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James Doyle Sell Mining Collection

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* Pilgrim (Al Smith) Galli Exploration Associates/Coeur d'Alene Mines
 (Ex: Tylor/Metoil)
 Dave Cockrum (Geol) Production: 280,532 T @ 0.17 opt Au & 0.258 Ag (Recovered)
 Reserves: 100,000 T @ 0.5 opt (Prod. 0.1-0.15) JDS-GCNL
 Tails: ±300,000 - 0.01-0.015 Recovery + Surf assay
 Galli Expl.

±* Moss Mine [200,000 T @ 0.11 opt Au 0.6 Ag to 300' level: vn to 60' wide
 + 1940 Fm streams - Ar
 19,000 T @ 0.294 - 1.35 Ag UG. - 300' level: Potential 400,000 T @ .1 Au
 90,000 T @ 0.13 (op) Bill Faults: Data from Fischer Watt/WLK notes

Oatman - Gold Road

United Western ±200,000 T @ 0.2 Fischer-Watt
 Tom Reed Tails 1.5 m.t. @ 0.025
 *** → Gold Road 395,000 T @ 0.245 opt Au Diluted to 5' + 15% = Mineable SAA
 (or) 556,000 T @ 0.24 Au 0.28 Ag 1942 - Sharon Steel
 *** → Gold Rd-Red Top 560,000 @ 0.21 opt Au inferred.
 Vivian Area ±100,000 T @ .2-.3 Au ?? UG. Sun River Gold (Gamin -1XL)
 Pete Drobeck (Ex-FW)
 White Chief X0,000 T @ .3 + ?? UG Minor operation/Cn Mill

Also .0x opt Au @ X00,000 T @ Kibble Camp SE of Mocking Bird (op)

±* Secret Pass/ Tincup (Santa Fe/Pacific Mining) Fred Jenkins, Mgr.
 ±100,000 T @ 0.15 opt Au Martin Steinpress, Geol.
 +
 ±800,000 T @ 0.05 - Rumour: to be confirmed 3/9/87

Mohave Co. - Trip Report - Feb. 4-17

Reconnaissance

Feb.

- 4: Drive to Kingman (Buy maps BLM in Phoenix)
- 5: Mohave Co. Museum; Oatman, Topock, Bullhead City, Union Pass
- 6: Lost Basin; Gold Basin: Excelsior Mine & vicinity, Santa Fe RDH 1/87
- 7: Gold Basin: Cyplocic - Fry Mines & vicinity; White Hills
- 8: Pope Mine Area; VanDeeman Mine area (Fischer-Watt)
- 9: VanDeeman area & west; Gold Bug-Mohave veins (Ivy Minerals)
- 10: Rain: Courthouse, Library; Mockingbird (Chevron +)
- 11: Pilgrim (Al Smith) Mine Area; Dave Cockrum, Galli Explor. (Royal Apex)
- 12: Klondyke-Golden Door Area: Gary Allen (Combined Metals Red. Co.);
 Cottonwood Landing, BLM-Kingman (Bob Harrison, Geol.)
- 13: Fischer-Watt (Durning + Hillemeier); North Portland Area
- 14: Truck repair, Roadside, Union Pass, Katherine area
- 15: New Tire; Secret Pass Area; Tincup (Santa Fe Minerals)
- 16: Union Pass to Oatman: Arabian, Thumb Butte, Moss Back, Moss Mine (Crown Resource)
- 17: Fischer-Watt; Drive to Tucson

FRK:mek

F.R. Koutz

cc: F.T. Graybeal

SANTA FE/PACIFIC MINERALS CO - EXPLORATION ROSTER (4/1984)

ALBUQUERQUE (SDS-881-3050)

(1987 20 Geol. - MGR
LEFT (PERMANENT))

- SAGESER, K.W. VP-EXPLOR
- BLOOMSTEIN, EDUARD I SR. STAFF GEOL. ± Mohave Co
- BONE, BILL R - DR-DRAFTING (only one left 1987?) 'MAZZLY GOOD!
- CORE, ANDREW B. - SR GEOL.
- DRAKE, DAVID P. - STAFF GEOL.
- FULP, MICHAEL S. - GEOLOGIST (EXPLORATION)
- JACKSON, ~~HEATHER~~ ^{JERRY} H. - SR. STAFF GEOL.
- JACKSON, MICHAEL - GEOL.
- KELLY, JOHN - TEMP LAB TECH
- MARVIN, R.D. - TEMP GEOL
- [JENKINS, FRED J. - MGR - MINERALS EXPLOR - SW DIST. (Region)]
- NEAL, WILL - GEOLOGIC ASS'T.
- ROYBAL, ORLANDO - DRAFTSMAN II
- STEINBRASS, MARTIN - SR. GEOL. (OATMAN: + W. Mountain Belt, Nevada)
- TESSENDORF, THOMAS - GEOL. ASS'T
- WILLEY, LISA A - SECY (TOTIERS)

RENO (702-329-8215)

- BRADINGTON, BRUCE - GEOL.
- BRUCE, WAYNE A - STAFF GEOL.
- EASTMAN, MARTIN D - DRAFTSMAN I
- GAZZAM, KATHY D - Typist/Accept.
- HENDRICKSON, ROBIN E - Proj. MGR
- NICKOLMAN, DOUGLAS E. - LANDSMAN NW DIST
- NICKOLS, WADE A - SR. GEOL.
- OLANEAGA, BARB. A - STAFF ASS'T
- [PRIRATT, RONALD L - MGR, MINEXPL. NW, REGION]
- PEARY, LISA M - GEOL
- ROWELL, ROBERT A. - GEOL. ASS'T
- STEVENSUN, ERIC W - GEOL. ASS'T
- TAPPER, CHARLES J - GEOL
- WITKOPP, RAYMOND W. - SR GEOL.
- YOUNG, JOHN - FIELD SUPERVISOR

PRESWITT (602-445-2987) (closed?)

- CANLEBA, MAO STAFF GEOL. ^{by Billton}
- GIORGIO, PATTY Sec'y
- Lawrence, JOHN RICK SR. GEOL. ^{WEST} 10/8
- Pape, RICHARD F. GEOL. ^(STAFF WEST)
- RIVERA, STEVE GEOL

PITTSBURGH, PA (412 787-5450)

- CURRY - MAYFIELD, PHYLLIS - Sec'y
- [OWEN, ROY, MGR EXPLOR - ENG. REGION]
- Peltomen, DEAN R. GEOL.
- Lee ANDY HEINE - GRANTS
- Lamy, STEVEN A - CIV. ENG

2/23/87

F.R.K.'s Schedule

MARY (JDS - WUK etc):

Th. Feb 26 - Fri - MARCH: Kingman (Allston Inn) maybe 26-29th Lake Hood
City

- About 3 March: TDV over to WUK at Fischer-Watts

Golden Syncline Project (S.B. Co, (R) DATA

F.R.K. will BE IN GULFBASIN + Black Range (including Review Anaconda + FW Roadside DATA (WUK Request)

← GO OVER CORN/Aiken/Logan DATA in Field

MARCH 9: TO ABQ: Look at SANTA Fe's Tincup Proj. Data (NE of Oatman)
ON TO DENVER.

MARCH 10: ASARCO Exploration Meeting - DENVER

MARCH 11: WUK @ Crown Res.: Moss Back / RAPIDS DATA Home PM

MARCH 12-22: TULSON OFFICE

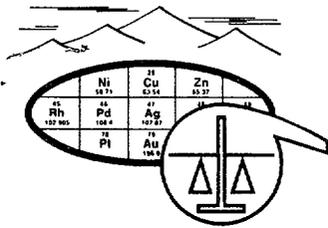
MARCH ~~23~~ 23-30: Columbus, OHIO (MOTHERS) "VACATION"

April 1 to Reno (Fly) April 1-5 California Field Trip

April 6-8: NGS MEETINGS

April 9 Fly RNO-SLC: W. UTMT Field Trip. April 9-11

April 11 to Las Vegas - Fly to TUS.



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

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. TAJ 475A
March 25, 1987
MM-AR-1A TO MM-AR-4
RECEIVED 3-6-87

ASARCO INCORPORATED
Attn: Mr. Fleetwood R. Koutz
Southwestern Exploration
P.O. Box 5747
Tucson, Arizona 85703

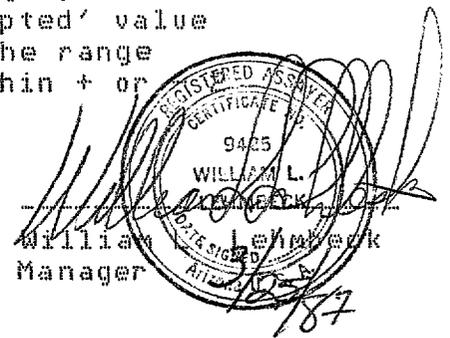
ASARCO Incorporated

MAR 30 1987

Analysis of 3 Pulp Samples

SW Exploration

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 - steps at the 95 % confidence level.

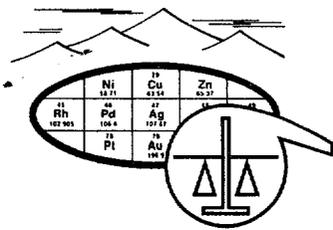


cc: ASARCO INCORPORATED
Attn: Mr. Jim Sell
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated

MAR 30 1987

SW Exploration



SKYLINE LABS, INC.

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

JOB NO. TAJ 475A
 PAGE 2

ITEM NO. SAMPLE NO.
 1 = MM-AR-1A
 4 = MM-AR-3
 5 = MM-AR-4

ITEM	1	4	5
ELEMENT			
Fe	2%	2%	1.5%
Ca	1%	3%	.2%
Mg	.07%	.2%	.15%
Ag	2	<1	<1
As	<200	<200	<200
B	10	10	10
Ba	200	200	300
Be	<2	<2	<2
Bi	10	<10	<10
Cd	<50	<50	<50
Co	70	50	<5
Cr	150	150	150
Cu	150	150	7
Ga	<10	20	<10
Ge	<20	<20	<20
La	<20	<20	30
Mn	200	1000	200
Mo	1000	15	20
Nb	<20	<20	<20
Ni	70	70	5
Pb	100	50	20
Sb	<100	<100	<100
Sc	<10	10	<10
Sn	<10	<10	<10
Sr	<100	<100	<100
Ti	1500	2000	2000
V	20	50	20
W	<50	<50	<50
Y	<10	<10	30
Zn	<200	<200	<200
Zr	<20	<20	200

ASARCO Incorporated

MAR 30 1987

SW Exploration

MOHAVE COUNTY GOLD "RESERVES" - RESOURCES

* = Elephant County (Potential for Asarco: Keep track of + future work)

* Cyclopic - Gold Basin - ±5 m.t. @ ± .04 opt Rough Estim. Resource -
Corn/Ahren

Including: 300,000T @ 0.15 opt indicated (Wyman + King)	AZ Dept. Min. Res. - Phoenix (need to review data)
Including: 67,000T @ 0.28 opt indicated (McIntire)	

Saratoga Mines has lease from Wyman + King.

Production ±60,000T @ 0.35 (Tails ±5000T run 0.08 opt) - Corn

U.S. Borax Drill: 200,000T @ 0.04 (1983) W&N of Cyclopic, spotty,
now Loghry/Corn/Ahren

(F.R.K. will sample a few of neglected better areas)

Back from Icarus-Teton Expl. 3/15/87.

* N. Black Mtns: Van Deeman: Fischer-Watt Gold (US-OTC)/Arizona Star
(±WSA) Resources (VSE)

(235 unpat. claims from Kunkes): fill-in - step out drilling

Spring 1987 (May 1 start + detailed mapping + sample on north end).

2-10 m.t. @ .04-.05 "potential" (including area W. of Pope Mine)

2.6 m.t. @ 0.042 .5-1.5/1 w/o indicated + infer. GCNL 2/9/87

.72 m.t. @ 0.042 1.2/1 w/o @.01 c/o indic.+prob.	65 holes±40' thick
--	--------------------

.75 m.t. @ 0.042 - possible	— P. Dunning 12/86
-----------------------------	--------------------

Gold Bug (Ivy Minerals): 300T @ ± 4.opt Au Drilled to 200' (vein)
Bill Vanderwall. Mgr. (Geol) (7 pat. claims)

±5000T @ 1. opt Au in vn to 400'; shaft retimbering, to 250'

2/87 - May ship to Hayden - mini-mill later (vn-lower plate pE)

Check out Liberty Mine color anom., lower plate, drilled Freeport
1982, Sec. 33, T27N, R21W.

+*Mockingbird (Chevron, Ex-Anaconda) New Chevron claims S. of

Mockingbird 4/86

Production: ±20-30,000T @ .4 opt Au-(±5,000T Tails) - Guess FRK +
Shrader

+8 RDH Drilled Oct 1985 at Mockingbird Mine (Kyllo-Noon, Las V.?)

Plans of operations for Spring 1987 drilling by Chevron and another
Group S. of Mine filed with BLM

MOHAVE COUNTY GOLD "RESERVES" - RESOURCES

?*Kemple Camp: X00,000T @ .0X opt Au; detachment-lower plate Ron Aye
(to be visited) "Min. Eng"
Some drilling, promotion, trailer camp Ken Dobin

* Klondyke - Golden Door Area Combined Metals Reduction Co.
Gary Allen, Geol. (± LTD partnership ?)
Fred Humphrey, Mgr.
Larry Atkinson, Promotor
±800,000T @ 0.07 ± 3/1 w/o CMR-Promotional Estim.
120,000T @ 0.097 1982 Fischer-Watt
(Former CMR partner)

*Portland (Western States Minerals, subsid. Groves Construct.)
±800 TPD open pit/heap leach
or < 1.43 m.t. @ .043 opt Au + 0.68 opt Ag >.01 Au > SRD, Asarco 1979
< 2.2 m.t. @ .033 opt Au + 0.59 opt Ag >.01 Au > Fischer-Watt 1981
0.318 m.t. @ .098 opt Au @ 0.04 c/o, 31' thick
+
0.75 m.t. @ .057 probable
0.90 m.t. @ .078 (45,000 oz "available") Pete Drobeck, Mine
Geol. 1985
by mid 1987 will quit mining and will have produced and have
on leach pads 30,000 oz. Au. Both W.States & Jordiex Mill
failures; went to heap leach.
Combined Metals will drill 2 miles NE of Portland - Spring 1987
(Jar. + Hem in Volc.)

*Pilgrim (Al Smith) Galli Explor. Assoc. (Coeur d'Alene Mines)
(Ex Tylor/Metol-VSE, Galli partners)
Dave Cockrum (Geol) Also Ex-Duval, Fischer-Watt. Galli will drill
Spring/Summer 1987.
Production: 280,532T @ 0.17 opt Au + 0.26 Ag (Recovered)
Tails: ±300,000T @ 0.01-.015 recovery + surf. assay
Reserves: 100,000T @ 0.5 opt (Prob. 0.1-0.15) JDS-GCNL (?)
750,000T @ 0.06 Guess - Fischer-Watt
Good looking HDS-Hermosa Bx + adularia flood: N&E of vr zone in HW

Roadside (Ex-Fischer-Watt 1986)
now: 200,000T @ .03 opt, .01 c/o 2.5/1 w/o (cut ±1/3 by 1986 drilling)
incl: 85,000T @ .045 Have drill data + maps (3/87)

Frisco (Bonelli Family) Doug Bonelli, Eng. want ±10-12% NSR ±Family Feud
(500,000T @ +.05 opt Au JDS (AGS 1984) Shutdown 1985-86

Arabian (Ex Sutton/Crown Resources) 11,000' drilling
530,000T @ 0.06 opt Au (op) ±.3 Ag Meridian 1984
or 800,000T @ 0.045 opt Au (op) ±.3 Ag
On Union Pass Highway (AZ 68). State has condemned part of Pat.
claims for widening highway R.O.W.

