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

The following file is part of the Doug K. Martin Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

Ivy Minerals Inc. • P.O. Box 2532 • Boise, Idaho 83701

William Vanderwall
Operations Manager

P.O. Box 9125, KS
Bullhead City, Arizona 86430

Telephone
602-754-4481

Ivy Minerals Inc.
P.O. Box 2532
Boise, Idaho 83701

A SUMMARY REVIEW REPORT

ON THE

GOLD BUG MINE

MOHAVE COUNTY, ARIZONA

D. K. MARTIN & ASSOC.
315 W. MONTEROSA
PHOENIX, ARIZONA 85013

by
William Vanderwall
Registered Geologist - State of Arizona
May, 1988

Introduction:

The Gold Bug is a fully operational underground gold mine. Over the past two years Ivy Minerals, as general partner of Gold Bug Partners Limited, has completed considerable work on the property. Beginning in 1986, exploration work, consisting of surface mapping and sampling followed by shallow and deep drilling, discovered and delineated a small but high-grade ore shoot. Subsequently, an existing shaft was rehabilitated and new drift driven to the shoot. The shoot was raised on, exposing obvious gold ore. During this time metallurgical tests were conducted on rejects from samples of drillhole cuttings. Based on the results a semi-portable one ton per hour gravity mill and agitated cyanide leach facility was designed, constructed and installed on the property. It is permitted and operational. Presently the mill and the mine are idle. The Partners are offering the mine for sale and the equipment for lease.

The reasons for offering the property for sale at this point in its development are as follows: Subsequent to the Gold Bug development decision, Ivy Minerals Inc. has developed several potential intermediate size low grade gold deposits, the most prominent presently containing 450,000 tons of reserves grading .025 ounces of gold per ton (opt.) with the ore body being open to further extensions on two sides. Another mineralized zone contains 3.2 million tons of geologically inferred reserves grading .015 opt. Both deposits, along with other attractive structures the Company has located, require substantial additional drilling.

Rather than continuing the time and financial investment in the Gold Bug Property that is required for stope development,

production and the deliniation of additional reserves, Ivy Minerals would rather devote its limited financial and management resources to its other potentially larger projects. In addition, the sale of the Gold Bug Mine and lease of the equipment would also allow Ivy Minerals to further enhance its larger properties by reinvesting the capital it has employed in the Gold Bug Mine.

Property:

The Gold Bug Property consists of five patented mining claims. The property is held by the Gold Bug Partners under a purchase agreement with the owners. The holding cost is $750.00 per month. The agreement provides for 6% NSR royalty to the owners until the purchase price of $625,000.00 is paid.

A title search undertaken by Transamerica Title Company shows a clean chain of title, vested in the owners.

Location, Access and Physiography:

The property is located in the Black Mountains of northwestern Arizona approximately 50 miles north of Kingman. More specifically, it is located in Section 4; Township 26 North; Range 21 West, GSRM, Mohave County, Arizona. See figures 1&2.

It is readily accessible by high clearance two-wheel drive vehicle. From Kingman or Las Vegas take highway 93 to mile market 29 1/2 where White Hills Road intersects the highway. Take White Hills Road west four miles to the mine.

The physiography is characterized by low hills trending northwesterly paralleling the Black Mountains. Topographically elevations are moderate ranging from 2800 feet to 3300 feet above sea level. These foothills are covered by a desert environment

with vegitation limited to sparse grasses, low bushes and cacti. The climate is mild with hot summers and cool winters and little rainfall.

Maps:

USGS Mt. Perkins Quadrangle, Arizona-Nevada, 15 Minute Series.
USGS Boulder City: Nevada-Arizona, 1:100,000 scale.

Published Reports:

USGS Bulletin 397, by F.C. Schrader, 1909, pp 217-218.

History:

The Gold Bug Mine lies in an area rich and colorful in Arizona mining history. Gold discoveries in the Black Mountains at the turn of the century helped settle northwestern Arizona. According to Schrader the Gold Bug, like many other neighboring mines, was responsible for producing extremely rich ore. For example, in 1895 the Gold Bug produced 50 tons of ore averaging 43 ounces of gold per ton.

