471	1.829	10.61	<.943	<.943	41.79
CH-R 6	36	<.049	<.992	.0016	9.641	.7400	4.063	6.006	<.992	<.992	5.189
CH-R 7	37	.0906	7.785	.0030	27.19	.6790	3.080	8.668	1.606	1.121	16.86
CH-R 8	38	<.049	<.984	.0010	11.52	<.492	2.144	4.723	1.155	<.984	13.65
CH-R 10	39	.0751	5.726	.1012	20.83	<.498	1.630	4.755	7.775	<.996	41.25
CH-RC 1	40	.3395	24.34	.4360	627.0	.6034	2.813	15.71	7.409	<.996	210.0
CH-RC 2	41	.4707	48.45	1.988	49.54	<.475	4.495	23.90	2.143	1.314	31.88
CH-RC 3A	42	.1209	1.454	.0100	43.64	<.446	1.524	5.695	<.892	<.892	305.2
CH-RC 3B	43	.4054	<.939	.0177	84.21	<.469	5.852	17.31	<.939	1.223	471.4

Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Zn
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CH-RC 4	44	1.251	6.661	.0568	138.0	.6375	8.479	51.21	2.228	1.437	160.
CH-RC 5	45	.2355	4.376	.0050	111.6	<.498	3.269	5.198	<.996	<.996	443.
CH-RC 6	46	26.60	7.466	.0485	141.0	.8965	67.14	123.7	8.264	<.988	315.

Red: Indicates data above high standard and may not be quantitatively accurate.

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This report has been reviewed and approved by:

Date: 3/22/88

William B. Henderson, Lab Director/Chemist

for

GSI, 2741 Toledo St.,Suite 211, Torrance, CA 90503 Phone: 213/320-3680

Geochemical Analysis Report

TO: Mr. Mark Miller
ASARCO
Desert Star Motel, 9090 E. Hobson Way
Blythe, CA 92225 tel:619/922-0273

Lot Identity: ASB-50416A

Report Date: 04/16/85

Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Zn
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CH-XX 1N-2E	1	.0719	5.190	.0093	5.387	<.443	1.528	10.53	<.886	<.886	34.02
CH-XX 2N-2E	2	<.042	2.675	.0034	4.128	<.426	.6707	10.82	<.853	<.853	30.00
CH-XX 3N-2E	3	.0633	8.325	.0068	9.702	<.444	1.320	8.494	<.889	<.889	30.25
CH-XX 4N-2E	4	.0715	11.48	.0032	12.37	<.448	1.565	13.96	<.896	.9389	27.08
CH-XX 5N-2E	5	.1733	22.78	.0107	6.813	<.461	.9634	11.19	<.922	<.922	25.66
CH-XX 6N-2E	6	<.046	5.170	.0020	16.00	<.462	1.664	6.436	<.925	<.925	22.90
CH-XX 7N-2E	7	.3531	148.1	.5145	31.23	.5989	1.923	35.39	<.922	<.922	92.61
CH-XX 8N-2E	8	.9685	76.08	.2354	14.06	.4884	1.201	9.775	<.919	<.919	47.57
CH-XX 9N-2E	9	.3118	10.50	.0644	17.04	.8795	2.454	12.26	<.912	1.132	25.02
CH-XX 10N-2E	10	.4101	56.32	.0309	8.300	.5522	.9942	10.57	<.889	<.889	23.70
CH-XX 4N-0	11	.0668	10.28	.0049	27.72	<.454	3.479	18.39	<.909	<.909	19.29
CHR-11	12	2.882	458.4	3.715	63.89	.4814	4.869	56.04	2.092	1.520	125.2
CHR-12	13	.6485	34.35	.0328	16.32	.5551	1.173	7.519	<.915	<.915	12.77
CHR-13	14	.9047	53.70	.1631	42.65	<.456	1.519	12.26	1.236	<.912	38.36
CHR-14	15	.1243	3.297	.0047	17.90	<.454	1.335	23.45	<.909	1.760	109.4
CHR-15	16	1.074	67.42	.1352	40.75	.7149	4.545	24.08	1.268	<.902	42.05
CHR-16	17	.0637	3.833	.0040	16.96	.6638	1.151	24.46	<.922	<.922	27.49
CHR-17	18	.4678	67.00	.2723	58.23	.5889	2.832	12.51	<.909	<.909	56.45
CH-CS 2	19	2.086	5.497	.0474	513.1	1.028	3.472	39.38	<1.00	<1.00	48.31
CH-CS 3	20	1.989	1.656	.8687	4420	1.767	4.075	21.96	<.883	<.883	285.2
CH-CS 4	21	.5168	1.745	.0302	322.8	.5552	1.333	8.937	<.889	<.889	25.24
CH-CS 7	22	.1124	2.816	.0047	23.34	<.461	1.282	12.25	1.044	<.922	26.09
CH-CS 8	23	.0487	1.225	.0016	18.21	.6730	.7214	9.931	<.902	<.902	40.65
CH-CS 9	24	<.045	2.051	.0079	11.40	.7090	.8634	9.245	<.909	1.189	29.95
CH-RC 7	25	.1358	1.345	.0023	58.37	<.452	1.369	8.435	<.905	<.905	17.48
CH-RC 8	26	.1035	1.472	.0025	56.72	<.434	2.264	11.19	<.868	<.868	13.18
CH-RC 9	27	.0684	.9578	.0018	59.55	<.449	2.659	6.615	<.899	<.899	26.89
CH-RC 10	28	<.045	<.902	.0014	5.639	.6791	1.399	8.091	<.902	<.902	20.91

ASARCO Incorporated

APR 19 1985

SW Exploration

Red: Indicates data above high standard and may not be quantitatively accurate.

This report has been reviewed and approved by:

Date: 4/16/85

William B. Henderson, Lab Director/Chemist

for

GSI, 2741 Toledo St ,Suite 211, Torrance, CA 90503 Phone: 213/320-3680

Geochemical Analysis Report

TO: Mr. Mark Miller
ASARCO
Desert Star Motel, 9090 E. Hobson Way
Blythe, CA. 92225 tel:619/922-0273

Lot Identity: ASE-50529A

Report Date: 05/30/85

	Sample ID	#	Ag	As	Au	Cu	Hg	Mo	Pb	Sb	Tl	Zn
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
AER Sheet Red Cloud Canyon	CHR-19	1	.1228	5.201	.0038	20.27	.5812	2.844	13.85	1.296	<.892	10.7
	CHR-20	2	.0585	2.149	.0018	12.33	<.498	3.736	11.86	1.041	<.996	9.84
	CHR-21	3	<.047	2.741	<.001	6.692	.6082	2.254	9.186	<.957	<.957	4.38
	CHR-22	4	<.050	<1.00	<.001	5.511	.8340	1.662	12.08	1.449	<1.00	1.94
	CHR-23	5	<.048	3.198	.0026	8.096	<.486	1.419	39.68	1.198	<.972	23.4
	CHR-24	6	<.050	1.019	<.001	4.949	<.500	3.190	11.54	<1.00	<1.00	13.1
	CHR-25	7	<.049	<.980	<.001	3.444	.5863	1.551	9.073	<.980	<.980	24.4
	CHR-26	8	<.047	<.957	.0012	5.415	.9832	2.498	6.650	1.658	<.957	16.9
	CHR-27	9	<.049	1.805	<.001	3.668	.6987	2.151	9.407	2.006	<.992	22.6
	CHR-28	10	<.050	<1.00	<.001	7.481	1.224	3.158	3.990	1.763	<1.00	2.30
	CHR-29	11	<.050	<1.00	.0183	3.937	.5538	2.599	12.24	1.407	<1.00	15.6
	CHR-30	12	<.050	2.721	<.001	7.272	.5645	2.341	8.944	<1.00	<1.00	36.1
	CHR-31	13	.5522	5.509	.0540	303.8	.6554	10.70	14.38	9.599	<1.00	25.8
	CHR-32	14	22.52	29.19	29.04	6421	13.21	7.973	2046	3.076	<.996	99.1
	CHR-33	15	.1569	1.113	.1218	102.5	.7906	1.731	33.06	1.388	<1.00	9.59
AER Sheet Model Mine	CHR-34	16	<.049	1.670	.0051	16.36	.8899	1.777	4.750	1.815	<.992	9.94
	CHR-35	17	<.050	1.911	.0017	9.953	<.500	.6778	6.462	1.683	<1.00	19.2
	CHR-36	18	<.050	1.129	.0030	14.12	.6694	1.109	5.657	1.456	<1.00	35.1
	CHR-37	19	<.049	10.25	.0010	13.14	.5525	2.424	5.138	2.239	1.697	17.0
	CHR-38	20	<.049	7.431	.0026	13.39	1.300	2.799	12.92	2.501	<.988	19.5
	CHR-39	21	<.050	1.865	.0017	9.658	<.500	1.974	4.825	2.174	<1.00	17.9
	CHR-40	22	<.049	1.317	.0032	7.576	.8769	1.838	6.857	2.358	1.032	18.5

Red: Indicates data above high standard and may not be quantitatively accurate.

This report has been reviewed and approved by:

Wm Fal

Date: 5/31/85

William B. Henderson, Lab Director/Chemist
for

GSI, 2741 Toledo St.,Suite 211, Torrance, CA 90503 Phone: 213/320-3680

ER File ~~JHC~~

ASARCO EXPLORATION RECORD

[X] FIELD EXAMINATION [ ] LITERATURE SEARCH [ ] ASARCO FILE [ ] J. H. C.

JAN 22 1985

Section I General Indexing

① Name(s) of Property or Area: California Mine, Italian-Peerless Mine, and Centennial Mine						② Country: USA	③ State or Province: Calif.	
						④ USGS Quad.: Amador City	⑤ File or Core No.: Amador Co.	
⑥ Latitude: 38°27'	⑦ Longitude: 120°50'	⑧ AMS Sheet: Sacramento	Township: 7N	Range: 10E	Section: 13,14 23,24	⑨ Examined by: H.G.Kreis & G.Stathis		⑩ Date: 9-1984
						⑪ Office: SWED		⑫ Field Days: 4

Section II Sources of Information

Date Typed 1/17/85

⑬ References

Author	Date	Title	Publications	Vol. No.
Mother Lode Gold Mines Consolidated, 1984, packet of recent and past reports;				
Asarco files. Carlson and Clark, 1954, Mines and Min. Res. of Amador Co.,				
CJ of M&G, vol. 50, No. 1				

Section III Appraisal

⑭ Recommendations

- [ ] Action Now
- [ ] Too Low Grade
- [ ] Too Small
- [ ] Ownership Problem
- [ ] Access Problem
- [X] Possible future interest ?