MOHAVE COUNTY GOLD "RESERVES" - RESOURCES

White Chief: 10,000T @ 0.3+?? UG Canyon City Mining: Bob & Judy
Graham. 1983 decline. (Charlie Stoll)

Sun River Gold (VSE) now has United Western VN, Oro Fino vein plus
other holdings in Vivian and Moss Mine Area. (Pete Drobeck,
consultant 3/87).

Total Datman-Gold Road production 2.2 million oz. Au + .8 million
oz. Ag.

Chloride District Golconda-Blackhawk Vn (polymetallic)

40,000T @ 0.07 opt Au, 4 opt Ag, 12% Zn, 0.5% Cu, 0.2% Pb: Drilled by
Gamin-IXL Mines (Pete Drobeck, Geol): promoters--management still
claim 200,000T.

White Hills District production ±8 million oz. Ag 5000 oz. Au vn
Arizona Silver Corp. (Corval Dev., US) - now Alanco?; vat + heap
leach.

260,000T dumps	}	3-4 opt Ag recoverable	mostly promotional
100,000T Tails			- 1977 report
60,000T Backfill			

12/31/82 inventory 3,200 oz. Ag 16 oz. Au Dore
7/82 inventory 6500 oz. Ag (local .4 opt Au in 15 opt Ag UG vn).

A periodic report from your Mohave County Geologist.

FRK:mek


F. R. Koutz

cc: R.L. Brown/F.T. Graybeal

March 31, 1987

To: J.D. Sell

From: F.R. Koutz

1st Quarter 1987Exploration Authorizations

A few hours familiarizing H.G. Kreis with Brown's Ranch Data. Two days clean up on Troy Unit Petrography, report, samples (charged to General Exploration).

General Exploration

Mohave County, Arizona 25 days field, 18 days office (including proposal plus file review (Jan. 28)). Mostly Black Range + Gold Basin areas. See Mohave County Au "Reserves" - Resources memo (Feb. 20; Revised Mar. 16) and to be revised periodically. ±25 Properties/districts looked at and/or evaluation data obtained. Properties of past merit/future potential studied this quarter are:

Cyclopic/Gold Basin: Complete data package obtained from Loghry/Corn/Ahren. Most of area too low grade/too deep for open pit. One residual area to be grid soil sampled for detachment fault gold. Other areas in district low priority recon. Cyclopic "Reserves" at AZ Dept. of Mineral Resources need to be obtained.

N.Black Mts. - Van Deeman: Fischer Watt Gold/Arizona Star controls and has drilled out several reserves (too small), but has several other juicy targets. Combined small reserves could make a viable Asarco operation and property should be kept track of as possible buy-in. There are several other areas Liberty Mine area (± too small) to south, previously drilled on which data should be obtained. Gold Bug (high grade vein, too small, but potential smelter flux).

Mockingbird: Previously drilled and to be drilled by Chevron. Long shot. Prob. too small--too low grade, but worth spending several days to eliminate any potential target. Kemple Camp has some drilling, too small--promotion.

Klondyke: Too small as presently known, but aggregate parts may be of interest in future if Combined Metals would let anyone on their property. They will drill area north of Portland.

Portland: Almost mined out but leaching to continue. Western Minerals after other targets.

Pilgrim: Galli Exploration to drill Hardshell-Hermosa type breccia/andularia flooded zone and have other cauldron margin targets on their property.

Roadside: All obvious targets drilled by Fischer-Watt and property dropped. Have complete data package. Needs low priority compilation/review.

Frisco: Easy ore mined out and leached. Limited small potential/family operation.

Arabian: Limited tonnage drilled; partially condemned by State highway (AZ 68) Dept.

Mossback: Easy obvious targets drilled; have maps/data. Worth low-moderate priority recon.

Moss Mine: Small tonnage stockwork/vein zone. Old underground being opened for sampling.

Secret Pass: 48,000 oz. Au developed by Santa Fe. Extensive data obtained for field review.

Gold Road/Red Top: Spin-off Gold Co. to develop reserves planned by Sharon Steel. See March 20 memo.

Oatman District: Drilling activity by Charlie Stoll and Sun River Gold for 10-20,000 T UG-vein/spur targets.

Work to continue in April ± May as outlined in "Monthly" report to R.L. Brown.

Miscellaneous

1 Day Denver Meeting, 8 days Misc. General Exploration, 24 days off, 10 (1986) and 5 (1987) vacation days.

April 14, 1987

To: J.D. Sell

From: F.R. Koutz

*TPV: any further
comments?
JKS.*

GOLDEN SYNCLINE PROSPECT
Fischer-Watt Gold Co.
San Bernardino Co., CA

I returned a 4/3/87 call from Perry Durning and spoke to Bud Hillemeier who informed me that Delmicah Mines had returned the above prospect to Fischer-Watt as of 3/31/87. I have only been around this prospect in the north end of the Sacramento Mountains in years past so can not comment directly, but T. Dalla Vista and A. Giesecke sampled and have spoken highly of the area, about 12 miles west of Needles. Mr. Hillemeier gave me a 30-minute run-down on the property on March 3--the following is from those notes.

There are some 301 unpatented lode claims of which 97 are held by lease with 4% NSR and \$2 million buy-down to 1.5% NSR. Fischer-Watt wanted Delmicah to do \$100,000 work in 1987, but would probably accept \$30,000 assessment work this year just to hold on to the ground. Fischer-Watt would retain 50% net profits.

The Golden Syncline is a major warp in the Sacramento Mountains detachment fault with lower plate p&e gneiss and granite and upper plate Tertiary volcanics and sediments including basin-fill fanglomerates. The upper plate contains Ag-Mn-Ba-Sr-F-Hg \pm (Pb-Zn) hot spring "Halo" mineralization with siliceous sinter and jasperoid with calcite vein swarms and flooding in at least 4 areas. The lower plate zone--where outcropping--contains Au mineralization (usually below upper plate "Halos") with grabs up to several tenths ppm Au but no ore-grade (\pm 1 ppm) Au over significant widths. The best Au values occur in warps or folds in the detachment synform surface. Goldfields drilled 14 holes on the east side of the property but dropped the ground. The best intercepts over any significant thickness were 0.015 opt Au but Fischer-Watt does not have the complete data, although they picked up Goldfields claims. Goldfields also has drilled in Sec. 3-4, T7N, R23E in the Sacramento Mountains.

Geologic mapping (1"=623' photo base) has been completed and several 100 geochem samples taken. Fischer-Watt believes they have defined 4-6 target zones. Most of these are along the intercepting axes of warp zones below pediment-basin gravel cover.

One of these zones (the "Junkyard") was drilled in July 1986? by AMAX (Bill Danley) in a single RDH to 400'. The zone from 250-400' averaged 0.13 ppm Au, but didn't have a well-developed Ag "Halo" zone. AMAX-Tucson went out of business then and didn't complete their other planned holes. Fischer-Watt expects that better Au values might be found deeper (out of small open

J.D. Sell

April 14, 1987
Page 2

pit range) or beneath areas that had a better "halo" zone developed. Of course, these untested Ag Halo zones are beneath (sometimes replacing) gravels of various ages. The targets at Golden Syncline are of the wildcat-pediment drill program type.

Although this project sounds a lot like Orocopia (although I know little about it), I feel it is worth collecting Fischer Watt's data and making a significant examination in the field, especially on the west side of the syncline where I don't believe we've sampled. All Fischer-Watt people will be out of the Kingman office until after Easter.



F. R. Koutz

FRK:mek

cc: T. Dalla Vista

April 16, 1984

To: F. R. Koutz

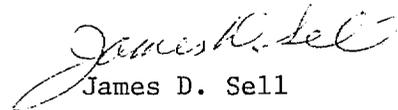
From: J. D. Sell

Cu-Mineralized Flat Faults
Central & Western Arizona

At least three areas in Arizona, on which Asarco has done some work, need to be evaluated early in your study of gold-copper occurrences along flat structures of western and northwestern Arizona.

- 1) Copper Eagle Prospect, Eagle Tail District, Yuma County, AZ. Mr. G. J. Stathis drilled five rotary holes into bedrock in this area and confirmed cataclastic rocks with low copper-moly values. These sample pulps, CUE-Series, should be stored in the warehouse and you should find them and re-assay for gold any interesting intervals as a first re-study of the district.
- 2) North Star, North Picacho Mountain District, Pinal County, AZ. Mr. S. R. Davis drilled a number of holes as did others. To the north is an open-pit with copper along numerous flat structures. Any gold?
- 3) In the Owlhead District, Pinal County, AZ, Mr. S. R. Davis reported a flat-structure with minor copper values. Any gold?

Please put these three areas on your early list of places to re-visit and re-evaluate.


James D. Sell

JDS/cg

cc: WLKurtz

ELMO L. POTEET

~~411 EAST APACHE~~ - P. O. BOX 27 • FARMINGTON, NEW MEXICO 87401 • PHONE 505-325-7685

87499

TO [James Sell, Dist. Manager
Asarco Inc.
P.O. Box 5747
Tucson, Arizona 85703]

Subject:
Assay Results on
S.L.E. No. 1 Drillhole
NE 1/4 NW 1/4 Sec. 5, T. 8N, R. 9W,
Yavapai Co., Arizona.

DATE April 27, 1987

Dear Mr. Sell:

Enclosed herewith are results of selected assays made by ASAT. We plan to do more shallow drilling in the near future and will retain the samples from the placer sands & gravels also. The general information relative to the placer materials would indicate gold values of interest from 0.05 to 0.13 ounces per ton. The drillsite of S.L.E. No. 1 is about 100 feet easterly from the roadway and is marked by a 4 inch casing pipe and plaster plug.

Sincerely,
E. L. Poteet

BY

SIGNED

Form N-733® The Drawing Board, Inc., Box 505, Dallas, Texas

INSTRUCTIONS TO SENDER:

1. KEEP YELLOW COPY. 2. SEND WHITE AND PINK COPIES WITH CARBON INTACT.

INSTRUCTIONS TO RECEIVER:

1. WRITE REPLY. 2. DETACH STUB, KEEP PINK COPY, RETURN WHITE COPY TO SENDER.

American Society for Applied Technology

A Non-Profit Scientific Foundation
P. O. Box 1705, Silver City, NM 88062
(505) 388-5654
IRS 501(c) (3) # 85-0305276

August 12, 1986

Elmo L. Poteet
P.O. Box 27
Farmington, NM 87499

Dear Elmo:

We have examined the second series of five core samples and herewith report our determinations.

*Note: These tests from
Samples on S.L.E. Claims
Group - NE 1/4 NW 1/4 Sec. 5,
T. 8N., R. 9W., Yavapai Co., Ariz.
11 miles N.W. of Aquila, Ariz.*

SAMPLE: 86-19

*3 1/8" Button Bit - Rotary Cuttings
(S.L.E. - 22'-27')*

ROCK TYPE: Latite Porphyry, Biotite Schist, Vein Quartz and Meta-arkose (?) chips.

GOLD TYPE: Isometric crystals 0.5 microns to 5 microns.

FIRE ASSAY Gold, 0.07 ounces per ton.

SAMPLE: 86-20

*3 1/8" Button Bit - Rotary Cuttings
(S.L.E. 27'-32')*

ROCK TYPE: Intermediate composition platonitic rock and silicified limestone possible secondary leach mineral.

GOLD TYPE: Isometric crystals 0.5 to 5 microns.

FIRE ASSAY Gold, 0.04 ounces per ton.

SAMPLE: 86-21

*3 1/8" Button Bit - Rotary Cuttings
(S.L.E. 50'-70')*

ROCK TYPE: Primarily Meta-arkose (?) with some Latite Porphyry and Biotite, Chlorite Schist.

GOLD TYPE: No visible gold.

FIRE ASSAY Gold, 0.01 ounces per ton.

SAMPLE

86-22

3 1/8" Button Bit
Rotary Cuttings
(S.L.E. 100'-120')

ROCK TYPE: Biotite, Magnetite Granite on intermediate fine grained platonitic rock.

GOLD TYPE: Isometric crystals 0.5 to 5.0 microns.

FIRE ASSAY Gold 0.03 ounces per ton.

SAMPLE:

86-23

(S.L.E. 140'-150' Core) (3.032" Core)

ROCK TYPE: Andesite

GOLD TYPE: Isometric crystals 0.5 to 5.0 microns.

FIRE ASSAY Gold, 0.02 ounces per ton.

Thank you for funding this research and we are looking forward to being of assistance in the future.

Sincerely yours,



Walter C. Lashley
Director of Research

/ca

ASAT

May 1, 1987

To: T. Dalla Vista

From: F.R. Koutz

See CMA's
report of
July 17, 1985
(over letter).

Mineral Springs Prospect
Ivanpah Mountains
Fischer - Watt Mining Co.
Sec. 2 & 3, T15N, R14E
San Bernardino Co., CA

I pass on the following notes on the above prospect as P. Durning and F. Hillemeier will probably be out when you pass through Kingman on May 4-5. Durning let me Xerox their minimal files on the property, but I was only able to discuss the property with them for a few minutes.

The 16 Esperanza claims making up this prospect are about 5 miles SE of Mountain Pass (I-15) at the NE end (SE facing flank) of the Ivanpah Mts. The claims were staked in March 1984 and were part of a larger block, only the "best" of which were perfected. There are also 2 end-to-end previous adverse claims along the strike of the 20° west-dipping structure where it apexes (at 3 adits). These claims are owned by Earl and Helen Park (Mineral Springs 1 & 2: AMC 36727 & 728). 1984-85 Fischer-Watt assessment work was geological mapping and sampling (6 days, 50 samples). 1985-86 Assessment was by drilling one 240' rotary hole in the NW corner of Esperanza #89. 1986-87 Work is incomplete.

Host rocks are sheared Precambrian biotite granite and gneiss. A major NNE to N-striking, 20-30° west-dipping detachment (?) structure is apparently the primary control of Au, Ag, Cu, Pb mineralization which is localized in narrow quartz veins which strike N to NE and E-W, usually moderately to steeply dipping. A (1000' N-S by 300' E-W) zone of stockwork quartz-calcite ± ankerite veinlets straddles the section line in the hanging wall of the detachment (mostly on Park's ground). A surrounding heart-shaped (1200' E-W, 1200-2000' N-S) zone contains moderate to strong Fe oxides on joints. A NNE-striking, +2000' long rhyolite dike crosses the north end of the best-altered zone, but what if anything it has to do with mineralization is unknown.

There are about 500 feet of underground workings, but no evidence of any significant production. Almost all sample values underground and on the surface are <0.01 opt Au -- usually .001-.005 opt Au except in a few narrow structures which run a maximum .013 opt Au. A few samples do contain 2 opt Ag and one chalcopryrite-CuCo₃ dump grab contained 11.8 opt Ag. Most Ag values were <0.05-0.10 opt. The drill hole was collared in the western lobe of the FeOx color anomaly. 19 of 46 Five foot assay intervals ran .003-.005 opt Au with 20-25'=.065 opt Au and 125-130'=0.015 opt Au -- both with 0.1 opt Ag. Other intervals were "trace Au." No geology on this hole was available in the files.