Chronologically, the history of the property starts with the discovery by two prospectors in 1892. They reportedly mined some extremely rich ore and sold the property the following year. In 1895, 50 tons of select ore was shipped. Between 1895 and 1903 the owners built a mill on the Colorado River and shipped an unknown quantity of ore reported to average 1.5 ounces of gold per ton (opt). In 1908 or 1909 the main shaft was deepened to 500 feet and an orebody on the 290 foot level was developed but not mined. In 1931 just over a thousand tons of 2.0 opt material was mined from the 140 level and shipped to the mill at Kemple Camp. During 1936 to 1938 the ore developed on the 290 level was mined and shipped to the Producers Mill, this ore reportedly

averaged 2.25 opt. In 1982, G.R. Haynes of Kingman, mined about 30 tons of average 2.0 opt ore from an open cut. Mr. Haynes retains a briefcase full of specimens from this activity.

Gold Bug Partners Ltd. acquired the property in 1986. In 1988 the Gold Bug Partners sorted about 10 tons of ore from the finger raise in the orebody they discovered and it ran over 2.0 opt. A five gallon bucket full of speciments from this raise was retained for examination.

Historically, the mine has produced high-grade ore from isolated shoots when a mill was locally available. Schrader reports that at the time of his visit some 15 shafts and open cuts existed on the Gold Bug. From the records, it generally appears shafts or surface cuts were dug or underground works were developed where promising looking material was encountered and work progressed as long as encouraging material was found. Also, from the record, it is clear that ore pinches off laterally and passes into low-grade sulfides at depth.

Geology and Mineralization:

The property lies in the eastern foothills of the Black Mountains which are composed of precambrian metamorphic rocks overlain by a thick sequence of tertiary volcanics. The Black Mountains are located within the Basin and Range tectonic province and is one of many northwest trending fault block mountain ranges of the Southwest.

Country rock at the Gold Bug is precambrian meta-sediments which have been turned nearly vertical and intruded by volcanic (andesite) and granodiorite dikes. Mineralized quartz veins are associated with the dikes.

The area is quite structurally complex being extensively fractured and faulted. Major faults trend northeast paralleling schistosity while subordinate faults trend northwest to east-west, the latter appear to be younger and sometimes contain pegmatite dikes. The oldest dikes appear to be the granodiorites from cross-cutting relationships, the andesites and pegmatites probably represent renewed activity during tertiary time. Quartz veins are known to cut dykes of both ages.

The veins occur in nearly vertical fault fissures. They are always associated with the dikes and appear to favor the hanging wall of the andesite. The fault fissures are largely occupied by breccia with abundant shearing and some gouge. Ore shoots occur in clusters and tend to have a greater vertical rather than horizontal extent. Concentrations of extremely rich ore favor fault flexures and junctions.

Primary mineralization as evidenced by relict boxwork structure, surviving sulfide species and secondary minerals, appears to be pyrite chalcopyrite and galena. The oxidized portion of the veins ranges to 300 feet deep and contains copper and lead carbonates, iron and manganese oxides, vanadinite, cerargyrite and native gold.

Gold occurs as microscopic and larger flakes and pieces occuring loose in fractures, crystalline growths and encrustations in vugs and boxworks and small veinlets in hard quartz. It is believed the majority of the gold is secondary enrichment being deposited by the downward migration of slightly acid rainwater carrying the metal in solution during the normal weathering process.

Exploration:

The Gold Bug Partners focused exploration on the area shown on the attached maps; i.e. the vicinity of shafts 1,2&3. Map 1 shows the veins and sample results from vein material, which should be used in conjuction with map 3 which shows geology and structure. Additional samples were taken from country rock and wall rock to the veins but the results were consistently barren and were not plotted. More detailed work was performed north of the shafts based on the reasoning that previous work had concentrated south of the shafts and ore is this area has probably been mined out. Two veins showed a high probability of containing virgin ore shoots, vein 1 emanating northeast of shaft 1 and vein 2 northeast of shaft 2.

A shallow drilling program was undertaken to systematically test the veins along strike. Holes were drilled at close intervals using an IR250 air track drill. Samples were collected at five foot intervals. Hole locations and assay results (greater than 0.02opt) are shown on map 2. Assaying was primarily intended to confirm the existence of an ore vein since dilution and cross-contamination in an air track hole must be expected.