⑮

- [X] Post Producer
- [ ] Producer
- [ ] Mineral Deposit
- [ ] Prospect
- [ ] Geologic Concept
- [ ] Geochem Anomaly
- [ ] Geophy Anomaly

⑯ Production

Commodity	Tons	Grade
Au:	105,000 oz.	

⑰ Reserves

[ ] Measured [ ] Estimated

Commodity	Tons	Grade
None Known		

⑱ Num. Drill Holes: Couple U.G.

Approx Total Footage

⑲ Excavations: Scattered old pits & underground Workings.

⑳ [ ] Spectro. Analysis Attached ㉑ [X] Assays Attached ㉒ [ ] Geochem Results Attached

Section IV Geologic Data

㉓ Commodity or Contained Metals: Gold

㉔ Ore Minerals-Major: Native gold Minor:

㉕ Host Rocks-Major: Metavolc. Metased. Minor:

㉖ Age of Host Rocks: Upper Jurassic and Cretaceous

㉗ Nature of Exposures: Typical Mother Lode with abundant thin cover, few outcrops, and the best exposures in old diggings.

㉘ Alteration: California Mine: No pervasive alteration; local weak bleaching and weak ankeritic (see attached sheet)

㉙ Total Extent: See alteration and ore occurrence.

㉚ Structure: Typical Mother Lode with N20°W strike and steep east dip.

㉛ Ore Occurrence: Gold ore occurred in small shoots in the quartz veins. Large ore shoots, as found to the north and south of this property have yet to be found, (see attached sheet)

㉜ Age of Mineralization:

㉝ Conclusions & Recommendations: The mines examined in this evaluation are along the most productive portion of the main Mother Lode, and most of the land about these mines is controlled by MLGMC. MLGMC's land is shown on the attached map as Amador United Gold Mine property, a company owned by MLGMC.

MLGMC wants $10,000 per month for three months while Asarco examines the propety and an agreement is signed. During the first two years Asarco would

(continued on attached page 3)

(For additional space use extra sheets)

28. (Continued)

alteration.

Italian-Peerless Mine: Strong ankerite-minor mariposite alteration of metavolcanic rock is 100' to locally 250' wide. To the north it tapers to an apparent width of less than 50' (see attached sketch map), and to the south it continues onto property controlled by Getty.

Centennial Mine: At sample sites K-84-300 to-305 and K-84-308 to -311 zones of strongly ankeritized metavolcanic ore 80' to 120' wide. To the south they disappear under extensive cover. To the north there is a large quartz outcrop (84-CS-1) and some ankerite altered slate.

31. (Continued)

nor were they the objective of this evaluation.

Both Asarco's and Mother Lode Gold Mines sampling was done in hopes of finding open pitable gold ore. None of the sampling has demonstrated a substantial gold anomaly.

At the Centennial Mine area, several samples contained weakly anomalous gold, 0.005 oz. to 0.01 oz. per ton(K-84-304,-305,-310, and -311); and the best sample was 0.035 Au over 15' (84-CS-2). Widths of this weakly anomalous gold appear to be 20' to 50'; and continuity, if any, along strike has yet to be established.

Along the California Vein, MLGMC obtained a few anomalous gold values and hypothesized a potential for 1.5 million tons. The MLGMC target is shown on the attached map. We were given a tour of the California vein target, but were denied permission to map and sample (they want $10,000/mo. for 3 months to do this).

Mineralization at MLGMC's California Vein target consists of scattered thin quartz veins in the wall rocks of the California Vein. All of the quartz veins are hosted by weakly bleached (often supergene), black shaley metasediment (slate). There are no metavolcanics rocks whose contacts with the metasediments often hosts gold ore. Locally the metasediment is weakly ankeritized (<5%), but there is no strong ankeritization, sericitization, or pyritization.

MLGMC's California Vein target is 75' wide and approximately 600' long. Its dimensions are based on a few widely spaced samples running 0.02 to 0.03 oz. Au and one sample of 0.116 oz. Au (see map) The gold values are probably carried in the quartz veinlets. It will take more sampling and a few trenches or drill holes to determine if there is any continuity of 0.025 oz. Au mineralization along the California Vein.

31. (Continued)

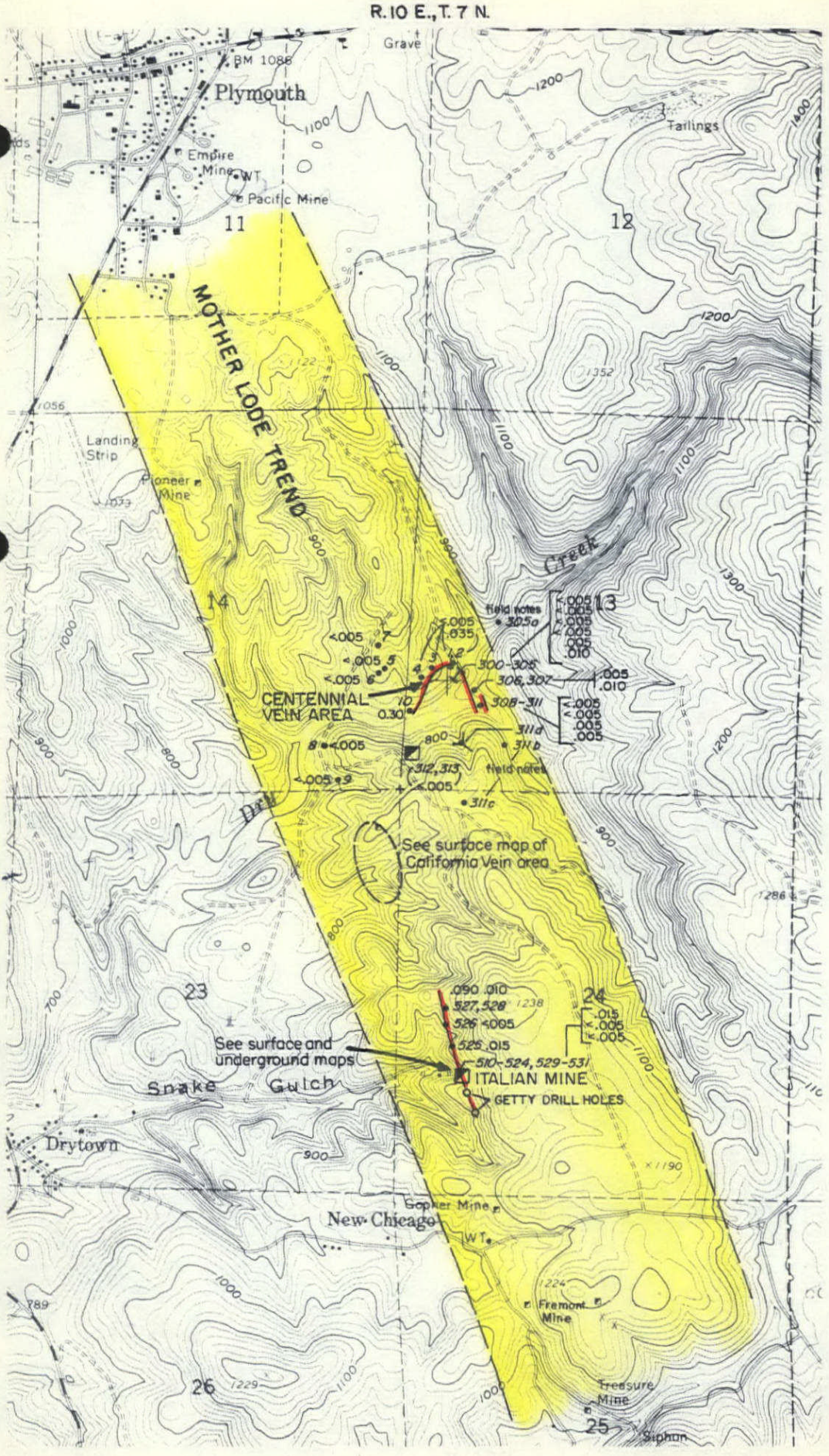
The best looking and best exposed, surface and underground, mineralization occurs at the Italian-Peerless Mine. As shown on the attached surface sketch map and underground map, strongly ankeritized-pyritized-quartz veined metavolcanic rock is in contact with underlying black, shaley metasediment (slate). The contact between the two contrasting lithologies dips about 75° to the east.

The widths of ankeritization and quartz veining are 100' to 250' in and above the underground workings. To the north the width tapers off dramatically, and to the south wide, strong ankeritization appears to continue across the nearby property boundary. Gold values in the ankerite altered metavolcanic rock and the quartz veining are shown on the 1" = 50' underground map, the 1" = 100' surface sketch map, and the 1" = 2000' map. The results of this sampling indicate a couple 30' to 50' wide zones of 0.02 to 0.06 oz. Au per ton are present in and above the underground workings (samples K-84-499 to -501, PE-1 to -7, PE-16, K-84-512, and K-84-520). Unfortunately, this sampling gives no indication of a substantial tonnage of open pitable ore.

33. (Continued)

pay MLGMC $10,000 per month. Asarco's work commitments would be $500,000 the first year and $1,000,000 the second year. At the end of the second year, Asarco would be required to purchase the underlying leased property from the owner for $3,500,000, to purchase neighboring properties for $1,500,000, and to build a mill. All of this would earn Asarco a 60% interest in the property with MLGMC retaining a 40% interest.

Considering the modest geologic potential, the presently poor economy, Asarco's exploration objectives, and MLGMC's unrealistic terms, no further work is recommended at this time. Additional samples should be taken north of 84-CS-1 and -2, at the MLGMC California Vein target, and as general reconnaissance (in addition to those taken and reported by MLGMC); but, this is not recommended until MLGMC terms are acceptable to Asarco.



NORTH

2000 FEET

Quartz veins and ankeritic alteration

Sampled by ASARCO Incorporated samples 1-10 and 300-313 are 84-CS series, samples 510-531 are K-84 series.