Durning is willing to give up a controlling interest in this prospect if someone would take over assessment work and give them \$5,000 front money. I gathered that Fischer-Watt would use \$1600 from recent stock offerings to contract out more geology for this year's assessment work. They say that they would like to drill 3 or 4 more holes on the property, but I suspect that they will justly drop the ground in the near future. I see little of encouragement from the data I examined, but, of course, I have not been on the ground. There are apparently much better Au values elsewhere along the East flank of the Ivanpah Range. Particularly interesting is the Morning Star deposit some 4 miles SSE of Mineral Springs which Durning says contains 8 m.t. @ 0.06 opt Au localized in a similar low angle structure.

FRK:mek

Fleetwood R. Koutz

cc: J.D. Sell

ASARCO EXPLORATION RECORD

FIELD EXAMINATION LITERATURE SEARCH ASARCO FILE Submittal
 None 391-3350

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 Big Hill Mine (Date Mining District) Arizona Gold Aster				② Country Yavapai		③ State or Province Arizona	
				④ USGS Quad. Date 7 1/2"		⑤ File or Core No.	
⑥ Latitude 34°18'N	⑦ Longitude 112°58'N	⑧ AMS Sheet Prescott	Township 11N	Range 7W	Section 15,22	⑨ Examined by F.R.Koutz	⑩ Date 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:					

Section III Appraisal

Henry Shepard, Box 649, Congress 85332

<input type="checkbox"/> Action Now <input type="checkbox"/> Too Low Grade <input checked="" type="checkbox"/> Too Small <input type="checkbox"/> Ownership Problem <input type="checkbox"/> Access Problem <input checked="" type="checkbox"/> State Land		<input type="checkbox"/> Post Producer <input type="checkbox"/> Producer <input type="checkbox"/> Mineral Deposit <input checked="" type="checkbox"/> Prospect <input type="checkbox"/> (1927-1936?)		<input type="checkbox"/> Geologic Concept <input type="checkbox"/> Geochem Anomaly <input type="checkbox"/> Geophy Anomaly		⑭ Production Commodity Tons Grade "Au-ore" maybe Xoot 0.X opt Au	
⑮ Num. Drill Holes 0 Approx Total Footage 0		⑯ Excavations "3000 Workings" Maybe 1000' None Modern		⑰ Reserves <input type="checkbox"/> Measured Commodity <input type="checkbox"/> Estimated Tons Grade None			
<input type="checkbox"/> Spectro. Analysis Attached		<input checked="" type="checkbox"/> Assays Attached TAJ 481 Skyline		<input type="checkbox"/> Geochem Results Attached			

Section IV Geologic Data "T-.77 opt Au" Asarco Assays show <.002 opt Au, <.01 opt Ag <.1 opt Pt

⑲ Commodity or Contained Metals Au(Ag-W-Pb)"Os,Pf,Pd,Ir,Ru,Rh" = Crooked Assayer.			
⑳ Ore Minerals-Major	Au°	T py	Minor Wolframite(?) galena (?)
㉑ Host Rocks-Major	Granite	Aplite dikes mafic dikes	Minor Schist Basalt+tuffs
㉒ Age of Host Rocks	pE	pE	pE? to mTert. pE(Xenol.?) Qt(1-2mi.SE)
㉓ Nature of Exposures Rolling Hills in cross-fractured,exfoliating,spheroidal weathering granite; aplite dikes/Qtz veins form cockscomb ridges; valleys, choked with grús, Qal.			
㉔ Alteration Weak Kfs-clay-epidote-chlorite + FeOx flooding (most FeOx from mafics) Strong WX+shear of mafics ㉕ Total Extent "13,500'x4-30'wide-Qtz Fissure"			
㉖ 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).			
㉗ 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 ㉘ Age of Mineralization Laramide(?)			
㉙ 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 1/4-1/2 mile around except Xoot vn (ug). Span also holds Burro Telegraph claims Mohave Co. see 1986 H.G. Kreis ERS "200,000 gal H ₂ O storage -ug" = Windmill + flooded lower workings.			

ASARCO

JDS

Exploration Department
Southwestern United States Division

June 5, 1987

Mr. J.F. Spann
P.O. Box 325
Wickenburg, AZ 85358

Big Hill Mine
Sec. 15, 22, T11N, R7W
Date Mining District
Yavapai County, AZ

Dear Mr. Spann:

I have finally received the results on the four samples I took at your property leased from the State. For each sample, gold was <.005 oz./T and silver <.02 oz./T. These results were run twice. The two samples (from your # 1-5 and #3 dump areas) that I had run for platinum-palladium were less than .003 oz./T. These results by Skyline Labs, Inc., Tucson only mean that there was no gold, silver, or platinum in the samples I took. However, you should make sure that your future assays are done by a reputable laboratory run by an Arizona Registered Assayer. As I mentioned to you over the phone and to Mr. Shepard in the field, your prospect is not of interest to us, but thank you for thinking of Asarco.

Very truly yours,



Fleetwood R. Koutz
Geologist

FRK:mek

cc: Henry Shepard
Box 649
Congress, AZ 85332

Blind Note on Asarco Copies: The attached ERS, sample notes and map, and Spann's notes and assays are self-explanatory. He knows little about geology-mining and has wasted +\$1000 on fraudulent assays and paid the state for a worthless lease and prospect permit. I am a little surprised that Skyline found no gold in the samples as there were +1000' of UG workings--but nil stopping. This quartz vein is typical of those in the sea of Precambrian granite of NW Arizona. *FRK*

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

ASARCO EXPLORATION RECORD

J.F. Span
Box 325
Wickenburg, AZ 85358

FIELD EXAMINATION LITERATURE SEARCH ASARCO FILE Submittal
None 391-3350

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⑨ Township 11N		⑩ Range 7W		⑪ Section 15,22		⑫ Examined by F.R.Koutz		⑬ Date 4/28/87
⑭ Office Tucson						⑮ Field Days 3 hrs.		

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Section III Appraisal

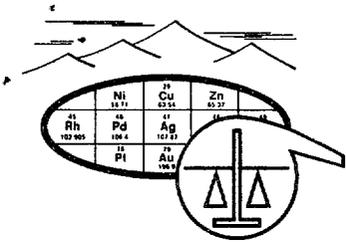
Henry Shepard, Box 649, Congress 85332

<input type="checkbox"/> Action Now <input type="checkbox"/> Too Low Grade <input checked="" type="checkbox"/> Too Small <input type="checkbox"/> Ownership Problem <input type="checkbox"/> Access Problem <input checked="" type="checkbox"/> State Land		<input type="checkbox"/> Post Producer <input type="checkbox"/> Producer <input type="checkbox"/> Mineral Deposit <input checked="" type="checkbox"/> Prospect <input type="checkbox"/> (1927-1936?)		<input type="checkbox"/> Geologic Concept <input type="checkbox"/> Geochem Anomaly <input type="checkbox"/> Geophy Anomaly		⑰ Production Commodity Tons Grade "Au-ore" maybe Xoot 0.X opt Au	
⑱ Num.Drill Holes 0 Approx Total Footage 0		⑲ Excavations "3000 Workings" Maybe 1000' None Modern		<input type="checkbox"/> Measured Commodity <input type="checkbox"/> Estimated Tons Grade		⑳ Reserves None	
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Section IV Geologic Data "T-.77 opt Au" Asarco Assays show <.002 opt Au, <.01 opt Ag <.1 opt Pt

⑳ Commodity or Contained Metals Au(Ag-W-Pb)"Os, Pf, Pd, Ir, Ru, Rh" = Crooked Assayer.			
㉑ Ore Minerals-Major Au°		T py Minor Wolframite(?) galena (?)	
㉒ Host Rocks-Major Granite		Aplite dikes mafic dikes Minor Schist Basalt+tuffs	
㉓ Age of Host Rocks pE		pE pE? to mTert. pE(Xenol.?) Qt(1-2mi.SE)	
㉔ Nature of Exposures Rolling Hills in cross-fractured, exfoliating, spheroidal weathering granite; aplite dikes/Qtz veins form cockscomb ridges; valleys, choked with grús, Qal.			
㉕ Alteration Weak Kfs-clay-epidote-chlorite + FeOx flooding (most FeOx from mafics) Strong WX+shear of mafics ㉖ Total Extent "13,500'x4-30'wide-Qtz Fissure"			
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(For additional space use extra sheets)



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

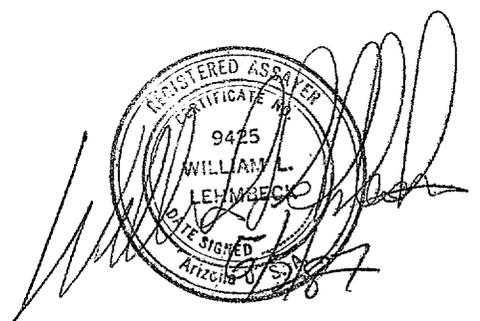
JOB NO. TAJ 481
 June 5, 1987
 PAGE 2 OF 2

ITEM	SAMPLE NO.	FIRE ASSAY		
		Au (oz/t)	Ag (oz/t)	Pt (ppm)
1	BH-1	<.005	<.01	<.1
2	BH-2	<.005	<.01	<.1
3	BH-3	<.005	<.01	<.1
4	BH-4	<.005	<.01	<.1

*NOTE: Greater than normal geochemical range.
 Please advise if fire assay is needed.

*Big Hill
 Geopai Co, AZ*

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



Fleet -
J.F. Span called with this
info. for you. Hank

4-16-87 ^{FR}
10:30 AM

J.F. Span Scottsdale ^{mineral only to date} 391-3350 Phoenix "Henry"

State land spec (14 + 1/2, 12 1/2 BLM)
see 15 T11N, R7W - NOTHING IN TWP or Ams sheet
Date Mining Dist, Yavapai Co AZ
3-4 miles NW of DATE CREEK prospecting

Mineral Museum
R.W. Rawson → Paper (1940) assays \$12.307 Au (*35 Au) for W
DRIFT BOWTIE + TAILS looking

Span's Assays { 1/2 oz Au typical
0.25 - 0.77 oz Au
Gemell, 1952, 1/2 sheet of info. Au low no samples
↑ mining engineer Date CREEK MINING DISTRICT
^{with a mine looking for Au}

Span has 200ac & can get even the 400ac

Span says 30,000 tons (50,000T?) in tails

Call Span if interested.
-He really doesn't believe PT assays

? 3000' SHAFT ???
4-5 "TAILS"
(amps)
called K 3/4 4/20 pm

1/2 mile | Date
MARTINEZ MESA

- TO SOUTH -

MARTINEZ District X-g. granite pegs, aplite, basic dikes, 41870 north strike

JF SPAN BOX 325
WICKENBURG AZ 85358
SENT DATA 4/21 (Rec'd)

3/20/87

↓ Refu from HGIT 3/20/

J.F. SPAW : ^{large} Gene - State Ground - (PP) mineral claim

Borro COK
Property
HGIT

- 30-40,000 Tails - - Bagged - 15-20 mite

1/4 out - .77 opt Au +PT

J+B LABS in Phoenix
Meyca -
Especially - AET LABS

.77 Au
.108 Os
.39 Pt
.550 -pd.

.17
.19

- Blm Labs - Sprats: Analyzing Pt ones -

? Location



15-20! miles toward Congress.

Hill side Rd

- 85' years old Lady. - worked here in 30's

- QUAD -

MA-12

OX RANCH
- BANK
OWNS
DOW HAWKINS
PLACE &
FARM

DOWN
AREA (and
with approx
200' spurs
3853 SE
(MALPAIS MESA)

HUT HEN =
BEST
A

#1 NW
OFF CAMP
#2 OFF TOO
PUMP (w
LOBE

352' across
11 x 20 acres
3797

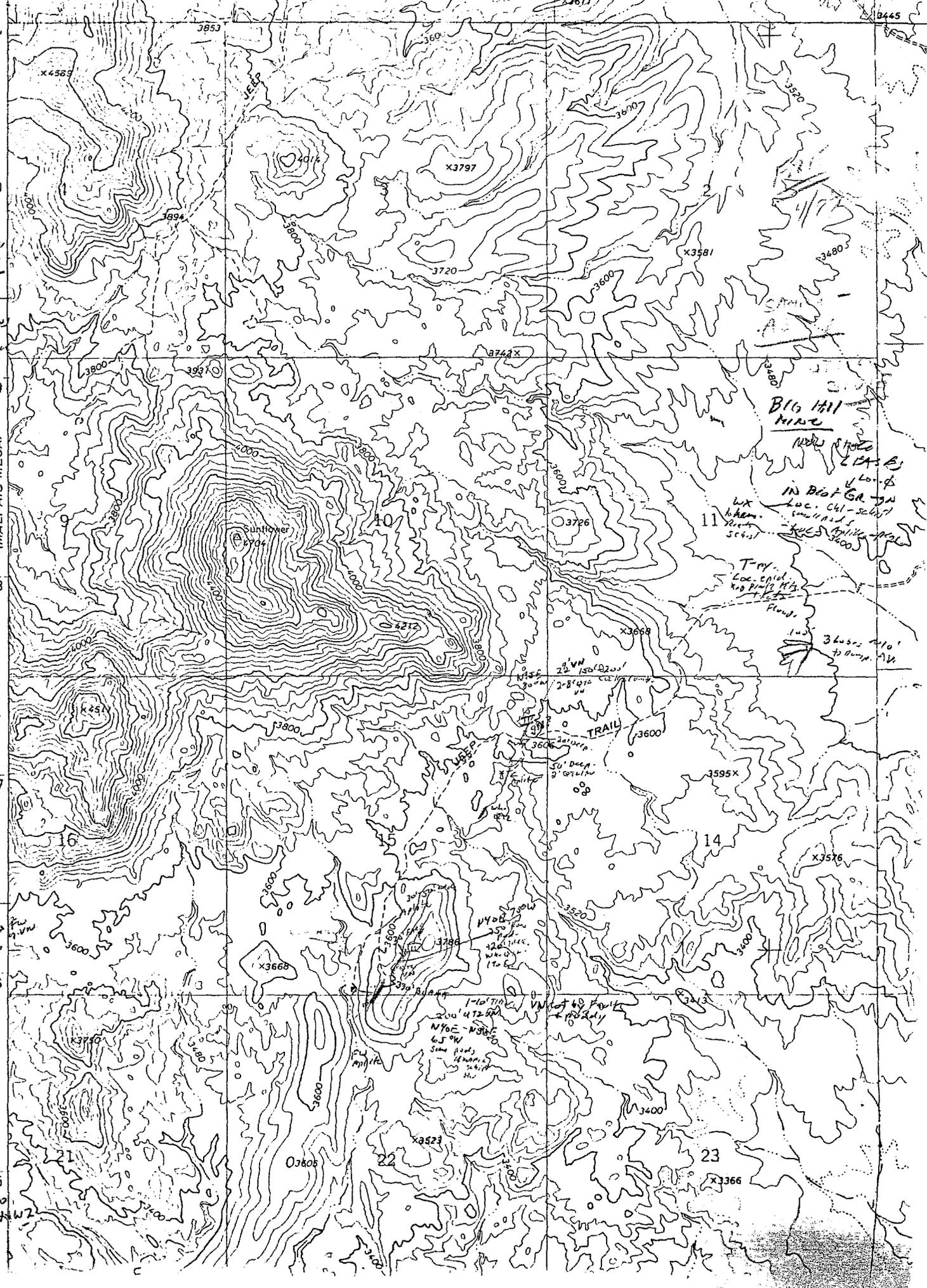
1427
1934
with
9 x 12

U6: 11/21/30
17'30"

17.03
1455
14 x 20
17'30"

75'
N40 W
50'

20' in
to WZ
50' down
to H20
3795
ADIT in 200
S75E to WZ



BIG HILL MINE
 NEW SHAFT
 L.C.A. B.
 Loc. of
 IN DIST. GR. 3N
 Loc. of 1st shaft
 Loc. of 2nd shaft
 Loc. of 3rd shaft
 Loc. of 4th shaft
 Loc. of 5th shaft
 Loc. of 6th shaft
 Loc. of 7th shaft
 Loc. of 8th shaft
 Loc. of 9th shaft
 Loc. of 10th shaft
 Loc. of 11th shaft
 Loc. of 12th shaft
 Loc. of 13th shaft
 Loc. of 14th shaft
 Loc. of 15th shaft
 Loc. of 16th shaft
 Loc. of 17th shaft
 Loc. of 18th shaft
 Loc. of 19th shaft
 Loc. of 20th shaft

TRAIL

10

16

14

21

22

23

10445

TAJ-481

ALL L.002 AD OOT
L.02 AD
L.01 PT
OOT

4/28 Samples. Dump nos.