Shallow drilling showed the richest ore seam to be vein 1. It contained consistently high intercepts when the vein was encountered plus showed two distinctly anomolous zones; one at the intersection of veins 1 and AH51, in hole AH51-1, and under the 1982 cut, in holes AH 8,9&16. Considering the possibility that this intersection and structural flexure could provide the locus for widening of the vein, a deep drilling program was initiated in this location. Holes were drilled using the reverse circulation method to minimize contamination. Hole locations (RC series) are plotted on map 3. Supplemental maps 3A and 3B show cross-sections, critical lithology and anomolous assays.

Deep drilling indicated the AH51 vein is not continuous to depth, nor is the flexure at the junction of the veins significant. More encouraging results were obtained from intersections with vein 1. All holes intersected the vein (except RC 102) indicating a greater than 90% continuity to a depth as great as 240 feet. Hole RC 1 appears to have intersected the vein beyond what was thought to be the fault termination of vein 1. Also, holed RC 4, 6, 101, 103 and 104 delineated a cigar shaped ore shoot existing under the 1982 cut.

Also, six reverse circulation drillholes along vein 2 are shown on map 3. Where encountered the vein was low grade therefore, no additional reserves were generated by the RC 200 series program.

This leaves the property with three potential ore sources which are, as yet, substantially unexplored. The area south of the shaft which was the focus of previous mining and may contain additional ore. The pegmatite dike where the PD series of air track holes indicated and anomoly. And other vein potential on the property, namely, the Mariposa and Buena Vista veins.

Engineering and Development:

Given the discovery of a virgin ore shoot, the continuity of the vein in the vicinity of the shoot and the production history of the property, an engineering study was undertaken. It's purpose was to determine the mining method for the stope and the feasibility of utilizing the existing shaft and underground workings to minimize the costs of drifting under the ore shoot. The report is attached as appendix A.

The number 2 shaft was mucked out and retimbered to the 240 level and the existing drift was rehabilitated in early 1987.

New drift was driven to the ore shoot and in January 1988 the first of two raises was driven in ore. A cribbed raise with ore chute was installed for 25 feet where the ore pinched and was lost. Two cars of high-grade ore were mined from this raise and from which eight ounces of gold were recovered. This small sub-parallel or faulted piece of the shoot was abandoned in favor of developing the target ore shoot. It is available for extraction.

The targeted ore shoot was opened in March 1988 and a finger raise was driven to the drillhole intersection (RC 4) at the 150 level. This raise is not timbered but is open and shows obvious gold ore. The ground is holding and it appears the resuing method can be successfully used to extract the ore. The exposed ore averages a foot in width. See map 4 for the plan and cross-section of the workings on the 240 level.

Metallurgy:

Concurrent with mine development, metallurgical testing was performed on drill cuttings and surface samples. Two identical tests were performed by commercial ore testing services. Results were in agreement and indicated that in excess of 90% recovery could be expected by using a gravity circuit followed by an agitated cyanide leach. Mill requirements and test results are attached in appendix B.

A one (plus) ton per hour, semi-portable mill was constructed and installed on the property. Appendix C shows the mill circuitry. The mill is fully permitted and operational.

Approximately 60 tons of development ore has been processed by the mill with a calculated recovery of 90%.

Ore Reserves:

Drillhole intercepts and surface and underground exposures indicate the ore shoot contains approximately 275 tons of ore calculated by the following exercise:

240' deep X 20' long X 1' wide, divided by 14 cu ft/t = 342 tons, assume 20% void space leaves 275 tons.

Historically, the ore has averaged over 2 opt with higher grade pockets. In addition, the likelihood of recovering specimen grade material should not be overlooked.

Furthermore, profitable mill grade ore may be developed along stope margins and by the discovery of additional shoots on existing known vein structures. Opportunity also exists for the development of reserves on the three substantially unexplored areas mentioned above.

Summary:

The Gold Bug Property represents a unique opportunity for acquiring an operational gold property with a substantial portion of the risk eliminated. It has a partially drilled out reserve that is developed and ready for immediate production.