Gold values in oz/ton

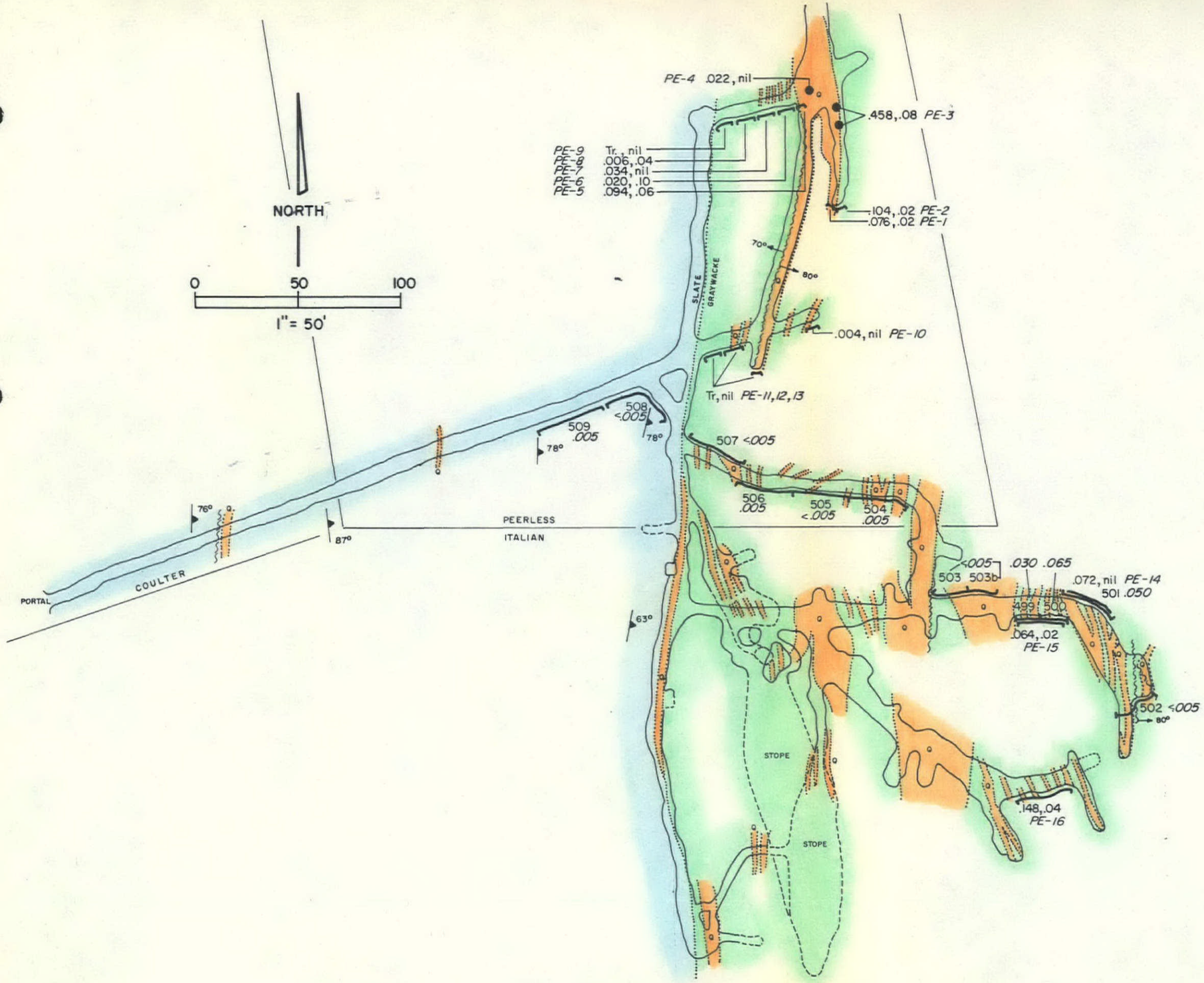
ASARCO Incorporated

CALIFORNIA-ITALIAN MINES

AMADOR CO., CALIF.

H.G.K.& G.J.S. 10 & 11, 1984

mn 6091 dam 11-84



EXPLANATION

MINE MAP, GEOLOGY, AND PE SERIES OF SAMPLES BY D. MATHEWSON AND M. BURNS OF M L G M C (1984). SAMPLES SHOWN WITH GOLD, SILVER ASSAYS IN OZ / TON.

K-84 499–509 SERIES OF SAMPLES BY G.J. STATHIS AND H.G. KREIS OF ASARCO INC. (1984) (K-84 PREFIX OMITTED)

SLATE

ANDESITIC METAVOLCANIC (CALLED GRAYWACKE BY MATHEWSON AND BURNS)

QUARTZ VEINS AND STRINGERS

FAULT

NOTE: WATER IN MINE IS UP TO THREE FEET DEEP

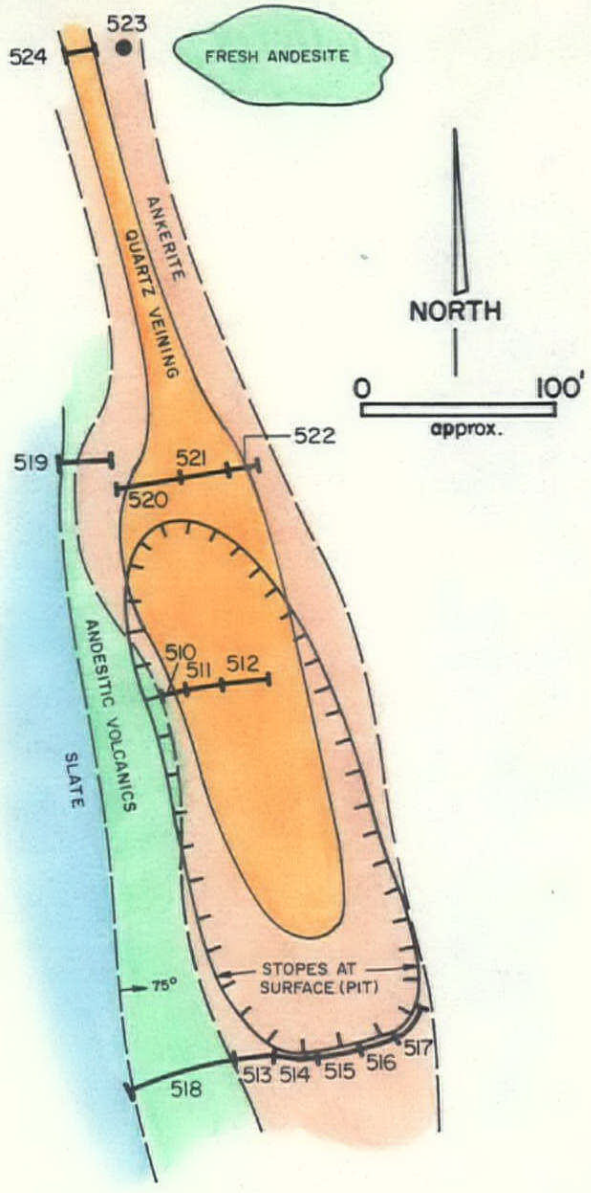
ASARCO Incorporated

ITALIAN-PEERLESS MINE UNDERGROUND WORKINGS

AMADOR COUNTY, CALIF.

H.G.K.& G.J.S. **NOVEMBER, 1984**

mn 6089 dam



EXPLANATION

SKETCH MAP TO SHOW SAMPLE LOCATION; NOT TO SCALE.

- QUARTZ VEINING AND SILICIFICATION
- ANKERITE ALTERED ANDESITIC VOLCANICS
- WEAKLY ALTERED AND FRESH ANDESITIC VOLCANICS
- SLATE
- GEOCHEMICAL SAMPLE, K-84 SERIES – PREFIX NOT USED

LOCATED IN THE SW/4 SEC 24, T7N, R10E

SAMPLE	GOLD IN oz/ton
510	< 0.005
511	< 0.005
512	0.045
513	< 0.005
514	0.005
515	< 0.005
516	< 0.005
517	< 0.005
518	0.005
519	< 0.005
520	0.020
521	< 0.005
522	< 0.005
523	< 0.005
524	< 0.005

ASARCO Incorporated

ITALIAN-PEERLESS MINE RECONNAISSANCE SKETCH MAP

AMADOR COUNTY, CALIF.

H.G.KREIS **OCTOBER, 1984**

mn6090 dam 11-84

-WLK-

(Indicate property name and location)
Copperopolis
Castle Creek district
Yavapai Co. AZ

ASARCO EXPLORATION RECORD
(Attached Highway-Type Location Map)

FIELD EXAMINATION /x / LITERATURE SEARCH / /
ASARCO FILE /x / SUBMITTAL /x/

==========

SECTION 1: GENERAL INDEXING

NAME OF PROPERTY OR AREA: Copperopolis
MINING DISTRICT: Castle Creek
COUNTY:Yavapai
STATE OR PROVINCE: AZ
LATITUDE:34^0 5'
LONGITUDE:112^0 27' 30"
FILE:
AMS SHEET: Prescott
USGS QUADRANGLE: Copperopolis 7.5'
TOWNSHIP & RANGE: T9N, R2W
SECTION:33,34
EXAMINED BY: MA Miller
OFFICE: SWED
FIELD DAYS: 4
DATE ENTERED:3/12/92

==========

SECTION 2: SOURCES OF INFORMATION

REFERENCES: Asarco Company files
ADMR Files

==========

SECTION 3: APPRAISAL

CONCLUSIONS: Action Now / /; Too Low Grade /x/; Too Small / /;
Ownership Problem / /; Access Problem / /;
Other / /
BASIS: Geologic Concept /x /; Geochemical Anomaly / /;
Geophysical Anomaly / /; Other / /
SUPPORT DATA: Spectrographic Analysis Attached / /; Assays

Attached / x/; Geochemical Results Attached /x /;
Geophysical Results Attached / /; Geologic Map
Attached / x/; Other / /

HISTORY: Producer / /; Past Producer /x/; Prospect /x /;
Mineral Deposit / /; Mineral Occurrence / /

PRODUCTION (Commodity, Tons, Grade): ?

RESERVES (Commodity, Tons, Grade): Measured / /; Estimated /x / 5-10 million ton potential

NUMBER OF DRILL HOLES:1

APPROXIMATE TOTAL FOOTAGE: 650'

EXCAVATIONS: Several small pits, several deep shafts(>100')

==========

SECTION 4: GEOLOGIC DATA

COMMODITY: Au,Cu

ORE MINERALS (Major and Minor): Co oxides(Chryscolla, Malachite)

HOST ROCKS (Major and Minor): fg intrusive dike ofr sill, Qz porphry, volcanics?

AGES OF HOST ROCKS: Tertiary?

NATURE OF EXPOSURES: Major zone is +2000'long x up to 200' wide.

ALTERATION: Strong silicification assoc with zone , also sericite, loc. weak argillic alt within area of mineralized srtucture

TOTAL EXTENT OF ALTERATION: 50' halo around mineralized zone, and along strike length.