SPIN #

BH-1 off SW Lobe of Dump. 60% Qtz. 26% St. sch. S.
TOC 1/2 H. T + Knox
AT open sample DIS

I-5 ✓ PT CK

BH-2. 1" 80% Qtz 36% St. sch. S. ^{some limon on fx}
1/2 H. T J M, Knox

BH-3. 1" NW Lobe of Dump. 40% St. sch. S. 5-10% Qtz
Rotten: X. J. SR (GN) 5-8% chert → Wx to h.

#3 ✓ PT CK

BH-4 1" 10T sorted pile 70-80% Qtz.

N side of Dump - AT stream bank
H=2, G=2
MN=T1 schist=5.
-Humboldt

1000 x 
4070 = 3080.
13

Date **March 23, 1949**

1. Mine **Arizona Gold Aster**

2. Location **Sec. 15-12 T. 11 N., S. 7 W.
Date Creek Mining Dist.
Yavapai County, Arizona**

3. Mining District & County **Date Creek
Yavapai, Co.**

4. Former name

5. Owner **Arizona Gold Aster Mining Co.**

6. Address (Owner) **Congress, Arizona**

7. Operator **Arizona Corporation**

8. Address (Operator)

9. President, Owning Co. **W. H. Hanson**

9A. President, Operating Co.

10. Gen. Mgr. **W. D. Hanson**

14. Principal Minerals **gold, silver, lead,
tungsten.**

1. Mine Supt.

15. Production Rate

2. Mill Supt.

16. Mill: Type & Cap.

3. Men Employed

17. Power: Amt. & Type

3. Operations: Present

*Call Mike
JACOBS*

3. Operations: Planned

0. Number Claims, Title, etc.

2122 claims, held by location.

1. Description: Topography & Geography

**Rolling hills, easy of access—diarite hornblende diarite,
quartz, porphyry.**

1. Mine Workings: Amt. & Condition

**3,000 feet of tunnels, drifts, shafts. Shaft will need
some new timbers before using—plenty of timber on hand.
Other workings in good condition.**

Geology & Mineralization Main quartz fissure extending 11,500 feet full length of the nine claims and from four to thirty feet wide. Diorite and schist hanging wall. Diorite footwall, ore schist.

Ore: Positive & Probable, Ore Dumps, Tailings One positive \$11.50 per ton in drifts, ore scats and back, about 30,000 tons, based on assays made from samples taken and assayed on property at this work was done. No work has been done on the tungsten ore (wolframite) scrapings are very good.

Dimensions and Value of Ore body

Mine, Mill Equipment & Flow-Sheet

Road Conditions, Route Good, two and a half miles to property from highway and railroad and loading siding. This road graded and bridged.

Water Supply Ample for camp, mining, milling. 300,000 gal. in storage underground from underground water 100 ft. west of ore fissure.

Brief History All work done was for purpose of developing water and ore ready for production. Conditions have made further financing impossible. Company will sell or lease on percentage. Property free from debt \$500,000

Special Problems, Reports Filed Share corporation. No stock issued--no special problems or reports filed.

Remarks Property is 80 miles from Phoenix, 18 miles north of Congress on the Hillside, Kingman road. Get direction at Lute Section on S road. The place where you turn off to go to property. Manager living on property.

f property for sale: Price, terms and address to negotiate. Property is for sale, small payment down, balance out of production 10% of exalter returns, or for lease on 10% of production.

(Signed) Arizona Gold Aster Mining Co.
 32. Signature..... By V. O. Benson, President, Congress, Arizona

See additional sheets if necessary.



Specialists In Precious Metal Recovery

2702 S. 45TH ST. PHOENIX, AZ 85034 (602) 966-8103

PROJECT J.F. SPANN

PP

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3435	12/5/86	Henry 1 Bag					

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Au		.19			fire assay
Au		.21			D.P.C.

COMMENTS

PAID

Please note: This report is prepared for and distribution is limited to the party specified above. J.B. Laboratory reserving the authorization right for publication of this report pending our written approval. This is for the protection of our clients, ourselves, and the public.



Specialists in Precious Metal Recovery

2702 S. 45TH ST. PHOENIX, AZ 85034 (602) 966-8103

PROJECT J.F.SPAN

PP

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3436	12/5/86	Henry 2					

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Au		trace			fire proceedure
Au		.09			D.C.P.

COMMENTS PAID

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PROJECT J.F. Span

PP

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
See Below	1/6/87	Henry Ore Samples. D.C.P.	5gm				250

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
3539		I-5 SAMPLE			
Au		.51	#1 from BA-1	.27	
3540		II-6 SAMPLE		.39	
Au		.77			
3541		#3 SAMPLE			
Au		.22	NW/USE BA-3	.35	BA-3
3542		IV SAMPLE		.29	
Au		.25			

COMMENTS

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PROJECT JF Spann

PP _____

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3541	1/5/87	Henry III	5gr.				250

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Os		.51			OSMIUM 4650
Pt		.35			PLATINUM 590
Ag		1.86			SILVER 560
Pd		Trace			PALLADIUM 110
Ir		.57			IRIDIUM 515
Ru		.16			RUTHENIUM 76
Rh		.13			RHODIUM 1100
Au					

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Specialists In Precious Metal Recovery

2702 S. 45TH ST. PHOENIX, AZ 85034 (602) 966-8103

PROJECT J. V. Spann

PP _____

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3542	1/5/87	Henry IV	5 gm				250

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Os		1.43			OSMIUM
Pt		.29			PLATINUM
Ag		1.09			SILVER
Pd		Trace			PALLADIUM
Ir		.42			IRIDIUM
Ru		.17			RUTHENIUM
Rh		.14			RHODIUM
Au		0.25 opt			

COMMENTS

Please note: This report is prepared for and distribution is limited to the party specified above. J.B. Laboratory reserving the authorization right for publication of this report pending our written approval. This is for the protection of our clients, ourselves, and the public.



Specialists in Precious Metal Recovery

2702 S. 45TH ST. PHOENIX, AZ 85034 (602) 966-8103

PROJECT

J. F. Spann

PP

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3539	1/5/87	Henry I-5	5 gm				250

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Os		1.02			OSMIUM
Pt		.27			PLATINUM
Ag		2.19			SILVER
Pd		Trace			PALLADIUM
Ir		.39			IRIDIUM
Ru		.16			RUTHENIUM
Rh		.14			RHODIUM
Au		0.51 opt Au			

COMMENTS

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Specialists In Precious Metal Recovery

2702 S. 45TH ST. PHOENIX, AZ 85034 (602) 966-8103

PROJECT J.F. Spann

PP _____

SAMPLE #	DATE	PROCESS TO RUN	WT TO USE	CON WT	DOR'E WT	DRILL WT	VOL ML
3540	1/5/87	Henry II-6	5 gm				250

ELEMENT	PPM	OZ PER TON HD ORE	OZ PER TON CON	OZ PER TON DOR'E	VALUES
Os		1.08			OSMIUM
Pt		.39			PLATINUM
Ag		5.50			SILVER
Pd		Trace			PALLADIUM
Ir		.49			IRIDIUM
Ru		.19			RUTHENIUM
Rh		.16			RHODIUM
<u>Au</u>		0.77	0.07 Au		

COMMENTS

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A. S. T. LABORATORIES, INC.
- Atomic Spectroscopy & Testing -

7340 E. Sweetwater Ave. * SCOTTSDALE, Az. 85260 * (602) 948-6907
 (602) 991-4320

CERTIFIED TEST REPORT NO : 0-0354

Date : 87/01/23
 Ast No :
 Customer : BIG HILL TAILING MINE
 Address : Rt.3
 City : Hillside State : Az. Zip : Country :
 Your P.O. : Verbal (J.F.Spann)
 Lot No : Heat No :
 Part No : S/N : Henry IV
 Job No : Material : Head Ore
 Specification :

CHEMICAL ANALYSIS - Semiquant
Common Elements

PBM's : PGE's :
Noble Elements

Ag : .005-.03	Ni : .005-.03	Ag :
Al : 1-.5	P : .1-.5	Au :
As : .5	Pb : .05-.3	Pd :
B : .005-.03	Sb : .03-.1	Pt :
Ba : .005-.03	Se : .005-.03	Ir :
Be : *	Si : Major	Os :
Bi : .003-.01	Sn : .003-.01	Rh :
Ca : .05-.3	Sr : .03-.1	Ru :
Cb : Trace	Ta : *	
Cd : .005-.03	Ti : .1-.5	
Co : *	W : *	
Cr : .005-.03	V : Trace	
Cu : .01-.05	Zn : .005-.03	
Fe : 1-.5	Zr : *	
Ga : .003-.01	S :	
Hg : .1-.5		
Mn : .005-.03		
Mo : *		

Values in : % Values in :
 * = <.001 % or N.D. ! Note ! = ***

N.D. = Not Detected !

1 ppm = .029 Oz.'s / Ton

*** = THE ELEMENTS shown, are in the values indicated, and are present in the sample in an uncombined state, or in physical combination with other material, or in a chemical compound with other elements. Such elements may or may not be recoverable in quantities indicated!

Respectfully submitted

J.F. Spann
 A.S.T. Laboratories, Inc.

ALL REPORTS are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions, or extracts, from or regarding them is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

The AZ Daily Star
Money Section
page 1-F
Friday, June 12, 1987

COMPANIES

Security Pacific National Bank unveiled plans for a major push to upgrade service, including placing its sales force on commission and creating roving salesmen to go to customers to make deals. Published reports of the number of workers affected range from 500 to 2,500. The retail banking segment of Security Pacific has about 10,000 employees.

Intel Corp., exercising its renewed financial strength, said it has repurchased more than 7 percent of its common stock from IBM Corp. for \$362 million. IBM remains the largest shareholder of the Santa Clara, Calif.-based semiconductor maker, with 11.5 percent of the stock, as well as its biggest customer. Intel returned to profitability this year after six straight quarters in the red.

TUCSON/ARIZONA

Arizona Silver Corp. will apply to the Bureau of Land Management for the necessary permits to begin development of the Burro Creek mining property 65 miles southeast of Kingman, the company's joint venture partner, Dominion Resources, announced. Gold and silver reserves on the property have a gross value of \$60 million to \$90 million at current prices, Arizona Silver said.

Del E. Webb Corp. 1987 results will be down substantially from 1986, company officials announced. "We had a first-quarter loss and, while we expect a good second quarter due to tax-related transactions, our results for all of 1987 will be down significantly," Robert K. Swanson, Webb chairman, said. Earnings in 1986 were \$19.6

9	3	6	Regular
9	9	0	Unleaded

Last week's averages:
93.2 Regular
98.2 Unleaded

The average price is compiled from a random polling of the cash price of self-serve gasoline at 10 Tucson-area stations

Below are the lowest prices reported for the past week

91.9 Regular - Ken's Texaco
3774 S. Sixth Ave.

97.9 Unleaded - Ken's Texaco

~~HEW~~, ~~F.R.K.~~ JGS

Have you any further info?

Rec'd 6/20/87
THW:GHT
JGS

Is this the
Burro Telegraph
et al zone?

The AZ Daily Star
Money Section
page 1-F.

Friday, June 12, 1987.

JGS.
possibly
TRIED TO GO IN SEU, HOURS BEFORE DRILL ON MAR 4, 1987 ON WAY BACK FROM NOTHING, AZ. DIDN'T MAKE IT.
DID LOOK AT SPECTACULAR VolcaniclasticS. THIS IS PROB. 2 (OR 3) PAGES CLAIMS. JF SPAN'S PROPERTY
WHICH I DID LOOK AT ~~IT~~ IS WORTHLESS OR CORREL WITH THICK TORT. GRAVELS.

- MY NOTES ON THIS ARE IN PERSON -

Yes, this must be the Burro-Telegraph
that Dominion Resources has under control. F.R.K.
followed up on this when he took over the
responsibility of Mojave Co. at the beginning of the year.

BOB HARRISON, BLM biologist (Kingman) Told me MARCH 5 THAT H.G.K
A CANADIAN GROUP HAD APPLIED FOR A cyanide ^{permit} FROM THE ARIZONA DEPT OF HEALTH SERVICES (OR SIMILAR AGENCY). THE STATE REGULARLY PASSES THESE ON TO BLM FOR COMMENT. THE
BLM IS INCLINED TO contest THIS BECAUSE OF Burro Creek Campaign downstream. THIS IS A "STAR" Campaign
IN REGION & they give N.P.S.-style Campfire talks by "Rangers" etc. LAST PEOPLE TO DRAIN AROUND Burro Creek
"FORGOT" TO CONTACT THE BLM OR FILE PLAN OF OPERATIONS (FOR ACCESS). ARIZONA STATE HAS A VERY CHECKERED HISTORY
(White Hills, Mohave Co; Oro Blanco, Santa Cruz Co etc.) & IS MOSTLY PROMOTIONS BUT DO BUILD SHAM MILLS etc.
Mohave Co Sheriff attached "part of Ariz Edwin D White Hill - an Early sale to Gold Bu. Mine" Some of Dore produced at White Hill

CONTACT AG-AG FOR THIS RELEASES, INFO
WHEN I GET BACK TO TULSON.





June 24, 1987

To: J. D. Sell

From: F. R. Koutz

Quarterly Report
Second Quarter 1987All General Exploration - All Au (Ag)

Mohave County, AZ (26 days) Mostly Black Range and Gold Basin Areas

Cyclopic/Gold Basin: Detailed field exam + grid soil sampling on color anomaly on strike with Cyclopic shows no Asarco drill targets.Liberty Mine Area: Freeport drill/geochem. data shows only spotty ore grade mineralization. Data for files.Secret Pass: Evaluation of extensive Santa Fe/Pacific mapping, geochem, drill data shows no targets of significant size unevaluated. International Prospectors Ltd./Fischer-Watt will grid drill to develop some 10-30,000 oz. potentially open-pittable mineralization.Mossback Property: Field/data (Crown Resources) evaluation of central intrusive dome/caldron margin zone north of Oatman-Gold Road shows all significant targets have been tested. Extensive hot spring zones here with anomalous Hg do not shallow Au-Ag deposits make.Miscellaneous: Short visits/comments (see monthly reports): Van Deemen, Gold Bug, Mockingbird, Pilgrim, Frisco Mine, Gold Road, Portland, Roadside, Arabian, Moss Mine, Greater Oatman District, White Hills. Half day Big Hill Mine, Yavapai County.Esmeralda County, Nevada (26 days). Half has been literature/file/property review, travel, logistics. Half has/will be field reconnaissance - property evaluation/sampling. Epithermal mineralization associated with Miocene volcanoclastics is the primary target. Hot spring Hg districts in the Montgomery Pass area and areas of recent activity in the Monte Cristo Range (Gilbert District) will be initially emphasized. The Lone Mountain submittal: spotty Au-Ag mineralization associated with Miocene and Cretaceous dike swarms has been rejected for lack of obvious shallow drill targets and poor teams. *teams.*Miscellaneous: 7 days Tucson office. Sort and dispose of Salt Lake City Geophysical Office files, muck out Ventura Warehouse, miscellaneous reading and clean up. 20 Weekend and holidays.Forecast: 3rd Quarter: Esmeralda County; log TM-14 assessment drilling.