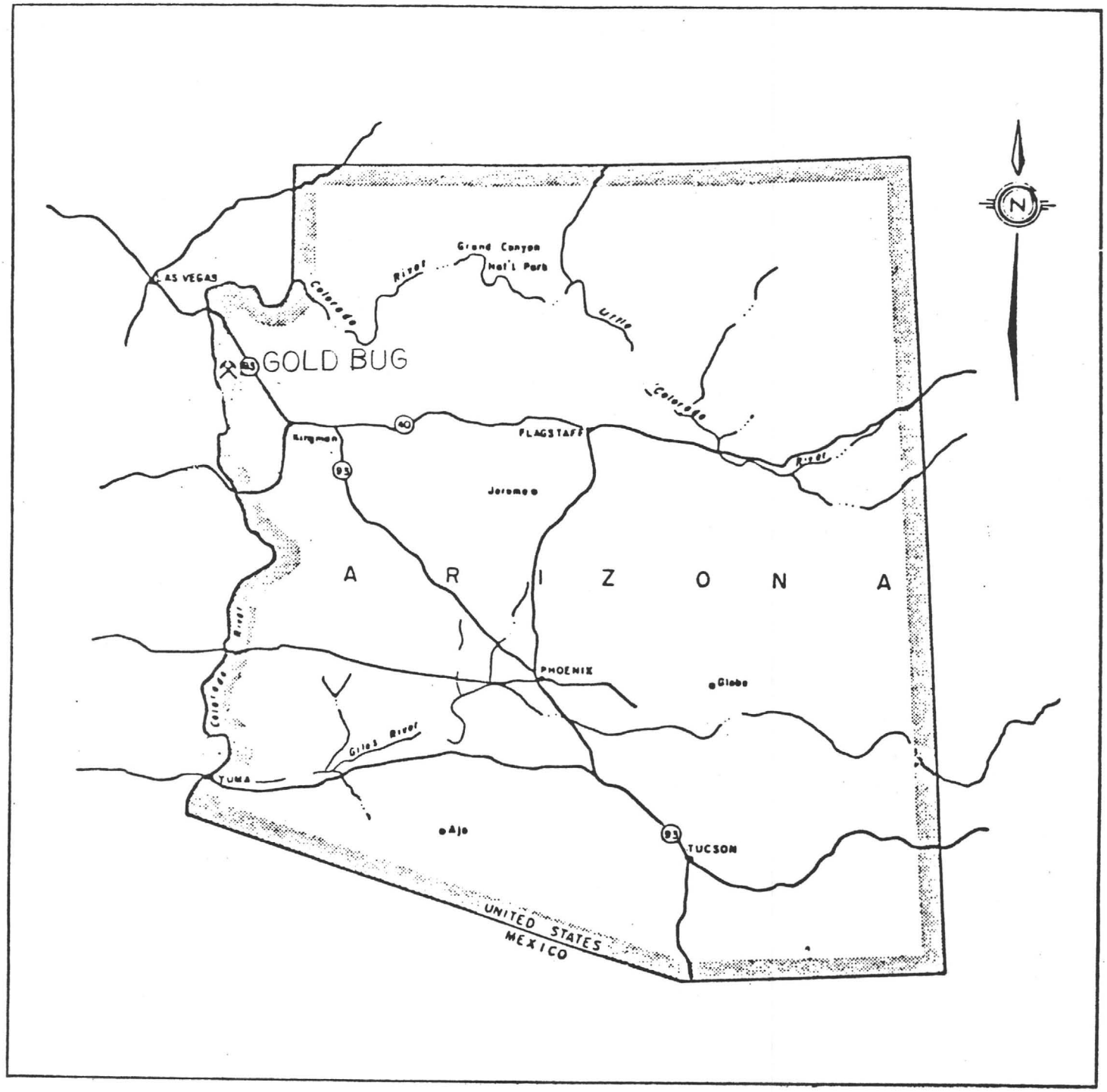
Respectfully Submitted,

Wm. Vanderwall
Registered Geologist - State of Arizona
A48

ATTACHMENTS AND ENCLOSURES

Figure 1	General Location, Gold Bug Mine Mohave County, Arizona
Figure 2	Site Location, Gold Bug Mine Mohave County, Arizona
Appendix A	Proposed Mining Method and Cost Schedule for the Gold Bug 240 Stope by Kevin Hanna
Appendix B	Recommendation for a Mill to Treat Ore from the Gold Bug Mine by Ken B. Hall
Appendix C	Gold Bug Mine - Mill Process Flow Sheet
Map 1	Gold Bug : Vein Sampling
Map 2	Gold Bug : Drilling Data (Shallow)
Map 3	Gold Bug : Geology - Showing Deep Drillhole Locations
Map 3A&B	Gold Bug : Supplement to Map 3 Showing Deep Drillhole Cross Sections
Map 4	Gold Bug : Underground Workings 240 Level