STRUCTURE: N 70^0 W to E-W moderate to high angle shear or contact zone

ORE OCCURRENCE: Seemingly associated with specularite and copper oxides in the minersalized zone

AGE OF MINERALIZATION Tert?:

CONCLUSIONS AND RECOMMENDATIONS: The nature and extent of the structure suggests the possibility of a mineral resource of 5- 10 million tons with a w/o ratio of 2-5/1 depending upon the depth of the pit. This certainly suggests a viable target providing the samples show gold in assay. Assays are pending. **3/25/92**: Assays have been received from the prospect sampling. Based upon the results of the samples it appears that there is very limited gold potential. No further work is recommended.

AUTHOR'S SIGNATURE: [signature]

DATE: 3/27/92

COPPEROPOLIS Cu/Au
CASTLE CREEK DISTRICT, YAVAPAI CO, AZ
(Au in ppb,Cu, Pb in ppm or %)
Date of report: 3/26/92

CP-1 Granitic, or volcanic; difficult to tell. Abu limonite, hem spec hem along high angle fractures. Shear zone is striking N 70 W cut by main attitude of N 35 E. 10' rock chip sample taken in small open cut. 214,1483,193

CP-2 Granitic unit, very stng oxidation. Alteration as in CP-1 lsee outcrop more in place float. 30' random chip across float/ outcrop. 14,924,37.

CP-3 Granitic? or felsic unit in contact with mafic dike both strongly oxidized. Cu Ox seen on dump but little seen in face. Strike is about E-W 70 S. Small open cut. sample rep. 10' horizontal cut. 65,496,24

CP-4 Granitic? highly oxidized, More silic bands, less spec. little CuOx on dump. caved shaft where the structure becomes much thinner +5'. Sample rep. true thickness of structure. 695,2464,25

CP-5 Same general rock type but zone is south of main zone as described. litle CuOx. random chip across scattered oc within a 100' circle. 8,5145,69

CP-6,7,8 FG granitic looking rock, taken across top of the hill. Strong oxid, abundant spec hem, limonite and loc CuOx as chryscolla. Samples represent a total of 75' of outcrop. 6. 93,4405,42
7. 69,1706,31
8. 75,3532,55

CP-9 Quartz porphry? Highly altered, argillic? no limonite or other oxidation. Taken in the end of 75' adit. Main structure N 5 E 70 NW. Dump contains abu malachite, chryscolla. 22,310,13

CP-10 Detailed on attached map. BEST ZONE 75-100' IN MAIN STRUCTURE RAN 1504 ppb Au. OTHERS < 52ppb Au

CP-11 Same fg granitic unit, strongly oxidized, abu spec hem, wk to mod quartz stockwork, wk CuOx. Rep. 40' of exposed oc taken in two segments. 0-15', 15-40'. 441, 1.16%,139; 174,2370,297

CP-12,13 Fg granitic unit on north end, contact w/ andesitic unaltered volcanics on south end. Zone appears to be 200' wide judging by the outcrop and float Sampled in two places on the north and south extremities. Possible barite seen on southern sample. 12. 28,570,4060
13. 205,2363,49

CP-14 Fg unit looks like a granitic gneiss, three samples taken in this pit

from top to bottom; 0-6, 6-8, 8-10', 6" lead vein seen in pit, prob reason for pit. 19,164,5460; 8,382,8610; 16,151,5660
CP-15 Caved adit, appears to have been driven along a fault zone, fg unit as seen before, possib lead carbonate, Abu silica, spec veins and veinlets. Prominent "bedding is N 30 E, 45 N, structure xcuts regional attitude n 70 W, 50 SW. 31,836,3090

CP-16 same hematitic shear zone, abu silica, specularite, little Cu Ox. same attitde as past reported. Sample rep. 50' of area not all outcrop; two outcrops 10- 15' wide. 420,1546,75

ROCK SAMPLE #'S CP 10 0-200'
(TAKEN IN 25' INCREMENTS)

TRAVERSE THRU ALTERED SHEAR ZONE
LOOKING GENERALLY WEST.

200	175	150	125	100	75	50	25	0
MINOR OXIDES Pyt MOSTLY ~~[illegible]~~ ~~[illegible]~~ ~~[illegible]~~ 200'	LESS SPECULARITE DOC IN DEGREE OXIDATION	LOC N 30°E V. Limonite/Hm FRACTURES FROM N60°W FRACTURES,	SAME FG Rocks. STRONG OXID. Loc Pegmatite	SMALL MOT BRT 75-100' Loc Spec Vlts C" Rock is FGCMT Loc N60°W 60°SW STRUCTURE w/ TRACES of CuOx (CHRYSOCOLLA) 1' WIDE FAZO N60°W 60°SW w/ Spec MTX BX	SAME AS 25-50' But SMALL BX/ FAULT ZONE V. PROMINENT N 70°W, 80°SW FRACTURE SET. w/ QZ + Spec. MINOR STOCKWORK	SAME PEG UNIT LARGE FGMX X/S MOD → STRG OXID. PROMINENT N 70°W V. FRACTURES. USU. w/ QZ + Spec HEM.	GRANITIC, SLT PEGMATITIC, WC → MOD OXIDATION FGMX X-CUTTING SPEC UNS GRADES INTO L FG LAMINAR UNIT → 3. ATTITUDE FGCMT N 40°E 70°NW SEVERAL FLAT FAULTS N 30°W 45°SW	

← DECREASING SPECULARITE (OVERALL OXIDATION) | AREA OF GREATEST SPECULARITE VN/STOCKWORK | DECREASING SPECULARITE (OVERALL OXIDATION) →

ASSAY VALUES IN PPB's Au	32	33	52	191	1504	11	33	5

MM
No Scale 1" = 25'
3/12/92

PRELIMINARY REPORT

ASARCO

MAR 2 6 1992

SW Exploration

REPORT : SP 016169

Sample	Au ppb	Au(R) ppb	Cu ppm	Pb ppm
CP-1	212	214	1483	193
CP-2	14		924	37
CP-3	65		496	24
CP-4	629	695	2464	25
CP-5	8	<5	5145	69
CP-6	93		4405	42
CP-7	69		1706	31
CP-8	75		3253	55
CP-9	22		310	13
CP-10 0-25	51		1532	23
CP-10 25-50	33		513	14
CP-10 50-75	11		1610	19
CP-10 75-100	1360	1504	1.10%	139
CP-10 100-125	196	191	5021	92
CP-10 125-150	52		1110	24
CP-10 150-175	33		966	14
CP-10 175-200	32		514	19
CP-11 0-15	441		1.16%	119
CP-11 15-40	174		2370	297
CP-12 0-30	28		570	4060
CP-13	205	222	2363	49
CP-14 0-6	19		164	5670
CP-14 6-8	8		382	8610
CP-14 8-10	16	21	151	5660
CP-15	31		836	3090

Please refer to the cover sheet for further analysis details.

PRELIMINARY REPORT

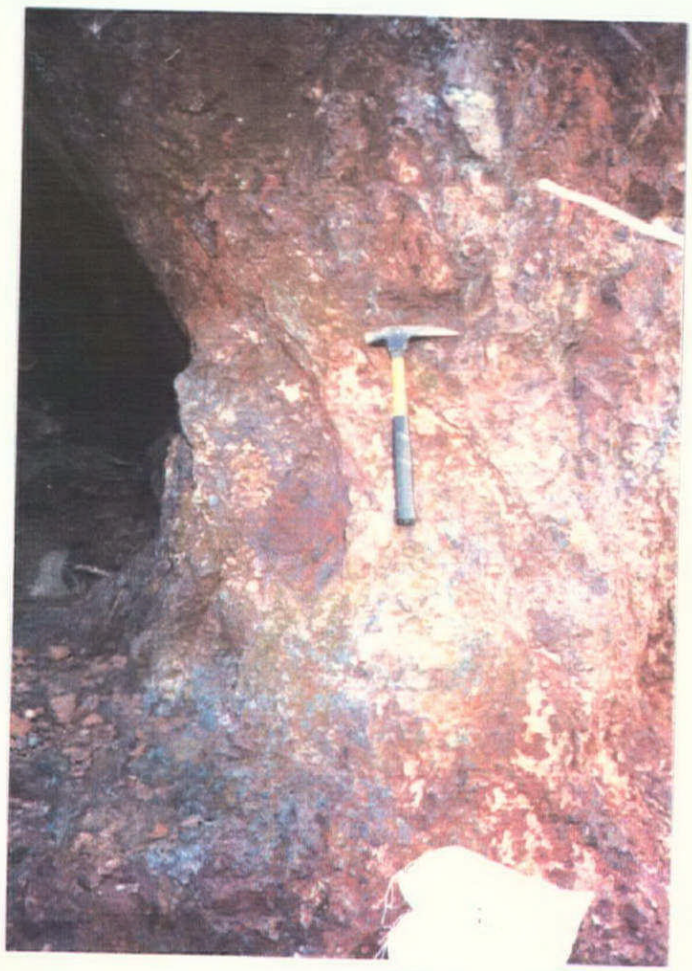
ASARCO Incorporated
MAR 26 1992
SW Exploration

REPORT : SP 016169

Sample	Au ppb	Au(R) ppb	Cu ppm	Pb ppm
CP-16	388	420	1546	75

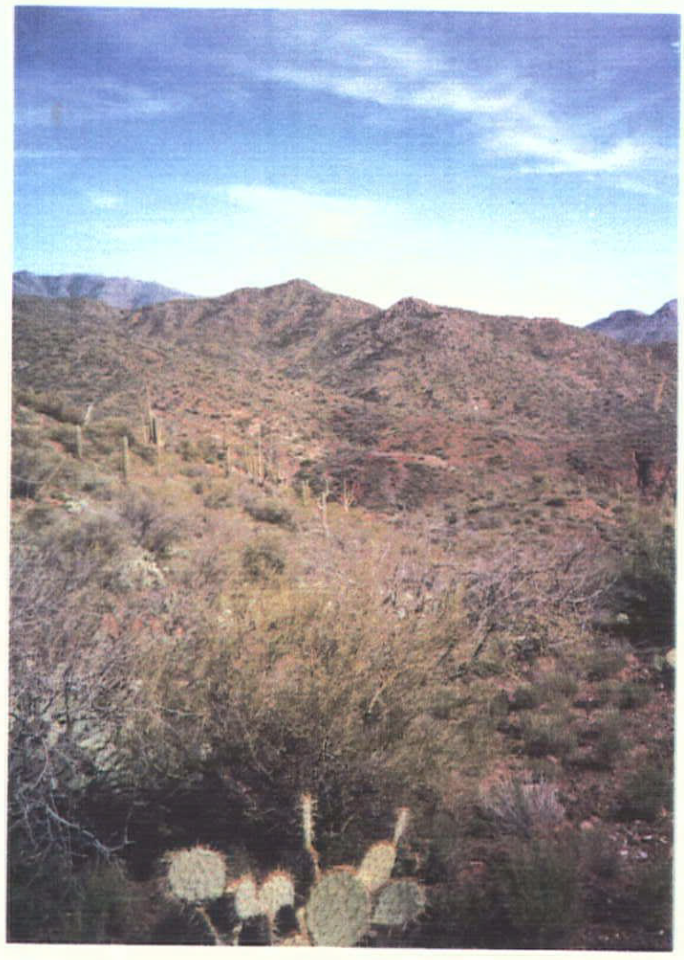
Please refer to the cover sheet for further analysis details.