FRK:mek

F. R. Koutz

cc: P.G. Vikre (GBED)

July 30, 1987

R. L. Brown
New York

F R Kouty
July 1987
Monthly Report
Mohave County, AZ

	<u>Field Days</u>	<u>Office Days</u>	<u>Samples Collected</u>	<u>Assay Cost</u>	<u>Expense Account</u>	<u>Truck Expense</u>
To Date	39	32	124	\$1,314.80	\$3,412.71	\$1,499.89
July 1987	0	0	0	0	0	0

Only a few hours were spent this month on Mohave County. ERS sheets were published on Van Deeman, Pilgrim, Secret Pass and Mossback. A complete Freeport data package on the Liberty Mine was obtained from C. Kunkes, owner of hundreds of claims in the N. Black Range, including Van Deeman south of Mockingbird. This data should contribute to our geological/geochemical understanding of this district. Mr. Kunkes is busy drill and sample plant testing several of his placer deposits which he promises to show me in the fall--a good lead to potential open-pit lode Au.

At Van Deeman Arizona Star had completed 7000' of RDH by early July and the total of 10,000' (or possibly 12,000') should be completed by now. Results are apparently quite encouraging, but exact results "have been embargoed to prevent stock manipulation." AMIR Mines Ltd. is buying out 54% of AZ Star (GCNL-5/22/87) and wants to buy more including Fischer-Watt's half. AMIR is in cahoots with Glamis Gold on a number of projects in the W. U.S. Glamis has previously drilled at Van Deeman.

At Frisco (Union Pass) drilling, re-sampling and promotional work continues (GCNL 6/12, 6/29) as reported last month. I neglected to report that the owners (Bonelli Family) told me that they had 0.6 MT @ 0.06 opt Au, but 0.08 MT was based on 1 RDH. Their 10% NSR was too steep for Red Dog (Glamis) that previously did a considerable part of the drilling.

The last leaching in 1985 on the Bonelli Frisco pods was several 1000 T test of "ore" from Sharon Steel's 6 patented claims (Bi-Metal Mine) at McConnico siding (ATSFRR) 3½ miles SW of Kingman also under US 66, 1-40 and several junkyards. The Bonelli's report reserves of 120,000 T @ 0.065 opt Au from ± a dozen RDH. Asarco's M. Stockder mailed 114-5' samples UG in 1915 and estimated perhaps ½ MT @ 0.036 opt Au. Others have estimated 1 MT @ 0.13 opt Au and in the 1930's some 20,000 T were quarried which might have averaged ± 0.08 opt. The deposit is pyritic quartz veins and breccia-matrix in pe granite with aplites, mafic dikes and considerable low angle shearing. There undoubtedly has been mechanical enrichment of the gold at this break in the pediment. Although I was not impressed with the extent of mineralization in the several hours I was at

the quarry and in spite of the thick post-mineral volcanic cover, super-saturation with transportation facilities and 100's of NICOR claims (pediment + post mineral volcanics), I believe this area needs to be looked into further.

Dave Cockrum of Galli Exploration (home base: Chloride: 565-4486) reports that they have completed their mapping at Pilgrim and built a dozen or so drill pods and numerous roads for 86-87 assessment work. They have postponed drilling until fall when rigs will be more available at more reasonable rates. I had previously expressed interest in the property. He suggests I contact his manager (Dave Fanning, Reno 702-786-7667) which I will do in the near future.

Paydirt (June 1987) reports that Alanco (Anthony Lane) will reopen the C.O.D. mine in the White Hills district (Ag>Au in quartz veins in granite) halfway between Gold Basin and Van Deeman. Although they claim 100,000 T reserves, Arizona Silver, the previous "operator," was not able to make a go at the reported 20 opt Ag and $\frac{1}{4}$ opt Au. Alanco has been previously tied up with such shady dealings at the Blackhawk Slide (Lucerne Valley, CA), Haber Gold and a custom mill in Tombstone.

A field trip for Graybeal, Kurtz and Sell to NW Mohave County has been tentatively planned for the late fall.

FRK:mek

F. R. Koutz

cc: J.D. Sell
W.L. Kurtz

[Handwritten initials]

July 31, 1987

R.L. Brown
New York Office

Monthly Report
July 1987
Esmeralda Co., NV

*My 34 samples to Cone
sent up 5 from sac on 7/13
were returned on 8/16 for
As, Hg, Ag. Au 1000
to be returned 1/8/88*

	<u>Field Days</u>	<u>Office Days</u>	<u>Samples Collect.</u>	<u>Assay Cost</u>	<u>Expense Account</u>	<u>Truck Expense</u>
To Date	31	19	178	\$2,893.79	\$1417.22	\$929.63
July 1987	15	6	131	\$1,731.95	\$662.23	\$260.51

Results of 100 of 119 samples submitted a month ago to Cone Geochemical have just been received. The last 59 samples collected have been delivered to Skyline *Ne* anticipating a saving of 1-2 weeks time and 1/3 of total costs (including discounts).

Results from the Cuprite District (Ralston) 11 mi. S of Goldfield were quite disappointing. This area has 3 mi² of siliceous sinter, opaline, silicified and argillized volcanoclastics, epiclastics of Miocene Siebert and Pliocene Thirsty Canyon Tuffs show considerable alunite, jarosite (pyrite at depth) with minor production of native sulphur, cinnabar and clay with major production (when the RR was 1/2 mile away) of silica products. The epithermal alteration is so blatant that the USGS (OFR-80-367) used the district as a test site for partially successful alteration mapping using airborne multispectral scanners. My 47 geochemical samples had only 21 values >1 ppb (including 2 values at 19 ppb maximum), 4 values >.2 ppm Ag, 5 values >100 ppm As (139 ppm max), 9 values >1 ppm Sb. 24 Hg values were >1 ppm with 5 >5 ppm (to 220 ppm)- not surprising in this Hg district. Although I did not necessarily expect high Au-Ag values, except in structure results are so low that I must reduce this area to a lower priority. I will, however, spend another day in the district with USGS "ground truth" in hand and will contact the claim owner on non-Homestake ground for possible additional information.

Results were poor from most of 53 samples of drill cuttings of recent vintage in the Klondike District 12 mi. S of Tonopah. A braided series of Ag-Au mineralized quartz veins parallels the 30° dip slope of Cambrian Emigrant Siltstones and Limestones in the hanging wall of a sub-parallel thrust. The thrust and stratigraphy are intruded by a 104 m.y. unusual muscovite granite. 17,000 T @ 26 opt Ag and 0.15 opt Au production came from these veins-- mostly from a down-faulted portion of the vein system below potential open-pit depths. The veined cuesta is exposed over 1/2 mile strike, 300' average width and ±100' true thickness. Half of some 50 June 1987 airtrak holes 20 to ±50' depth in 4 en echelon lines along the wider, better-looking part of this zone were sampled. Only 5 values were >.01 opt Au (1 @ .037) and 3 values >1 opt Ag (1 @ 2.8 opt Ag). Composite samples from several older deeper RDH campaigns, mostly near mineralized structure gave worse results. There is nil potential for significant Au-Ag open-pit mineralization in this district and the similar E. Klondike district 2 1/2 miles SE. Klondike along with Lone Mt. last month showed that Mesozoic-Laramide mineralization is not as attractive an Au-Ag target as the Miocene.

Eight samples (results pending were taken from a tan color-anomalous pediment outcrop zone 4 miles N of Goldfield. This is the weakly deuteritic, baked and case-hardened lower contact of Thirsty Canyon ignimbrite with Siebert Arkose. The Siebert

although post-Goldfield mineralization is locally moderately jarositic here with one 150' prospect shaft.

Most of the remainder of the month has been spent on the Monte Cristo Range including a day's tour for Graybeal, Kurtz and Vikre. I was so impressed after 2 days initial recon that I visited the courthouse to determine claim status in 8 townships. Well over half of the 1000's of claims have been dropped, optioned, restaked, repapered or otherwise changed hands in the last year culminating with the rise of metal prices this spring. I am presently evaluating open then held ground for staking/acquisition.

The range is horseshoe-shaped, open to the north. Geology consists of a basement of Ordovician Palmetto cherty siltstone>limestone overlain by Miocene andesitic to rhyolitic volcanoclastics, epiclastics and intrusives. Of most interest is the generic Esmeralda Formation with a lower tuff breccia and upper white air-fall tuff and lacustrine unit. The upper unit is now called Siebert Formation. Overlying these are Gilbert Andesite lava and ash-flows with local epiclastic beds. Locally QT basalt caps are present. A klippe of Excelsior Triassic greenstone breccia over contorted Palmetto--crops out in the west part of the range. This is part of the Monte Cristo Thrust--one of a number of stacked thrusts above the Roberts Mtn. Thrust. Mineralization is concentrated along NNW high angle fissures and locally spreads out--becomes stockwork-like along low angle contacts, often showing close association with 8 m.y. rhyolite domes. The major Au-Ag mineralizing epoch in the region is \pm Miocene. Gilbert is Early Pliocene (\pm 8 m.y. adularia).

St. Joe Gold has an active drilling project in the west part of the "horseshoe" with 40-60 RDH on 400-500' spacing and extensive drill roads and trenches. Ex-employees say they have 2-3 m.t. @ .02-.04 opt Au with $\frac{1}{2}$ m.t. @ .065 opt Au and lots of spotty. .05-.08 opt. This is apparently developed along the Palmetto--volcanic contact and in limey, low angle brecciated beds in the Palmetto. The local geologist busily doing the biennial repaper job of the halo claims says the project is not for sale, but that the company is--contact Fluor.

In the east interior of the range Kemex (an Illinois Construction Co.) is building leach pads at the main Gilbert District (ex U.S. Borax (Corn-Ahern)-Anaconda-Felmont) for a guesstimate $\frac{1}{2}$ m.t. @ .04-.06 opt Au developed in lower Esmeralda tuff breccia and underlying andesitic grit and volcanoclastics. This subsinter mineralization is part of an 8 mile N20W by $\frac{1}{2}$ -1 mile wide zone, apparently all staked with \$105,000 production: 2/3 Au. J. Prochnau has recently drilled 40-50 RDH on 100-200' centers N and S of Kemco. I have taken 18 cuttings and outcrop samples in these areas and P.G. Vikre will contact Prochnau for information. Some attempt will be made to obtain Anaconda's geology and results of \pm 40 RDH (DDH?) in the district (Ag-Au \pm Mo deep target).

In the outer SE portion of the range Falcon Exploration since May has some '30,000T of a proven 0.7 m.t. @ .055 opt Au presently leaching on the pads. This is developed in bleached, heavily fractured and hematite-stained Gilbert (?) Andesitic grit near Miocene (?) rhyolitic intrusives broken up by a NE range-front grabben with Palmetto "basement." Homestake has the surrounding outcrop and pediment extensively staked,] overstaked and optioned as of April 1987.

One to two weeks additional recon in the Monte Cristo Range is scheduled, concentrating on the spectacular rhyolite domes visible along the outer east portion of the horseshoe

(considerable ground now open) and other "Esmeralda" Fm rocks. Other exploration this summer/fall will concentrate on these Early Miocene - Early Pliocene volcanics in the northern part of the county.

At the end of the month 40 claims were staked covering the Alum District about 10 mi. N of Silver Peak in the West Weepah Hills. These are around 2 patented placer claims with previous native sulphur and alum (Kajinite) production ± cinnabar. Host rocks are a bleached sub-sinter Siebert Tuff (Esmeralda) lacustrine subbasin over Palmetto Fm. Previous claimants report spotty but anomalous Au, Ag, Zn, As, Sb, Mo and Hg. Some 20-40 (or more) additional claims will be staked on outcrop and pediments especially to the west, and the patented claim owner contacted. Sampling/detailed geology is for next assessment year.

I plan to work out of Tonopah for another two weeks with the last of the month in Tucson.

FRK:mek

F. R. Koutz

cc: W.L. Kurtz
P.G. Vikre

August 5, 1987

F.R. Koutz
Tucson Office

*Emerald Lake
NV*

Reports

Your Lone Mountain Prospect Report is good. Please keep a short, concise summary in all future reports. I believe the back-up detail you give is an essential part of our reports and you should continue to do so, but always keep that short, concise, clear summary on top. By the way, the detail is much easier to read and follow this time. I'm continually amazed at how much data you collect in a short time.



W. L. Kurtz

WLK:mek

cc: R.L. Brown/F.T. Graybeal
J.D. Sell

ASARCO

Southwestern Exploration Division

WJK

JDSell —
page 1 meets the

July 15, 1987

URK requirement

To: P.G. Vikre

remainder well written
by the detail!

From: F.R. Koutz

Lone Mountain Prospect
Lone Mountain District
Esmeralda County, NVSummary and Conclusions

Two field and two office days were spent studying an 84-claim submittal 12 miles west of Tonopah. Anomalous gold (0.1-0.3 ppm), silver (2-20 ppm) and arsenic (500 to +1000 ppm) as well as Hg, Mo, Bi, Pb, Cu, Zn and other elements are generally restricted to within ten feet from Laramide quartz monzonite - granodiorite and Miocene andesitic to rhyolitic dike swarms into Early Cretaceous diorite and Cambrian carbonates and siltstones. The property is on the NE flank of the Lone Mountain batholith mostly in the upper plate of a low-angle ($\pm 30^\circ$ NE dipping) regional thrust (above the Roberts Mountain Thrust). The rhyolitic dikes fed stratiform tuff breccias and hot spring aprons which have been tilted gently eastward and with arkoses and epiclastic sediments mostly eroded from the property. The Miocene rhyolitic events have the best Au-Ag regionally; however, at Lone Mountain they are subordinate mineralizers.

The best altered portion of the property has strings of jasperoid bodies up to 500 feet long and 100 feet wide developed near the sole of the regional thrust adjacent to Laramide intrusives. High arsenic Pb-Ag \pm Cu (Zn?) \pm Au mineralization is restricted to the margins of jasperoid and negligible tonnage has been produced. This property has not been drilled and would take several weeks of sampling and several hundred samples with multiple element assays to attempt to develop a viable though probably deep, drill target. The fact that silicified-altered and mineralized zones armor higher topography and the 400-500 feet of relief suggest that no viable shallow Au-Ag drill targets exist on the ground. Front money and annual payments are stiff for such a raw project which lacks required (physical) 1986-87 assessment work. Although the geology is quite interesting I believe the potential for an open pit gold deposit is low and the project is not for us unless it were almost free.