FIGURE 1 General Location
Gold Bug Mine
Mohave County
Arizona



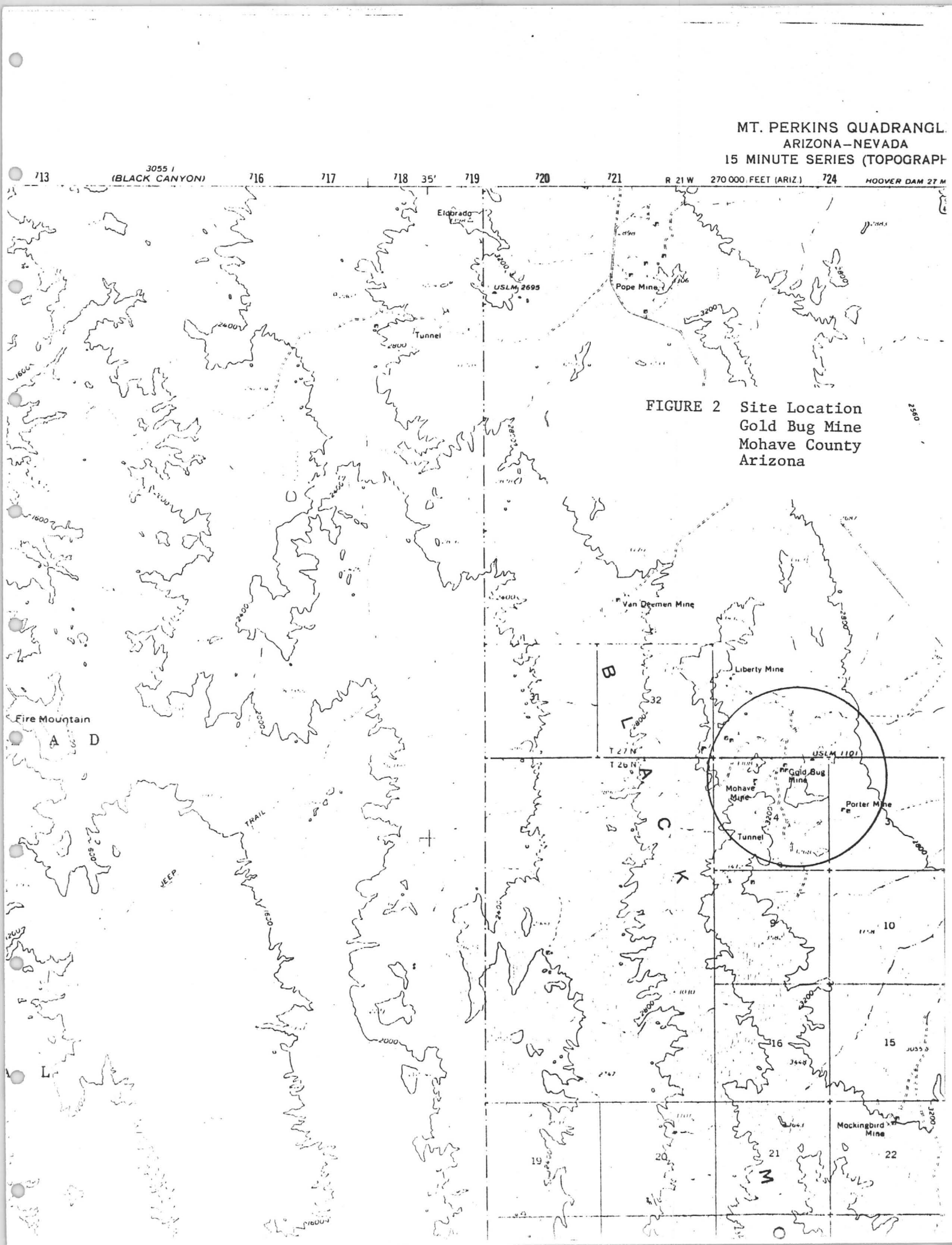


FIGURE 2 Site Location
Gold Bug Mine
Mohave County
Arizona

APPENDIX A

PROPOSED MINING METHOD AND COST SCHEDULE FOR THE GOLD BUG 240 STOPE

Done for: Ivy Minerals
P.O. Box 2532
Boise, ID 83701

By: Kevin Hanna
May 11, 1987

MINING METHOD:

The narrow high grade nature of the ore shoot at the Gold Bug Mine, as delineated by previous drilling, dictates that conventional overhand stoping with resuing be utilized as a means for mining that ore. It is expected that the value of the ore will more than offset the high cost of breaking waste for resuing.