Sample #'s CP 1, 6, 7, 8 Looking N across zone

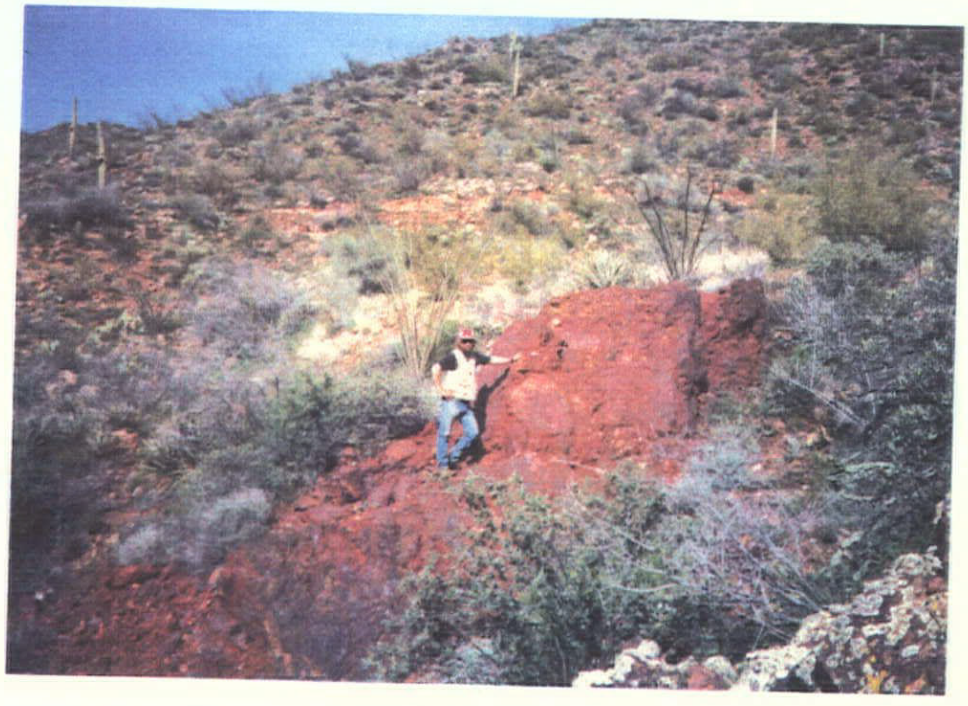


[illegible] Specimen, [illegible]
CP 10, [illegible]

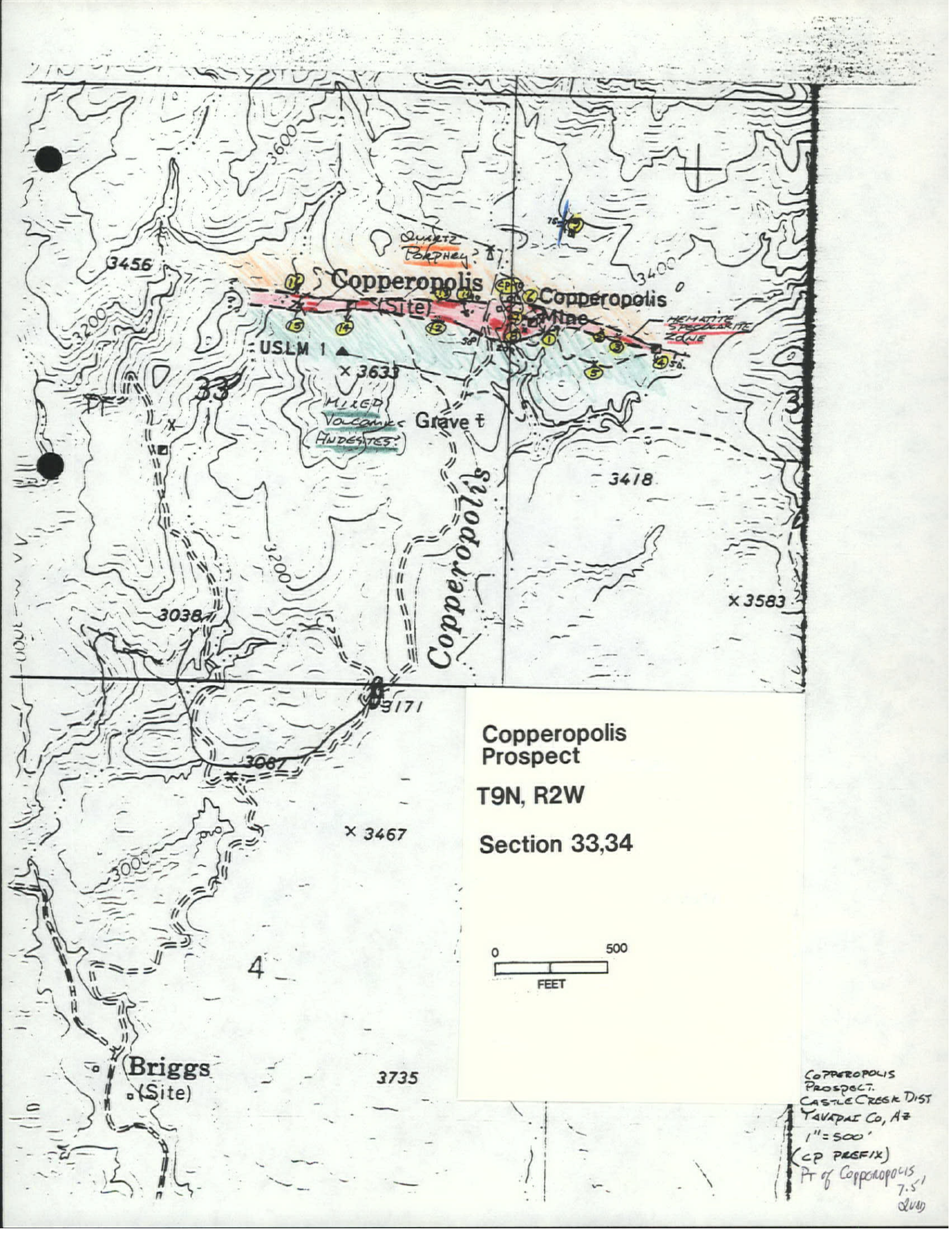
Specimen Fault Fracture By
Hammer Head, CP 10, [illegible]



Copperopolis Prospect
Looking E alg strike vein Hematite
Cover showing

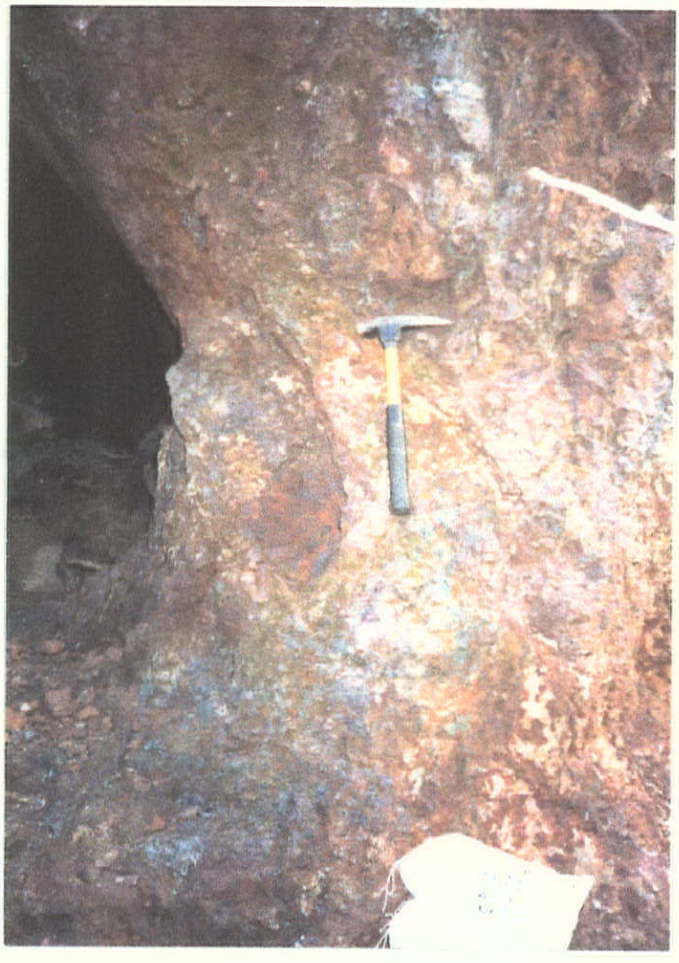


Typical [illegible] of Hematite/Specularite [illegible]
[illegible]