The following provides much more detail on the history-business terms, complex geology and results of 152 samples by others as well as a short discussion of the regional/district significance of this widespread anomalous but weak mineralization. An ERS plus district geologic map are attached. Examination of the intricate 1"=430' planimetric geology map with the submittal report would greatly facilitate a detailed understanding of the property.

Introduction

The Lone Mountain Prospect 12 miles west of Tonopah, Nevada, was submitted via J.C. Balla from Dr. A.P. Juhas, ex-Chief Geologist of Texas Gulf, now a consultant and promoter for the property. Some 37 lode claims were staked by prospectors J.W. & N.R. Mueller in 1982. Felmont had a 6 month option in 1982 and sampled the property. AVF Minerals, a Canadian oil group, sampled the property in 1983 and optioned the ground from 1984-86 staking additional claims to a total of 69, extensively sampled and mapped (1"=430', photo base) the property. Dr. Juhas was a consultant to AVF and put together the present submittal package with uncolored geologic map, some 150 assays - mostly for Au, Ag and As and summary map (1"=860') showing 6 targets which according to Juhas need more sampling preparatory to drill-testing. Billiton looked at the property in 1985 and collected 20 samples. Late this spring Precambrian Exploration of Wheat Ridge, Co. had staked about 400 claims N and NW of the Lone Mountain claims. In response Juhas has staked an additional 15 claims for protection. 1986-1987 Assessment work has not been completed on 69 claims and physical work is necessary this year on 37 claims.

I talked with Juhas on June 17 about the property and he gave me Mueller's initial terms: Lease-option or sell cash or stock \pm \$300,000 (prob. more if direct buy-out). Lease-option 69 claims (+15) + 1 mile area of influence.

\$15,000 Down	\$ 50,000	3rd Anniv.	5% NSR. Only year 3-5 is
25,000 1st Anniv.	50,000	4th Anniv.	part of advance Royalty.
50,000 2nd Anniv.	100,000	5th Anniv.	First 3 payments direct
			"rent" to owner.

Work Commitment = assessment work. Nothing is directly due to Juhas. He gets equity interest from owner.

I spent 1-3/4 days mostly walking the property examining lithology, structure and alteration/mineralization, plus another 2 days coloring out the intricate geologic map, plotting assays, reading and visiting parts of the surrounding district and writing this. I took no samples as the ground has been adequately sampled for reconnaissance purposes several times.

Lithology - Structure

The property is underlain (Attach. 1) mainly by weakly to moderately metamorphosed argillites, siltstones and limestones of Precambrian to Cambrian age on the NE flank of the Lone Mountain Batholith (quartz monzonite: 67-71 m.y.) 3 to 5 miles SW. The Precambrian sediments are mainly Deep Spring Limestone (marble) and Siltstone exposed in the lower plate of a major \pm 30° NNE-dipping thrust. In the upper plate generally less metamorphosed Cambrian Harkless Siltstone > Limestone crop out. The sediments generally strike NW, dipping \pm 30° NE, but may be highly contorted near the subparallel thrust fault or other higher angle faults. The upper plate sediments are intruded by Cretaceous (\pm 110 m.y.) hornblende diorites > gabbros and by

lesser amounts of 61-71 m.y. granodiorites to quartzite monzonites. The intrusives are irregular but generally trend NW parallel to the strike of the sediments and have a weak fabric, especially the earlier diorites. Some of the fabric is undoubtedly due to intrusion, but some is clearly related to thrusting.

A progressive series of NW-striking andesite, dacite porphyry then rhyolite porphyry dikes > sills (16-22 m.y.) form an intricate braided network across the property. The porphyries have distinct aphanitic phases and apophyses. There are only a few dikes in lower plate marbles - all andesite, dacite and rhyolite and in several cases latest movements on the thrust or related faults has cut off these dikes.

Bonham and Garside (1979, NBMG Bull. 92, p. 102-103) state that the exact age of thrusting is unknown but suggest Mid-Jurassic to Early Tertiary. The thrust-plane outcrop is often obscured by talus, colluvium and jasperoid, but it seems at least sub-parallel to bedding of both the upper and lower plates. In addition, some $\frac{1}{2}$ - 1 mile of section has been cut out by the thrust, the thrust cuts progressively across stratigraphy on a district scale and is younger-over-older. These facts suggest to Bonham and Garside that the thrust is part of a major regional low-angle structure which has been tilted by high angle faults of Tertiary age. This is probably one of the stacked thrust plates above the Roberts Mountain Thrust. The Roberts Mountain Thrust projects through Tonopah. Listric normal faults offset these regional thrusts.

In detail a complex series of NW > NE high angle faults orthogonal to bedding strike and later E-W and N-S faults cut the property. These faults have guided dikes and much of the alteration and mineralization. Amounts of offset on these faults appears limited to less than 100 feet usually less than a few tens of feet and intermittent movement is obvious. In detail exact faulting, intrusion and alteration sequences are often enigmatic.

The NE portion of the property is covered by basal Siebert (± 19 m.y.) "Tuff" mostly arkose, fanglomerate and epiclastic tuff beds. The arkoses are obviously locally derived from the Lone Mountain pluton and other coarse-grained Cretaceous intrusives onto a Miocene pediment surface since tilted 15-30° ENE by listric and/or Basin and Range Faults.

At the base of the Siebert Arkoses is a distinctive rhyolite tuff breccia mapped by AVF Minerals as jasperoid breccia and by Bonham and Garside as Intrusive Breccia. In the several hours I spent in the area this appears to be quite similar to our Hardshell (AZ) rhyolite tuff breccia: Rhyolite-rhyolite porphyry breccia fragments, a few with eutaxitic banding in a hematitic to goethitic-rich ($\frac{1}{2}$ -2% v.f.g. pyrite), vitreous to cryptocrystalline silica-rich matrix. The important point is that the major body of this unit appears to me to be bedded rather than intrusive although to the NNW tongues of this unit can be noted along silicified unconformities (?) in arkoses and

tuffs (mapped as faults). The breccia can also be projected westward to Miocene pediment surfaces as relict fragments on old soil surfaces, hence the light pinkish color anomalies. The Miocene pediment surface would be a vent-hot spring apron surface locally, hence the "jasperoid." The rhyolite-rhyolite porphyry dike swarms are probably feeders and coeval to the tuff breccia in basal (or pre-?) Siebert time. On closer examination, however, parts of the breccia may prove to be "intrusive."

Alteration - Mineralization

Precambrian - Cambrian sediments have been more or less weakly to moderately regionally metamorphosed-recrystallized with contact metamorphism - alteration related to Cretaceous and Miocene intrusives. However, little evidence of calc-silicates was usually noted beyond traces of tremolite needles in the lower plate marbles and some weak diopside (?) - epidote-Kspar in Harkless Argillites-hornfels near Cretaceous intrusive contacts. Alteration is dominated by silica flooding (jasperoid) with several percent pyrite, weak chloritization of mafics and sericitization-argillization of feldspars in intrusives and "bleaching" in sediments. Local quartz chlorite-epidote \pm pink K-feldspar veinlets were noted particularly in the diorites-gabbros. There appeared to be weak development of adularia (?) in some of the rhyolite porphyry dikes. No definitive alunite was noted. The usual zebroid textures are locally weakly developed in Harkless (carbon-rich) limestones usually near jasperoid and cretaceous intrusives. Thin (1-3') quartz and quartz-calcite veins some with little iron oxide or other mineralization are found in a number of faults and along contacts. Late brown carbonate veinlets are locally common.

Alteration is generally restricted to within a few tens of feet of intrusive contacts and is probably of multiple ages--both Cretaceous and Miocene. Diorite-gabbro contacts with sediments, however, show only minimal alteration and are often quite sharp suggesting that little mineralization took place in Early Cretaceous (110 m.y. diorite). Jasperoid bodies do reach up to 500' long x 100' wide especially near the district thrust sole and nearby quartz monzonites and granodiorites.

Mineralization as represented by several percent pyrite run largely jarosite-goethite-hematite is generally even more closely restricted to intrusive contacts--almost always less than 10 feet wide. Small pods and stringers of cerussite after anglesite-galena with traces of malachite and rare wulfenite are locally found in the thin gossany zones in the SW part of the property. These and elsewhere traces of yellow-green oxides suggest mimetite or other As-Sb oxidized minerals. To the south of the property along diorite porphyry dikes through the Deep Spring Marble Pb-Ag (cerussite) ores were mined on a limited scale. A few shafts and adits to 100' and a few thousand tons of jasperoid on the dumps of 6-8 areas in the SW jasperoid portion of the property suggest production of Pb-Ag (Cu-Au) ores of only a few 100 tons. Hundreds of other prospect (or location) shafts-pits are limited to a few tens of feet depth along contact zones.

Sampling

Dr. Juhas has provided the results of 152 geochem assays--mostly for Au, Ag and As with a 31 Hg analyses. Data is not provided for 50 or so other sample localities shown on the 1"=430' map, some off or on the margins of the property and sample number sequences suggest other assays not included. Thus the assay group must be considered "edited." Except for the Billiton samples no notes are provided and few widths are provided; most samples are grabs, a number are obviously high graded. I visited about half of the individual sample localities--the best that could be recovered without the air photo base, but enough to determine that most sampling was "dump grab" or over very restricted widths.

Higher gold values generally ranged from 100-300 ppb, 2-20 ppm Ag and 500-+1000 ppm As. Of 35 samples listed in the east half of the south jasperoid area (target "#1") 19 samples with >100 ppb Au averaged 280 ppb Au and 13 ppm Ag with 15 samples >1000 ppm As. Values this high were considerably more spotty in other mineralized "target" zones. In target area 5 "silicified fault zones (Tertiary)" on the NE side of the property 28 of 40 Au values were at or around the 5-10 ppb Au limit of detection and only 6 values were >100 ppb. Except in jasperoids related to Kgrd-qm intrusions As values were generally <100 ppm even with relatively high Au-Ag values. Hg values were generally higher (1-3 ppm max.) on the eastern ("hot springs") side of the property. Overall only 9 samples each had >.015 opt Au or >1 opt Ag. Thus nil ore grade material outcrops.

Regionally the area around the Lone Mountain prospect shows one of the best, most extensive composite multi-element anomalies in the Tonopah, Lone Mountain, Klondike and N. Mud Lake 15' Quads (Bonham and Garside, 1982 NBMG Bull. 96). Only 3 samples were taken on the Lone Mountain prospect proper, but some 49 samples were collected in the surrounding 1-3 miles NW, W and S on the NE flank of the Lone Mountain Batholith. Most of these samples represent restricted veins/structures. Au and Ag were generally anomalous in lower plate or in Cretaceous intrusive areas. Pb, Bi, Cu, Hg were mostly highly anomalous and W, Zn, and Sb weakly to moderately anomalous in the lower plate and western areas of the district. As and Mo anomalies at low to locally strong (especially As) generally covered much of the district. Much of this appears to be reflecting district zoning away from the Lone Mountain pluton. The geologic-structural environment extends for some 10-12 miles along the NE-E flank of Lone Mountain.

Discussion

Both alteration and mineralization is restricted to narrow halos around Cretaceous-Early Tertiary - granodiorite-quartz monzonite intrusives and Miocene dike swarms. The low angle thrust zone is also obviously a zone of better alteration and locally better mineralization. Although most mineralized zones show moderately to strongly anomalous Au-Ag a negligible amount of this approaches ore grade and there has been nil production from the property. The

500 feet of relief is enough to suggest that exposed subgrade Au-Ag values do not get better within several 100 feet depth. In fact, silicified contact zones, jasperoid ribs as well as vertical rhyolite dikes hold up higher topography. Thus there is little chance that a shallow Au-Ag ore body might be developed on the immediate Lone Mountain claims.]

The gently east-dipping Miocene basal Siebert Formation - pediment surface was probably the subaerial surface when mineralization related to the dacite porphyry, to rhyolite porphyry dike swarms was taking place. The rhyolite dikes were the apparent better mineralizers at least in the upper thrust plate. Thus only a few 100 feet of material has been eroded from the "deeper" western part of the claims and may explain some of the east-west zoning noted by Bonham and Garside, 1982. The mineralization related to Laramide intrusives is much stronger (and As-rich) than that related to the pre-Siebert rhyolite porphyries. If much mineralization is Miocene, it could be a remobilization of intermixed Laramide zones. The big Au-Ag producers in the region are Miocene not Laramide.

Overall I see no immediate drill target on the Lone Mountain property. I must also agree with Dr. Juhas that although the area is a large system with widespread evidence of mineralization the area needs additional multi-element sampling to reliably develop a drill target. It would take 10-14 days and several hundred samples to attempt to develop such targets. The best drill target at present is the Laramide jasperoid-granodiorite intrusive area in the SW portion of the property in the deeper portions of the upper plate. The thrust contact itself might make a good mineralization host beneath the best surface jasperoids plus rhyolite dikes +Au-Ag-As but with the 30°(?) dip may well be deeper than 500-1000'.]

The thrust plate although probably with some post Miocene movement was probably relatively static during Laramide and Miocene mineralization so values would probably continue into the lower plate. With the required \$3700 physical work and \$6900 total work due by September 1 and heavy front money requested, this is just not a presently attractive property. The geology, however, is fascinating and the area should be kept track of. If it becomes less expensive or the claims are dropped, it might be obtained and examined in more detail.]

Asarco has previously tested this geochemically anomalous environment. In 1975 Salt Lake Exploration Division as part of their "I.P.-Pediment Drill Program" drilled 2-500' RDH some 5 miles SSE of the Mueller Lone Mountain claims. They apparently stayed in upper plate Cambrian carbonates and quartzite cut by diorite dikes. They found minor disseminated pyrite and Cu, Pb, Zn sulfides with up to 200 feet of several 100 ppm Zn. The I.P. anomaly was due to graphite in the carbonates and argillites. The target was a porphyry Mo-Cu deposit which is probably also a viable target deep

under the present Lone Mountain claims. The Miocene mineralization is just not strong enough to be of major interest now.