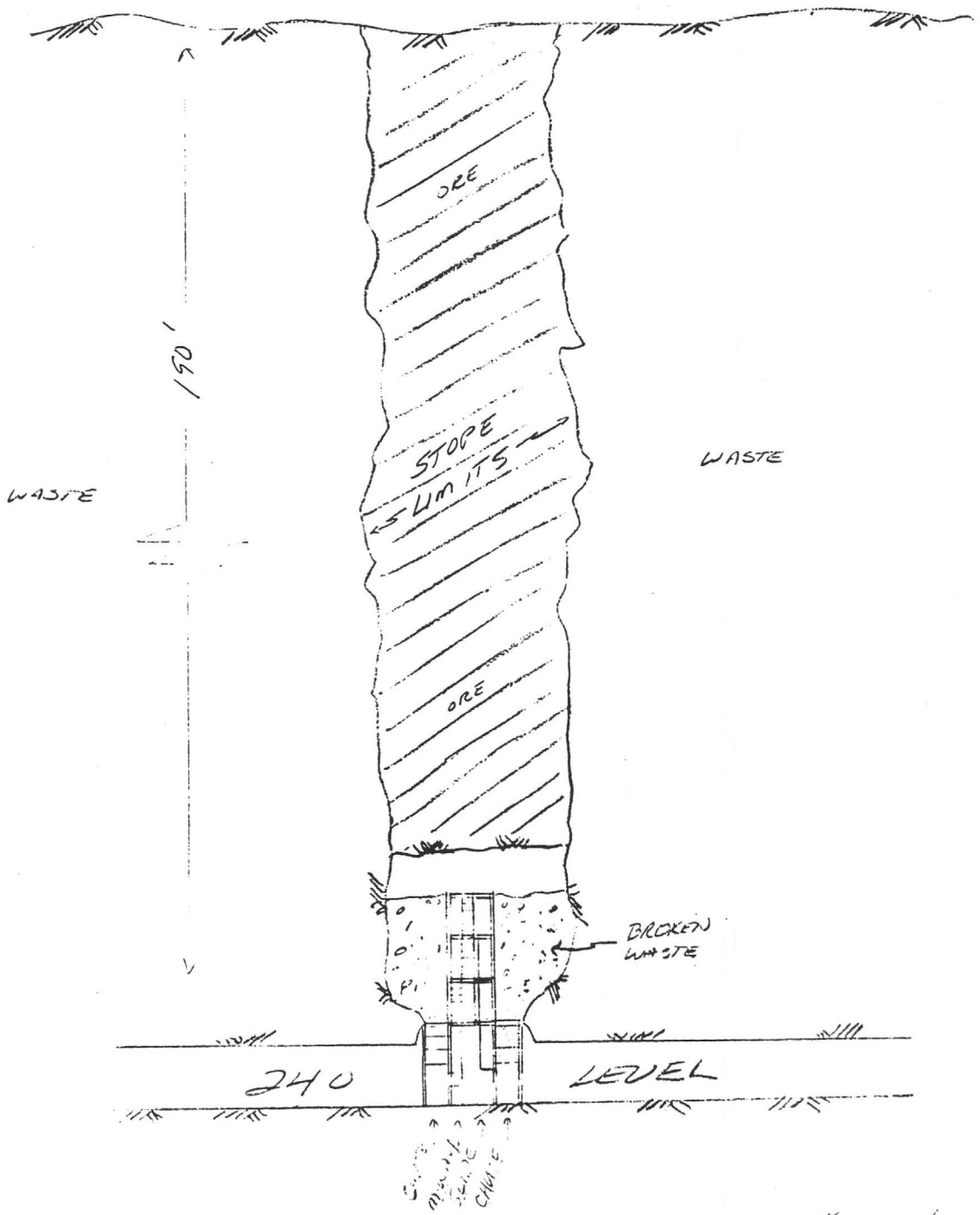
A casefor shrinkage stoping might be made in this instance, but it is believed that the savings in mining costs will be offset by losses due to :

1. Dilution from mixing ore and waste.
2. Additional dilution of ore from caving stope walls during stope drawdown. The degree of jointing in the Gold Bug wall rock will most certainly result in stope wall caving, chute hangups, the need for additional blasting in hung up chutes, and continuous timber repair.
3. Higher milling costs.
4. Greater gold losses in mill tailings.