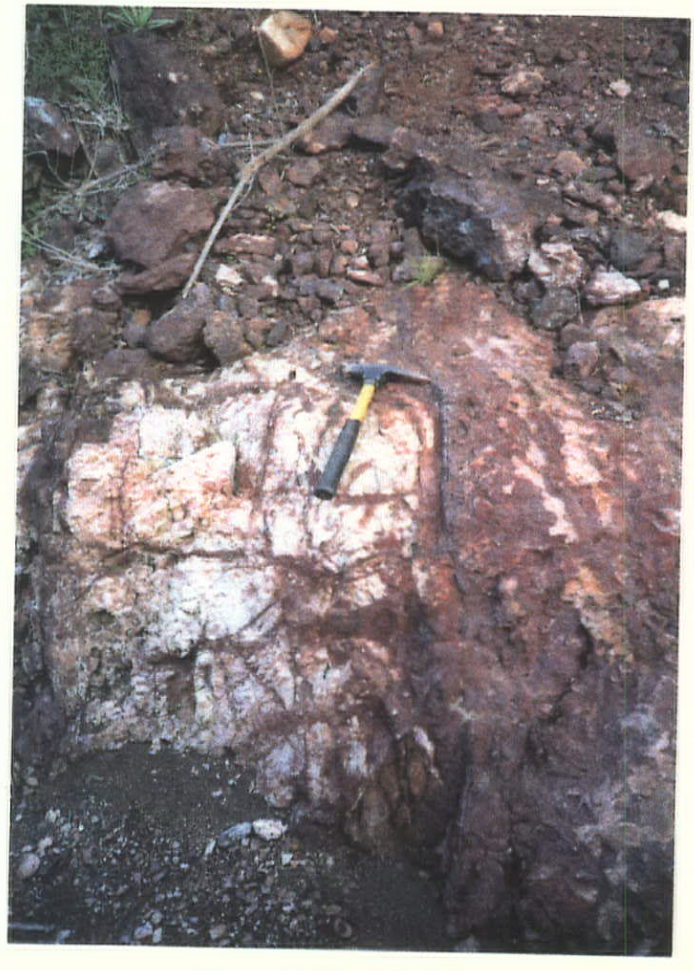


Copperopolis Prospect. Castle Creek Dist Yavapai Co, Az 1" = 500' (CP prefix) Pt of Copperopolis 7.5' Quad

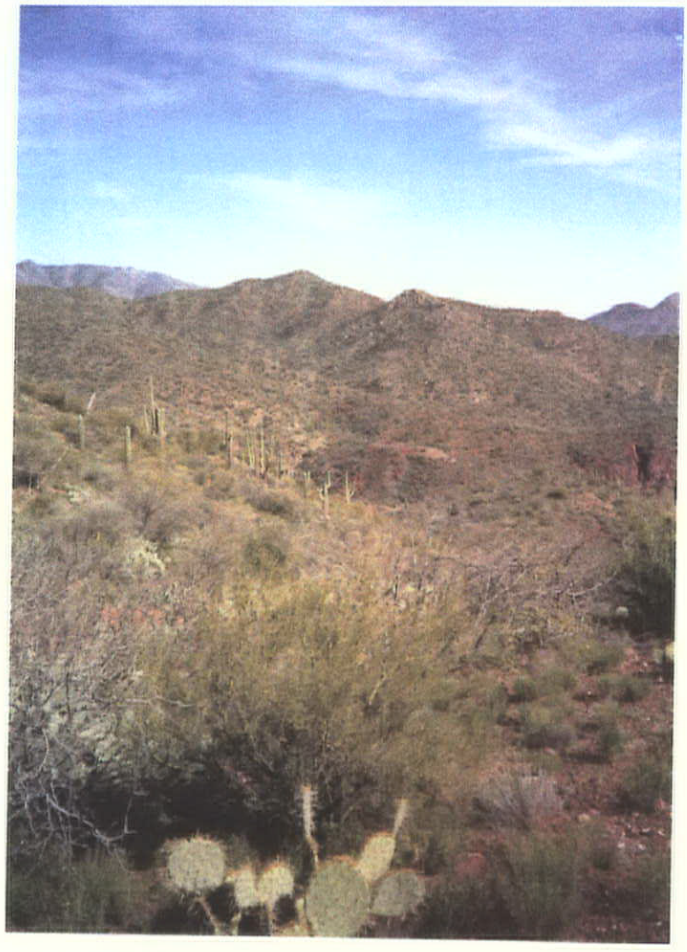
Sample No's 6,7,8 looking North across zone



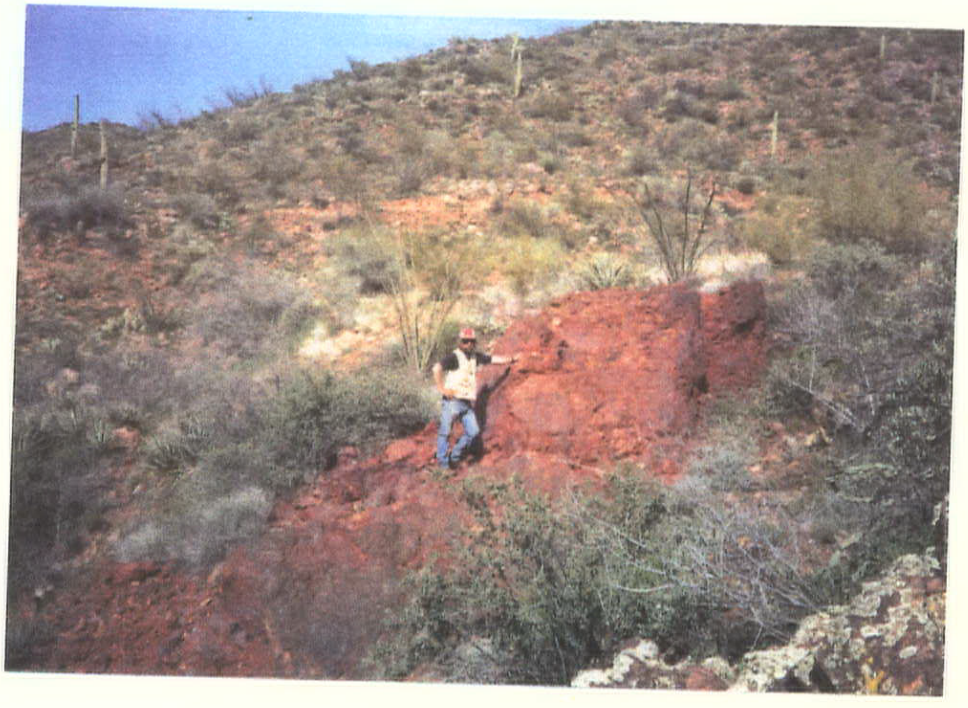
Quartz Specularite Veins
CP-10, 75-100'



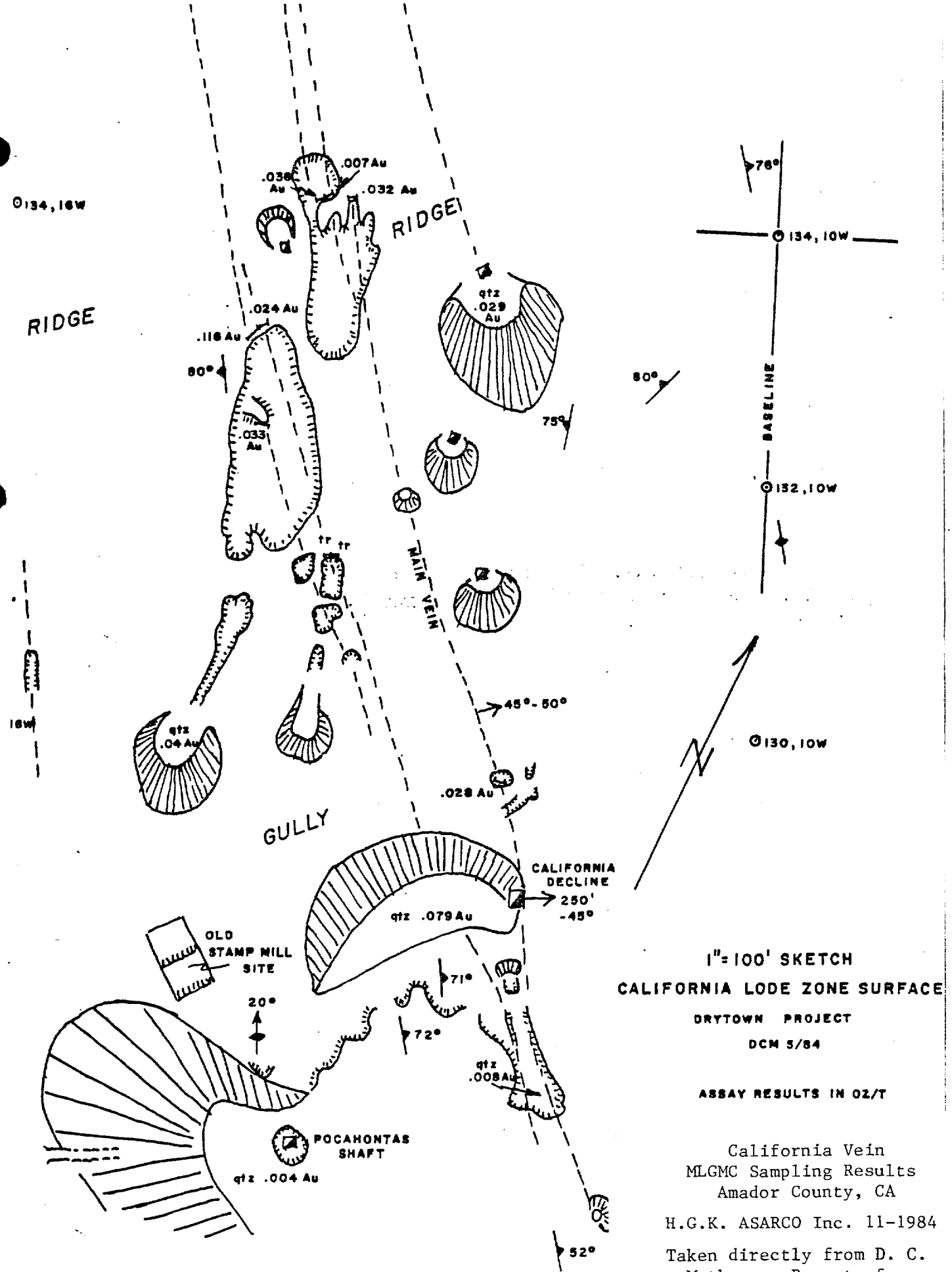
Specularite filled fracture
CP-10, 75-100'



Copperopolis Prospect
looking east along strike



Typical outcrop of Hematite/Specularite zone



California Vein
MLGMC Sampling Results
Amador County, CA

H.G.K. ASARCO Inc. 11-1984

Taken directly from D. C. Mathewson Report of 5-31-1984.

H.G.Kreis
10/31/84

ITALIAN-PEERLESS MINE

(Underground Samples taken by G.J.S. and H.G.K.)