FRK:mek

F. R. Koutz

Attach:

Lone Mountain Geologic Map (NBMG Bull. 92)
ERS

cc: W.L. Kurtz
R.L. Brown/F.T. Graybeal

ASARCO EXPLORATION RECORD

31240 Conifer, CO 80433 (Golden now)

FIELD EXAMINATION LITERATURE SEARCH None ASARCO FILE Submitted-Promoted by:
 69 (1982-84) Lode Claims
 + 15 (1987) Lode Claims
 A.P. Juhas 303-985-5722

Section I General Indexing

① Name(s) of Property or Area Lone Mountain Prospect (Mueller Claims)				② County Esmeralda		③ State or Province Nevada	
				④ USGS Quad. Lone Mtn. 15'		⑤ File or Core No.	
⑥ Latitude 38°04'N	⑦ Longitude 117°26'W	⑧ AMS Sheet Tonopah	Township 2N	Range 40E	Section 1,2,3 34,35, 36	⑨ Examined by F.R. Koutz	⑩ Date 6/18-19/87
						⑪ Office SWED Tucson	⑫ Field Days 1-3/4

Section II Sources of Information

⑬ References	Date	Title	Publications	Vol. No.
Juhas, Allan P.	5/87	Lone Mtn. Prospect	Submittal data +1''=450' Geol. Map	
Bonham & Garside	1979	Geol. of Tonopah, Lone Mt, Klondike, N. Mud Lake	QUAD. NBMG Bul. 92	
" " "	1982*	Geochem. Recon. (above Quads)	NBMG Bul. 92 Maps 1:48,000	

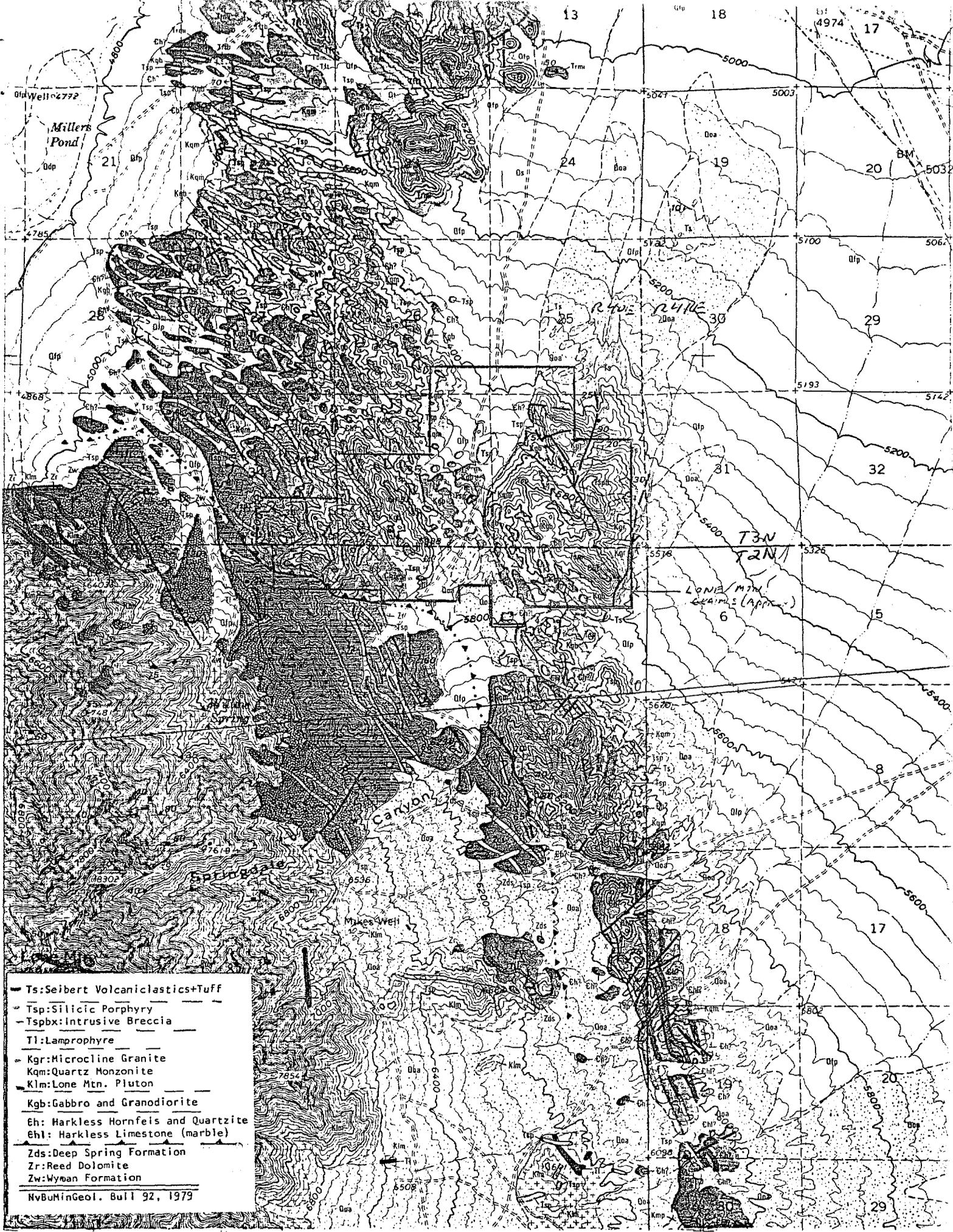
Section III Appraisal

⑭ Recommendations <input type="checkbox"/> Action Now <input checked="" type="checkbox"/> Too Low Grade <input type="checkbox"/> Too Small <input checked="" type="checkbox"/> Ownership Problem <input type="checkbox"/> Access Problem <input checked="" type="checkbox"/> Keep track of	⑮ Post Producer <input type="checkbox"/> Producer <input type="checkbox"/> Mineral Deposit <input type="checkbox"/> <input checked="" type="checkbox"/> Prospect 5 mi. SSE →	<input type="checkbox"/> Geologic Concept <input checked="" type="checkbox"/> Geochem Anomaly <input type="checkbox"/> Geophy Anomaly 2:500' RDH <input checked="" type="checkbox"/> Asarco - 1975	⑯ Production <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Commodity</th> <th>Tons</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>Au ore</td> <td>X00</td> <td>?</td> </tr> <tr> <td>Pb-Cu(Au-Ag) Ore</td> <td>X000 ?</td> <td>to S&W of claims</td> </tr> </tbody> </table>	Commodity	Tons	Grade	Au ore	X00	?	Pb-Cu(Au-Ag) Ore	X000 ?	to S&W of claims	⑰ Reserves <input type="checkbox"/> Measured Commodity <input type="checkbox"/> Estimated Tons NIL
	Commodity	Tons	Grade										
Au ore	X00	?											
Pb-Cu(Au-Ag) Ore	X000 ?	to S&W of claims											
⑱ Num. Drill Holes 0 Approx Total Footage 0	⑲ Excavations 6-8 Shafts to 80' 50-100 prospect pits												

Section IV Geologic Data

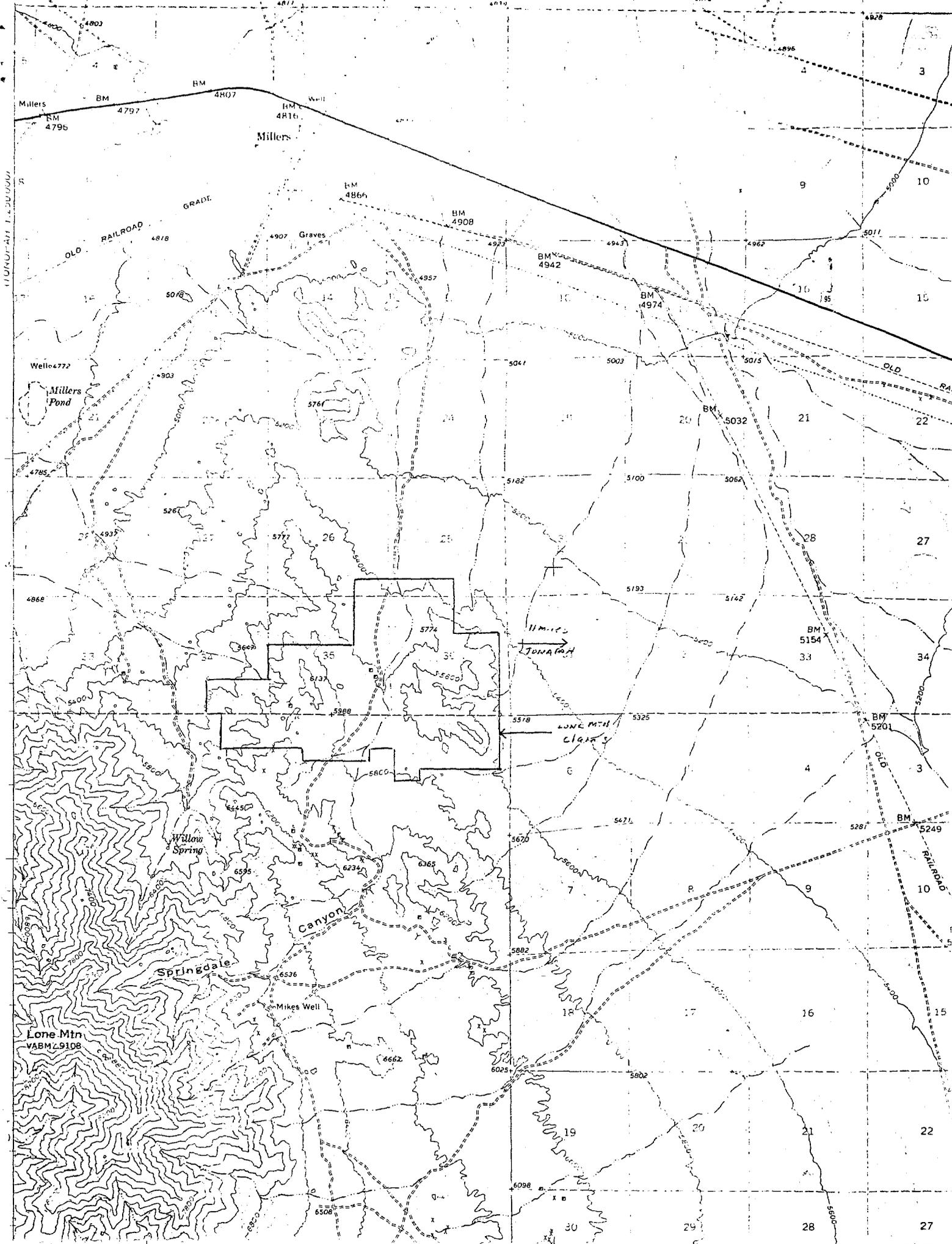
⑳ Commodity or Contained Metals	Au-Ag *Au-Ag-Mo-As-Bi Geochem anom.
㉑ Ore Minerals-Major	Au ^o -pyrite Cs(gn)+Arg. Minor Malachite (cpy) sulfosalts(As)
㉒ Host Rocks-Major	silt.+sh > Ls HBD Dior. > Gb dac. > rhyol Minor Grd > QM Tuff Bx-Arkose
㉓ Age of Host Rocks	ε (Harkless Fm) 110 m.y. 16-22m.y. dikes 61-71 m.y. Siebert (15-19 m.y.)
㉔ Nature of Exposures	Good, rounded hills, 500' relief, 5800' Elev. Dike swarms show well even in float Relief prob. precludes shallow -op Au-Ag deposit. NW rhyol.+dior.dike form ridge spines.
㉕ Alteration	Jasperoid + clay-sericite + local brown carb. vnlts. Weak epid. ± Kfs. in vnlts in more mafic rocks. Loc. Zebroid, Birdseye + marble. ㉖ Total Extent 1mi. E-W x 1½ mi. N-S (Alt/Min 1-30' from dikes)
㉗ Structure	Gentle NE dip to 6seds. Bedding somewhat localizes K+T dike swarms. NW-NE orthog. faults, maj. 30° NE dip thrust over pε seds on NE flank Lone Mtn. batholith. Fabric incr. toward thrust in K intrusive.
㉘ Ore Occurrence	Narrow Alt/mineral. around some dikes in swarms. Pyrite > galena (+s!?) > cpy with grey Qtz vnlts cutting jasperoid. This maybe porphy MoS ₂ target at depth. Deep potential in thrust zone? ㉙ Age of Mineralization 22-15 m.y. + (67-71: Lone Mtn. Pluton)
㉚ Conclusions & Recommendations	Laced by braided swarms of Mioc. and. to rhyol. dikes with weak jasp.+clays up to few 10's ft, max. Narrower Au: 0.1-0.3ppm, 2-15ppm Ag, As: 100 to +1000ppm. Dikes are not close enough together or alteration/mineralization pervasive enough between dikes for an immediate drill target. Several man-weeks plus several 100 multi-element assays would be necessary to attempt to develop a shallow target which heavy requested payments do not justify. Probably worth a few RDH in jasperoid Au-Ag-As areas in S & SW of property if free. Precambrian Exploration has staked 100's of claims to N & W.

(For additional space use extra sheets)



- Ts:** Seibert Volcaniclastics+Tuff
 - Tsp:** Silicic Porphyry
 - Tspbx:** Intrusive Breccia
 - Tl:** Lamprophyre
 - Kgr:** Microcline Granite
 - Kqm:** Quartz Monzonite
 - Klm:** Lone Mtn. Pluton
 - Kgb:** Gabbro and Granodiorite
 - Eh:** Harkless Hornfels and Quartzite
 - Ehl:** Harkless Limestone (marble)
 - Zds:** Deep Spring Formation
 - Zr:** Reed Dolomite
 - Zw:** Wyman Formation
- NvBuMinGeol. Bull 92, 1979

25' An: 2004-1975



August 31, 1987

To: P.G. Vikre

From: F.R. Koutz

Goldfield North Color Anomaly
Sec. 35, 36, T1S,
Sec. 1, 2, T2S, R42E
Esmeralda County, NV

Attached for the files are an ERS, field notes with map and assays results on the above pediment outcrop which you had previously noted 4 miles north of Goldfield. The tan-orange color anomaly is made of outliers of the baked lower contact of Thirsty Canyon Ignimbrite over Siebert lithic lapilli, weakly welded to epiclastic tuff. The Thirsty Canyon is case-hardened with the color due to weathering mafics/desert varnish and orange lichens with the weak argillization-calcite veinlets related to the ash flow and weathering. All 8 samples taken including from the dump of a 150' prospect shaft in weakly jarositic Siebert were <0.013 ppm Au (0.008 mean) and 86 ppm As (49 ppm mean) with very low Ag, Sb and Hg. These low background-level values were surprising considering all the aeolian and fluvially transported tails from the Columbia Mill 4 miles S.

Although there is nothing of metallic value here I would point out that this contact of Thirsty Canyon Tuff was extensively used as a building stone back when Goldfield had 25,000 some denizens (\pm 1905-1925), e.g.: Courthouse, Schoolhouse, Fire Station, part of Hotel, etc. The stone has a good blocky parting and is easily worked. Much of the stone came from NW of town where the Thirsty Canyon/Siebert contact crops out beneath Malpais Basalt. Should Mr. McQuave decide to have Asarco corner the Esmeralda County dimension stone industry in one of his favorite haunts, this contact may be of some value.

FRK:mek

Att: ERS

Map - Field notes

Assays

cc: W.L. Kurtz


F. R. Koutz

ASARCO EXPLORATION RECORD

Suggestion by
P.G.Vikre

FIELD EXAMINATION LITERATURE SEARCH ASARCO FILE _____

No valid claims on ground.

Section I General Indexing

① Name(s) of Property or Area Goldfield North Color Anomaly				② County Esmeralda Co.		③ State or Province Nevada	
				④ USGS Quad. Mud Lake 15'		⑤ File or Gore No.	
⑥ Latitude 37°48'N	⑦ Longitude 117°13'W	⑧ AMS Sheet Goldfield	Township 1S 2S	Range 42E	Section 35,36 1,2	⑨ Examined by F.R.Koutz	⑩ Date 6/30/87
						⑪ Office SWED-Tucson	⑫ Field Days 3 hrs.