K-84-499 Sample. Check of PE-15 of MLGMC. Taken on west half PE-15. Sample of ankerite altered (unoxid.) metavolcanic (gray colored, very hard and difficult to sample) with 3% pyrite, arsenopyrite (smell), and 15% quartz vein stockwork. *.030 opt Au*

-500 Sampled east half of PE-15. Same geology as #499 but with 20-25% quartz veining (approx. 15% quartz taken in sample). *.065 opt Au*

-501 Sample site same as PE-14 of MLGMC. Sample of dominantly quartz with 30-50% altered metavolcanic (same as in #499). Next to, immediately under, and part of large quartz vein structure. *.050 opt Au*

-502 Sample, 35' length. Ankerite altered (unoxid.) metavolc. with 2-7% quartz vein and 1-3% diss. pyrite. Taken at end of drift approx. 30' from PE-14. *<.005 opt Au*

Remark: The graywacke mapped by D. Mathewson and M. Burns of MLGMC (1984) is ankerite altered metavolcanic (basaltic andesite).

-503a Sample of solid, massive, white bull quartz vein with local minor (<1%) pyrite. 20' length. Taken by GJS. *<.005 opt Au*

-503b Sample. Same geology as 503a. 20' length. *<.005 opt Au*

-504 Sample of 8' massive quartz and strongly ankerite altered (unoxid.) metavolc. with 1% pyrite. 25' length. All of sample is within 10' of massive qtz. vn. Taken by GJS. *.005 opt Au*

-505 Sample of strongly ankerite altered (unoxid.) metavolc. with 5% quartz veins and v. weak mariposite. 25' length. *<.005 opt Au*

-506 Sample of 5' quartz vein and rest is strongly ankeritized (unoxid.) metavolc. 25' length. Sampled by GJS. *.005 opt Au*

-507 Sample of strongly ankeritized metavolc. with 15-20% quartz veinlets and v. weak mariposite. 25' length. *<.005 opt Au*

-508 Sample of black carbonaceous slate, steeply dipping to east. Hanging wall of ankeritized-quartz veined metavolc. 45' length. *<.005 opt Au*

-509 Sample of black carbonaceous slate. 35' length. *<.005 opt Au*

H.G.Kreis
11/1/84

ITALIAN-PEERLESS MINE

(Surface Samples and Underground Core Samples taken by H.G.K.)

Remark: Claim post for Orwell Claim above (300') portal of Italian-Peerless workings.

K-84-510 Bottom of glory hole. Sample taken in immediate FW (west side) of thick quartz vein structure. Sample of 8' thick strongly ankeritized (oxidized) metavolc. with ≤3% quartz veining. Continuing to west is strongly clay altered, crumbly metavolc. which was not sampled. Appox. 50' to 100' further to west from #510 is an outcrop of black graphitic slate. Found another outcrop of slate within 30' of metavolc. at #510 area. *<.005 opt Au*

-511 Bottom of glory hole. Sampled 20' (horizontal) of vein continuing east of #510. Quartz vein with sheeted inclusions of strongly ankeritized metavolcanic. Sheeted structure and apparent dip of vein is 75-90° east. *<.005 opt Au*

-512 Bottom of glory hole. Sampled 20' (horiz.) of vein continuing east of #511. Sample of hard, siliceous, qtz veined metavolc.; contains minor amounts of metavolc. with strong ankeritization and mostly massive white bull quartz. *.045 opt Au*

-513 South end of glory hole. Sample taken at west side of an E-W face; just outside west edge of glory hole. Sample length 15-20'. Strongly ankeritized (oxidized) metavolcanic with <1% quartz veining. Competitive flagging, "≈25N, 1090E." *<.005 opt Au*

-514 Continuing east from #513 along E-W face. 20' sample of strongly ankeritized (oxidized) metavolc. with 1' quartz vein. *.005 opt Au*

-515 Continuing east from #514. 20' sample of strongly ankeritized (oxid.) metavolc. *<.005 opt Au*

-516 Continuing east from #515. 20' sample of strongly ankeritized (oxid.) metavolc. with 1% quartz veins. *<.005 opt Au*

-517 Continuing east from #516. 20' sample of weathered, clayey, soft, volcaniclastic rock with local minor ankerite. *<.005 opt Au*

Remark: The east-west face of samples #513 to #517 has only a 1' thick quartz vein and a few quartz stringers; i.e., the massive quartz veining in the glory hole does not pass through the south face of the glory hole although it could pass under it.

K-84-518 Continuing west of #513 for 50'. There is only 10% outcrop exposure (in prospect pits). Sample of variably altered metavolc. Approx. 3%-10% to locally 20% diss. goeth. after mafics, pyrite, and local ankerite. No evidence of substantial quartz veins. *.005 opt Au*

-519 Sampled 30', E-W. Sample of minor bleached and sericitized shale and mostly strongly ankerite (ox. & unox.) altered metavolc. with minor mariposite. *<.005 opt Au*

-520 Offset 15' south of #519 and continuing 25' east. Sampled large blocks of white quartz vein (disturbed by underground mining). *.020 opt Au*

-521 Continuing east from #520 for 25'. Massive white bull quartz vein. *<.005 opt Au*

-522 Continuing east from #521 for 15'. Massive white bull quartz veins. The area is covered but appears to be east edge of the quartz vein. *<.005 opt Au*

-523 Sample, 5' wide, outcrop of strongly ankeritized metavolc. with ≤1% quartz veinlets. Outcrop is 10' from quartz vein (#524). *<.005 opt Au*

-524 Sample of white bull quartz vein, outcrop and slumped boulders, covered west contact, thickness is between 6' and 30'. *<.005 opt Au*

-525 Sample off large dump. Strongly ankeritized (unoxid.) metavolc. with 2% pyrite and 5% white quartz veinlets. *.015 opt Au*

-526 Sample of a cluster of small outcrops 50' east of small quartz vein outcrop. Sample site is halfway between large dumps on north (#527) and south (#525). Sample of strongly ankeritized (ox. and mostly unoxid.) metavolc. In the area of #526 the quartz vein is ≤10' thick and the width of strong ankeritization is something like 60' <u>or less</u> judging from rare outcrops and the float. The quartz vein outcrop appears to be within 15' of weakly ankeritized slate. *<.005 opt Au*

-527 Sample of 15' wide outcrop straddling the slate-metavolc. contact. Slate is bleached and sericitized(?) and metavolc. is tan, crumbly and clayey (no strong ankerite) with weak to mod. FeOx stain. Approx. 1'-5' wide zone of quartz more or less at contact between two rock types. Sample taken at collar of caved, inclined shaft. 30' to east is strongly weathered, clayey metavolc. and 120' to east is fresh metavolc. *.090 opt Au*

-528 Sample of dump at #527. Took more strongly ankeritized (5-10%) slate and more strongly quartz veined slate. Nearly all dump material is weakly ankerite altered black carbonaceous slate and minor white quartz. *.010 opt Au*

K-84-529	Sample of AX core found in workings (Italian-Peerless) between samples #501 and #502. Noted horizontal holes to east and west. Sample: cobbed out white bull quartz, approx. 2 lbs. *.015 opt Au*
-530	Sample of core at same site as #529. Cobbed out weak to strongly ankeritized (unoxid.) metavolc., approx. 4 lbs. *<.005 opt Au*
-531	Sample of core at same site as #529. Cobbed out fresh to nearly fresh metavolc., approx. 2 lbs. *<.005 opt Au*

G.J.Stathis
1984

CS Sample Series

84-CS- 1 Sampled 35' wide zone of bull qtz. Vert. Locally fract. with hem. & goeth stn. Overall <1% leached sulfide (pyrite). Locally 2-3% plus tr. of unknown gray sulfide (galena?). *<.005 opt Au*

- 2 Trench, N60°E, 20' long trench. Sampled vert. slate for 15'. 1-2 vol. % dissem. leached py cubes. Light to mod. goeth. stn. This sample site 25' NW of #1 site. *.035 opt Au*

- 3 Bull qtz vein as #1, approx. N-NW trending. Approx 10' wide sample collected E-W from west edge of vein. 1-3 vol. % leached sulfide. Some ankerite locally/sulfide. *<.005 opt Au*

- 4 Outcrop, 5' diameter. Moderately ankeritized meta-andesite "spotted" ankerite after mafic? mineral sites. Couple of parallel ¼-½" wide, qtz vnlts N70°W, 60°SW dip. *<.005 opt Au*

- 5 Quartz vein 3' wide N60°E, vert. 75' NE of shaft. 1-3 vol. % leached sulfide & light ankerite. Mod. goeth. & hem. stn. *<.005 opt Au*

- 6 Dump grab. <100' deep shaft. Unmin. carbn. slate. *<.005 opt Au*

- 7 Bull qtz vein, 15' diameter outcrop. Fractured. Light goeth. & hem. stn. <1 vol. % leached sulfide. *<.005 opt Au*

- 8 Bull qtz vein outcrop plus float in 10' x 25' area. <1% leached sulfide. *<.005 opt Au*

- 9 Adit portal. Carbn. slate N20°W, vert. sample 10' wide zone across strike. *<.005 opt Au*

-10 Trench N20°W, sampled qtz vein exposed on southwest wall. 1-2% dissem., leached py. vein fracture/light goeth stn. *.030 opt Au*

H.G.Kreis
Sept. 1984

CALIFORNIA-SEATON

Amador County, California

84-CS-300 Sample qtz vein, 1.5' thick; N28°E, 70E; small outcrop of vein (1.5' by 4' long) at base of 6' high alt. metavolc. outcrop in creek bed. Hosted in ankeritized metavolc. of the following samples. *<.005 opt Au*

-301 Start of N25°E, 180' long traverse diagonally across N20°W striking ankeritized-qtz veined metavolc. (andesitic type) with near vert. dip. Some N20°E foliation on south side creek. Sample of metavolc. (and.) with 0 to 30% ankerite (oxidized) and 3-5%, 1/8"-2" thick white quartz veins; 30' long sample. *<.005 opt Au*

-302 Continuing east of #301. Approx. 50% more ank. (oxidized) and qtz vns as in #301. Sample 40' long. *<.005 opt Au*

-303 Continuing east of #302. Same geol. as #302. Sample #300 is in approx. middle area of this sample. 40' long sample. *<.005 opt Au*

-304 Continuing east of #303 to west edge of the strongly shear foliated rock of #305. Same geol. as #302 but with more ankerite. 40' length of sample. *.005 opt Au*

-305 Continuing east of #304. Sample of strongly shear foliated apparent metavolc. with 0-5% dissem. pyrite (mostly oxidized) and 0-2% ankerite (oxidized) and 1-2% qtz veining. 30' long sample. *.010 opt Au*

-305a No sample. From #305 to 305a is typical pale green tuffaceous appearing metavolc. with 0-2% dissem sulf. (same as west of Jackson). Rare qtz veins (up to 1" in thickness) and rare thin ankerite selvage like zones.