Section II Sources of Information

Date Typed 7/7/87

⑬ References	Date	Title	Publications	Vol. No.
Albers & Stewart	1972	Geol. & Min. Deposits, Esmeralda Co.	NVBMG Bull.78 (map)	

Section III Appraisal

⑭ Recommendations <input type="checkbox"/> Action Now <input type="checkbox"/> Too Low Grade <input type="checkbox"/> Too Small <input type="checkbox"/> Ownership Problem <input type="checkbox"/> Access Problem <input checked="" type="checkbox"/> Forget	⑮ <input type="checkbox"/> Post Producer <input type="checkbox"/> Producer <input type="checkbox"/> Mineral Deposit <input type="checkbox"/> Prospect	FeOx color anom. <input checked="" type="checkbox"/> Geologic Concept <input type="checkbox"/> Geochem Anomaly <input type="checkbox"/> Geophy Anomaly	⑯ Production Commodity None Tons Grade Siebert Epiclastic ±500T on Dump Tuff
			⑰ Reserves None <input type="checkbox"/> Measured Commodity <input type="checkbox"/> Estimated Tons Grade
⑱ Num. Drill Holes <u>0</u> Approx Total Footage <u>0</u>	⑲ Excavations <u>Sev. small loc. pits 1:150' shaft</u>		
<input type="checkbox"/> Spectro. Analysis Attached		<input type="checkbox"/> Assays Attached	
<input checked="" type="checkbox"/> ⑳ Geochem Results Attached "GFN"			

Section IV Geologic Data

⑳ Commodity or Contained Metals	NIL - Potential Dimension Stone
㉑ Ore Minerals-Major	(py?) Goeth-Hem-jarosite Minor MnOx
㉒ Host Rocks-Major	Siebert Tuff Thirsty Cyn Tuff (1-30') Minor Basalt flows (Malpais Basalt)
㉓ Age of Host Rocks	±13m.y. 7.5m.y. QT
㉔ Nature of Exposures	Fair, W-facing Cliffs + talus along wash, 100' relief, 5200' elev. Goldfield Columbia
㉕ Alteration	Weak clays, calcite/caliche vns.; Case Hardened + strong desert weathering. Weak local silicif. ㉖ Total Extent 1½ mi. N-S x 1/8 mi. E-W (± color)
㉗ Structure	Volcanics dip 5-15° westerly, weak NW+N-S(?) faults (minimal offset)
㉘ Ore Occurrence	Hem+Goeth. on surface after mafics, baked lower contact of Thirsty Cyn Tuff; very weak jarosite in Siebert Tuff prob. after trace dissemin. pyrite (+mineraliz. float from Goldfield) may have encouraged 150' shaft. ㉙ Age of Mineralization 7 m.y.?
㉚ Conclusions & Recommendations	Siebert tuff here is non-welded to weakly welded lithic lapilli, crystal tuff- to lahar, locally epiclastic (well-rounded fragments). Caprock is weakly silicif. Thirsty Canyon, moderately welded, lithic lapilli, crystal tuff, eroded to E & covered by Qal to W. There is weak silicif. ± calcite veins into underlying Siebert. Part of Thirsty Cyn. is lapilli rubble and weakly silicif. + wk→mod. argillized. Alt. + color anom. prob. due to ash flow quench lower contact and not mineralization as confirmed by geochem. results .005-.013 ppm Au, Ave 50 ppm As, Sb<10 ppm, Hg<.07 ppm.

(For additional space use extra sheets)

GOLD FIELD NORTH
FIELD-SAMPLES NOTES SEC 35/36 T13, R42E

F.R. KOUTZ
6/30/87
3 hrs - PM

- Feox (Gotha?) - (Hem) color Anomally 4 miles N. of Gold Field District mines
VISIBLE locally from US 95 n 7/8 mile to WEST. When area along RT BANK of wash
ALONG SEC 35/36 boundary for 1-1/2 mile. Contact zone between THIRSTY canyon TUFF
Caprock (welded) and underlying Siebert non-welded, labric, epidlastic tuff according
to Co. Bull. Line GREENH 4 AUG 87 # 0806 : ALL values from Age 2
- GFN-1: 10' DIA x 4' deep pit at cratch of "Y" in ridge. Grey-greenish clayey sed in bottom
+ caprock of x'tal lithic tuff - weakly welded, moderate case-hardened. Weathers Lt tan - brown
1% Gotha. ± NE strike low dip. Sample 1/2 sed 1/2 welded tuff. Exact loc. uncertain. 40' C.I.
does not define topography well. .008 Au 80As
- GFN-2 (830' ± S20W) 15' cliff with tan wx welded tuff (cap unit) Bkt vesicular of Basalt
rounded float (Malpais Basalt). 10' Ⓞ north of cliff sampled. x'tal lithic tuff, rings = case
hardened Lt tan des. varnish, w/ jarosite (?). .008 Au 51As
- GFN-3 (240' S45E of #2) 8' cliff sample of lithic tuff, labric w/ welded tuff above (not sampled)
Lt. gy - purple cast. Calcite-calcite units w/ 1/4". Tuff is granular - shows strands in
matrix. Lithic wx out & layered. -135° to S. is old 4x4 .006 Au 41As
- GFN-4: N. end of N-S to N20W ridge 100' long 75' wide. Caprock protrudes. weakly welded tuff + talc
over Siebert. Sample 10' Ⓞ of N. end of ridge Hem = 1%, Gotha = 2% Hvy des. varn. + orange
lichen; gives Feox color anom from distance. Dip 10° NNW ± .005 Au 45
- GFN-5 1700' S10W of #4 caprock, 100' E are 2 v. old 4x4 L.H. + old pits 2' deep. in yellowish-
tan Siebert (not out of ordinary for Siebert in AREA). Caprock sample, Gotha = 2% .008 Au 58As
- GFN-7 1870' S60E of cliff 4x6' shaft ± 150'!! deep ± SW on dump in Siebert Epidlastic
tuff (number fragments to 1/4"). Wk yellow in tuff-sed (JM?) 2% Gotha? Shaft logged. Rep. sample
of dump. (Some laterals down shaft). Weat → mud-silicified - jarosoid clasts in Siebert. .006 Au 78As
- GFN-6 430' S30W of #5 low patch of yellowish green-tan, clayey Siebert subcrop on slope
Sample 10' Ⓞ Avoiding basalt float. pisolitic - sandy textured ± soil. .013 Au 27As
- GFN-8 Lithic, pumice, x'tal tuff, weakly welded, wx brown + red. Strong des. varn (+ MnOx)
Low wk jarosite (?) patches + Gotha. (1-2%) 1/2-1% hem. mostly on sand with case hardened. (Hem on
surf in sun, gotha under). Dip 10-15° WSW 1/2° dip? No evidence of Ny. put some black secs
low westerly - calcite zones. (NE corner SEC 2 T2S, R42E). Locally juicy looking jarosoid,
vein Qtz strongly jaros. gotha soaked dunny Qtz float on ped. For about 1/4-1/2 mi N Thirsty
Cyn tuff is rubble (lithic), clayey prob. from wx of basal now on weakly welded air-fall tuff
zone @ base: very vuggy. .007 Au 36As
- Verdict: color anom. is baked basal part of TFC welded tuff, + case-hardened. Sampled because
4 miles N. of Gold Field + favorable (?) contact in region. (Contrast Mt plot shows no recent
claims in area. May have high BkSD geochem because 4 miles N of rail tails which wash
into wash + high winds + pediment lag - float.



G.F.N 1-8
 6/30/57 →

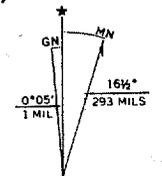
1:100,000 FEET
 (CENTRAL)

37° 45' 117° 15' 340 000 FEET (CENTRAL) 480 483 484 10' 1486 R. 43 E. 1487 1488

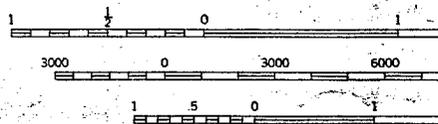
Mapped by the Army Map Service
 Published for civil use by the Geological Survey
 Control by USC&GS and USCE
 Topography from aerial photographs by photogrammetric methods
 Aerial photographs taken 1952. Field check 1952
 Polyconic projection. 1927 North American datum
 10,000-foot grid based on Nevada coordinate system, central and west zones
 1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue
 Dashed land lines indicate approximate locations
 Unchecked elevations are shown in brown

MUD LAKE, NV: 15'

↓ Goldfield District ↓



UTM GRID AND 1952 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



CONTOUR DASHED LINES R DATUM

FOR SALE BY U. S. GEOLOGICAL SURVEY
 A FOLDER DESCRIBING TOPOGRAPHY

Oakman's
 320 SOUTH WELLS AVENUE
 RENO, NEVADA 89502
 (702) 786-4466

ANALYTICAL REPORT

Fleetwood R. Koutz
 ASARCO - SWED
 P.O. Box 5747
 Tucson, AZ 85703

PO #
 PROJECT
 ESM-2

SAMPLE NUMBER	PPM AU	PPM AG	PPM AS	PPM SB	PPM HG
GFN-1	0.008	<.2	86	4	0.04
GFN-2	0.008	<.2	51	3	0.06
GFN-3	0.006	<.2	<1	<1	0.04
GFN-4	0.005	<.2	56	<1	0.05
GFN-5	0.008	<.2	58	9	0.06
GFN-6	0.013	<.2	27	4	0.05
GFN-7	0.006	<.2	79	4	0.06
GFN-8	0.007	<.2	36	<1	0.04

ASARCO Incorporated

AUG 6 1987

SW Exploration

METHOD
 DIGESTION
 PRECISION

A.A.
 FA/20G
 7%

AA/BC
 4Acid
 5%

A.A.
 P/N
 12%

A.A.
 Fus'n
 10%

A.A.
 P/N
 20%

September 26, 1987

R.L. Brown
New York OfficeMonthly Report
September 1987
Mohave County, AZ

	<u>Field Days</u>	<u>Office Days</u>	<u>Samples Collected</u>	<u>Assay Cost</u>	<u>Expense Account</u>	<u>Truck Expenses</u>
To Date	39	32	124	\$1,314.80	\$3,412.71	\$1,499.89

In September there was no Asarco activity or expense in Mohave County, AZ.

Arizona Star Resources (VSE) has made some preliminary announcements (GCNL 8/31) on the results of 11,330' of RDH in July at the Van Deeman Property in the northern Black Range. Tonnage (716,750) has stayed the same, but the announced grade of .038 opt Au has dropped from .042 opt announced in Dec.'86 for zones 2 and 3. Zone 4 results with $\pm 50,000$ potential are not back yet. Zone 1 (23,350T @ .055 opt Au?) were not mentioned. Amir Resources (VSE) has bought 27% of AZ Star and has warrants for another 27%. AZ Star has essentially earned a 50% interest in Van Deeman from Fischer-Watt Gold (OTC). What has happened to the "2-10 mt potential" in the area is not known, but expect the usual touting to continue.

David Fanning, Reno Mgr. of Galli Exploration finally got back to me concerning their Pilgrim property in the Black Range that I was interested in. They are not interested in a JV partner or in showing the data at this time, but will drill late this fall. Galli is being spun back-off of Royal Apex-Cd'A Mines and is currently "gagged" by the SEC from making comments on specific properties. Galli will not become operators of anything they find and will let us know if they find anything of size.

Arizona Silver (VSE) has been making noises about the Burro Creek (Burro-Telegraph Pat. Claims) property 60 miles SE of Kingman which they are JVing from Dominion Resources. "Exact" reserves were announced several weeks ago in GCNL and they have applied for various state mining permits which are being contested. From past efforts of Arizona Silver in the White Hills and the Oro Blanco District (Santa Cruz Co.), I expect they will produce a few bars of gold and silver to show to several helicopter loads of Canadian Investors -- and not much more.

FRK:mek

F. R. Koutz

cc: J.D. Sell
W.L. Kurtz

October 26, 1987

R.L. Brown
New York OfficeMonthly Report
October 1987
Mohave County, AZ

	<u>Field Days</u>	<u>Office Days</u>	<u>Samples Collected</u>	<u>Assay Cost</u>	<u>Expense Account</u>	<u>Truck Expenses</u>
To Date	39	32	124	\$1314.80	\$3412.71	\$1499.89

In October there were no Asarco expenses and only a few hours were spent reading and talking with C. Kunkes concerning his properties in the Van Deeman area.

C.R. Kunkes owns some 450 unpatented lode claims (some with Amselco) from the Pope Mine south to Mockingbird in the Black Range. Fifty-eight plus of these claims (Van Deeman area) are under option to Fischer-Watt Gold, Arizona Star Resources, et al, for \pm \$4000/month (\$750,000 + 300,000 buy out which also reduces NSR on 23 claims from 5½% to 4% and eliminates NSR on 35 claims plus other terms including partially restricted and other VSE penny stock to Kunkes). Monthly payments are due to escalate soon and Fischer-Watt would like to renegotiate terms and obtain another block of ground north of Van Deeman for "next to nothing" according to Kunkes. Although official results of this summer's drilling have not been announced, total mineable heap-leach ore will probably only be in the 900,000T @ \pm .04 opt Au range according to P. Droebek, consultant to Arizona Star. Fischer-Watt, et al, are apparently trying to tout the "potential and inferred" reserves rather than the "drilled out" (short-tonnage) area now known.

Mr. Kunkes will send us his property maps and what data he has on this area that Fischer-Watt is interested in south of the Pope Mine (mostly Sec. 17, T27N, R21W) previously drilled for Cu-Mo by Utah International and others. I briefly visited this area in Feb. 1987 before I knew of ownership. Most of the area is covered with post (?) -tectonic Tertiary gravels, but some interesting low-angle and high-angle, strike-slip subgrade mineralized structures similar to Van Deeman project beneath the gravels. There is fair to good potential for .0X opt Au intercepts beneath these gravels. Mr. Kunkes would like to lease all his remaining property in T26 & 27N, R21W in one block, and, of course, would like to use interest of others to raise the price to Fischer-Watt, et al. Overall, the ground that is exposed does not look anywhere near as good as the Van Deeman, but I have only looked at a few miles² of the area.

Mr. Kunkes reports that the Gold Bug vein is now in production (<50 TPD) and the people at Kemple Camp (SE of Mockingbird) have applied for a permit to heap leach X0,000T @ .0X opt Au.

Bud Hillemeier showed me some of the results from recent Fischer-Watt drilling at Secret Pass (Tincup Mine), one hole with 20' at 2.2 opt Au near Santa Fe's 60' of 0.6 opt Au (drilled down structure). They are hoping for 300,000T @ 0.15-0.18 opt Au which might (with +10/1 w/o ratio) be open-pitted. Apparently, Fischer-Watt confirmed that Santa Fe's unsurveyed angle holes had considerable deviation which increases potential reserves by 50%. They will drill an area about 1 mile NW of Tincup on structure next to the WSA which shows weak argillic-sericitic alteration and Au-Ag anomalies. Fischer-Watt got this ground from Santa Fe for \$5K down (May 22, 1987) and \$10K/6 month for first year and 20K/6 month second year with a Canadian Group-"International Prospectors" paying the first \$100K expenses for a 50% interest (final terms not known) (see May Monthly Report).

Arizona Silver, as reported last month, optioned last winter the Burro Creek (65 miles SE of Kingman) property from Dominion Resources (GCNL) 8/26/87 claiming potentials of 1.3-1.9 m.t. @ 0.068 opt Au and 2.1 opt Ag - 1000' strike, 70' av. width and 300' downdip calculated from 8 Dominion DH, UG sampling and surface cuts at 50' intervals. They filed BLM plan of operations for drilling late 1986-early 1987.

In March 1988 the Cordilleran Section of GSA will have a meeting in Las Vegas with major field trips to mines and prospects in Mohave County, Arizona, as well as Clarke and Nye Counties, Nevada and San Bernardino County, California. We should plan to attend these field trips and possibly the meetings.

With additional Camp Douglas and other Mineral Co. duties added to Esmeralda County, NV, work, there is little chance I will get back to full time Mohave County work until 1988. However, the Van Deeman area/Kunkes situation should be kept track of and acted on if a reasonable option can be obtained from Kunkes.

FRK:mek

F. R. Koutz

cc: W.L. Kurtz
J.D. Sell
P.G. Vikre