-306 5' thick white bull quartz vein, massive; N10°W, 70°E; sample of vein. H. W. outcrops 30' from vein are weathered but not ankeritized or signif. qtz. veined. In creek just to NNW vein is only 1' thick. *.005 opt Au*

-307 Sample of dump at #306. Sample 80% black shaley schist with 1-10% dissem. ankerite and, also, 20% qtz vein material with trace of ankerite. *.010 opt Au*

Remark: Samples #308 to #311 are a traverse in E-W drainage, starting on west.

-308 Sample of ≥8' thick quartz vein; no H.W. or F.W. outcrops. Possible shallow west dip. 40' to east, over cover, is #309. *<.005 opt Au*

-309 Sample of ankeritized (≃ 5-15%; oxid.) metavolc. Sampled entire 10' of outcrop. *<.005 opt Au*

-310 Sample #310 is 40' E of #309, across cover. Sample of schist with 5-25% ankerite and 1-2% qtz veins. 25' long sample; east edge of sample is qtz vein of #311. *.005 opt Au*

-311 Quartz vein, white with weak iron oxid. stain, and a few inclusions of wall rock. 20' long sample is probably close to true horizontal thickness. 30' of cover to east then a 20' wide outcrop of weakly ankeritized metavolc. *.005 opt Au*

-311b Small outcrop in old cut is schist with rare qtz stringers. Outcrop on top of ridge above 311b is unmineralized.

-311c Small prospect pits; bleached, slightly clay alt. metavolc. Albite vein float 400' to NW. Albite stringers in metavolc. 300' to east.

-311d Dump of black schist with weak iron stain;rare quartz. No sample.

-312 Rather large dump of shaft. Sample weakly ankeritized black shaley schist (carbonaceous). *<.005 opt Au*

-313 Sample off same dump as 312. White quartz with local minor ankerite. *<.005 opt Au*

D.C. MATHEWSON
MOTHER LODE GMC
5-31-1984

1/3

APPENDIX I

CALIFORNIA/MARYLAND SAMPLE DESCRIPTIONS

C-CA-1 representative chip sample across 4' of stringered black phyllite near the accessible end of the California tunnel.

C-CA-2 grab of loose quartz vein material from the floor of the drift. appears to be fairly clean white quartz.

C-CA-3 44" chip sample across a stringered quartz zone in carbonaceous phyllite at approximately the 400' mark in the California tunnel.

C-CA-4 5½' representative chip across a stringered and veined zone in black phyllite.

C-MA 38-41.5 quartz stringered zone in phyllitic wacke. about 25% of the sample is quartz mostly as 1"-2" stringers parallel to foliation.

C-MA 51.5-52.5 representative chip sample across a 1' thick quartz stringered zone consisting of 2-3 1" quartz stringers.

C-MA 83-86 6"-1' vein stringered in phyllitic wacke. total stringered zone with additional 2-3 2"-3" stringers is 3' thick.

C-MA 94-103 9' thick sampled zone consisting of quartz up to massive white quartz veining stringered and veined in phyllitic wacke. about 50% of the sample is quartz.

C-MA 103-111 massive white quartz vein 8' thick at sampled location. vein is steeply dipping, but footwall contact with carbonaceous phyllite dips approx. 52° west. vein is clean, barren-looking except for small amounts of phyllite inclusions.

C-MA 111-114 small amount of quartz stringered in black, carbonaceous shale on the footwall side of the vein at the end of the tunnel prospect.

APPENDIX II

PEERLESS/ITALIAN SAMPLE DESCRIPTIONS

C-PE-1 24" representative chip across a hangingwall portion of the quartz vein at the end of the Peerless.

C-PE-2 sample across 44" of adjacent stringered hangingwall with approximately 10% quartz stringer content. wallrock is schistose micaceous arenite. the attitude of the quartz stringers suggests the east wall is down relative to the west wall.

C-PE-3 grab sample of quartz vein material on floor of drift. sample spalled and caved quartz vein exposed but too risky to sample in drift. this is hangingwall side of locally massive quartz vein.

C-PE-4 rough 4' chip sample from massive white quartz vein on footwall side of large vein. vein between hanging and footwall sides is very massive and blocky.

C-PE-5 rough chip sample across 70" of quartz stringered/veined footwall of massive vein. 30% quartz in sample. host rocks are pyritic and maripositic.

C-PE-6 10' rough chip across stringered pyritic, maripositic footwall. contains approx. 5% quartz.

C-PE-7 10' rough chip of 10% quartz stringered pyritic, maripositic schist.

C-PE-8 10' rough chip sample across 15% quartz stringered schist.

C-PE-9 10' rough chip of schist almost to black phyllite contact. rock is very siliceous and has less than 5% quartz stringers.

C-PE-10 10' chip which includes 3' quartz vein and 7' of stringered, siliceous, maripositic, pyritic footwall adjacent to vein. some quartz stringers in wall. this locality was sampled by someone else. rock is very hard and difficult to get a good sample.

C-PE-11 representative sample from 3-4' circle size zone at the end of the drift below a raise. sample includes portion of massive white quartz and quartz stringered schist of footwall. sample across 2.5'.

C-PE-12 10' representative chip from wall adjacent to 3' massive white quartz. wall is stringered and veined with quartz. host is pyritic and maripositic schist adjacent to black pyritic phyllite. sample 13 is between sample 12 and footwall contact.

C-PE-13 sample across 6' of stringered, altered wacke and 4' of carbonaceous phyllite.

C-PE-14 rough chip across 30' of veined, stringered wall on the hangingwall side of the main vein. wallrocks and quartz contains pyrite. this sample is a good test of hangingwall mineralization.

C-PE-15 rough chip sample across 35' of stringered, pyritic greenstone (altered wacke). some coarse pyrite in the walls and quartz veining. this sample lends toward testing the bulk tonnage possibility.

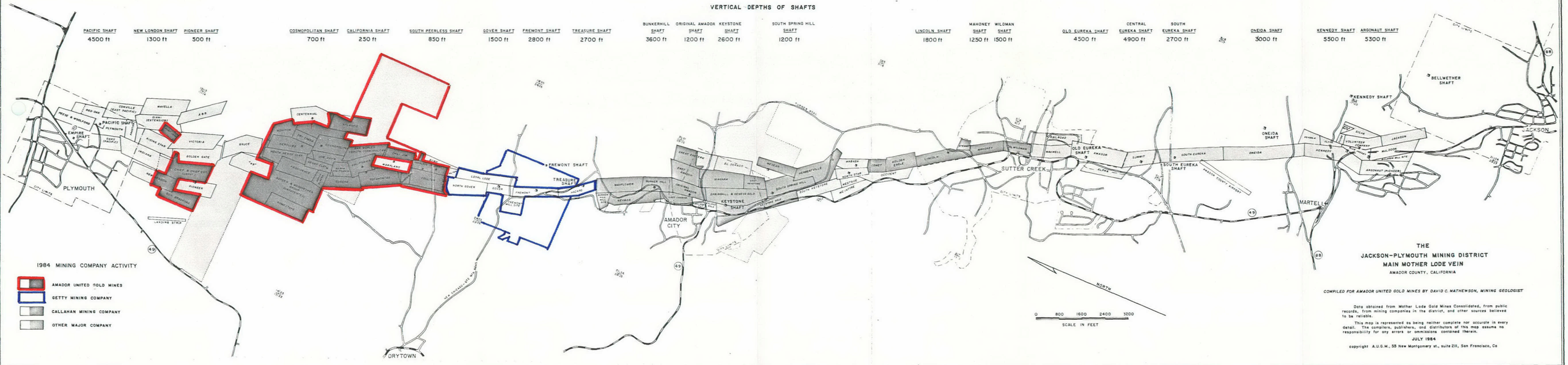
C-PE-16 rough chip sample across about 40' of weakly to moderately stringered foliated wacke. small to moderate amounts of pyrite are present in both the quartz and as disseminations in the altered wacke. minor mariposite.

RECORDED MINE PRODUCTION

PLYMOUTH	NEW LONDON	PIONEER	CALIFORNIA	PEERLESS	ITALIAN	FREMONT-GOVER	TREASURE	BUNKERHILL	ORIGINAL AMADOR	KEYSTONE	SOUTH SPRING HILL	LINCOLN	WILDMAN-MAHONEY	CENTRAL EUREKA	SOUTH EUREKA	ONEIDA	KENNEDY	ARGONAUT
675,000 OZ AU	production unknown	37,000 OZ AU	50,000 OZ AU	4,500 OZ AU	50,000 OZ AU	250,000 OZ AU	50,000 OZ AU	250,000 OZ AU	175,000 OZ AU	650,000 OZ AU	50,000 OZ AU	100,000 OZ AU	250,000 OZ AU	1,800,000 OZ AU	250,000 OZ AU	125,000 OZ AU	1,700,000 OZ AU	1,130,000 OZ AU

VERTICAL DEPTHS OF SHAFTS

PACIFIC SHAFT	NEW LONDON SHAFT	PIONEER SHAFT	COSMOPOLITAN SHAFT	CALIFORNIA SHAFT	SOUTH PEERLESS SHAFT	GOVER SHAFT	FREMONT SHAFT	TREASURE SHAFT	BUNKERHILL SHAFT	ORIGINAL AMADOR SHAFT	KEYSTONE SHAFT	SOUTH SPRING HILL SHAFT	LINCOLN SHAFT	MAHONEY SHAFT	WILDMAN SHAFT	OLD EUREKA SHAFT	CENTRAL EUREKA SHAFT	SOUTH EUREKA SHAFT	ONEIDA SHAFT	KENNEDY SHAFT	ARGONAUT SHAFT
4500 ft	1300 ft	500 ft	700 ft	250 ft	850 ft	1500 ft	2800 ft	2700 ft	3600 ft	1200 ft	2600 ft	1200 ft	1800 ft	1250 ft	1500 ft	4500 ft	4900 ft	2700 ft	3000 ft	5500 ft	5300 ft



1984 MINING COMPANY ACTIVITY

- AMADOR UNITED GOLD MINES
- GETTY MINING COMPANY
- CALLAHAN MINING COMPANY
- OTHER MAJOR COMPANY

THE JACKSON-PLYMOUTH MINING DISTRICT MAIN MOTHER LODE VEIN

AMADOR COUNTY, CALIFORNIA

COMPILED FOR AMADOR UNITED GOLD MINES BY DAVID C. MATHEWSON, MINING GEOLOGIST

Data obtained from Mother Lode Gold Mines Consolidated, from public records, from mining companies in the district, and other sources believed to be reliable.

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