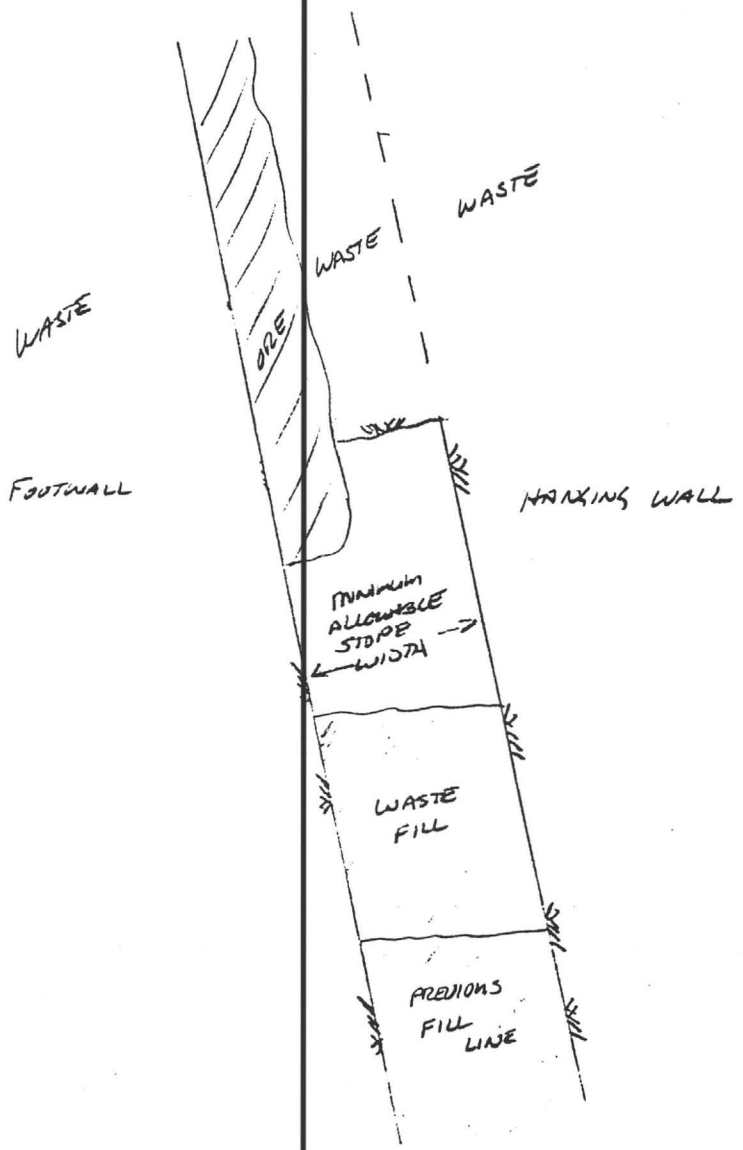
Because of this situation, the resuing method should be utilized in the Gold Bug Mine. The accompanying diagrams illustrate this method.

MINING COSTS:

Again, the narrow width, high grade "pockety" nature of the Gold Bug's ore poses a problem in estimating mining costs in that it is not likely that stoping will progress on a routine cyclical chronology. Irregular stope limits and high grade zones that will require slow and careful mining will probably not yield a production level in excess of 2 tons per man-shift. The cost estimates for the stoping phase of this project have been formulated using that figure. Initial capital investment, shaft rehabilitation, crosscutting costs and milling costs are not incorporated into the mining costs arrived at in this report.



1" = 30'



CROSS SECTION IN STOPE

RESUING METHOD OF STOPING

GOLD BUG MINE STOPING COSTS

1. Labor and Materials

Labor: 2 miners @ $12.00/hr - $192.00/shift
1 hoistman @ $9.00/hr - 72.00/shift
1 nipper @ $6.00/hr - 48.00/shift

$312.00/shift

$312.00/shift X 1.5 (payroll burden) gives $468.00/shift

say $475.00/shift

Fuel: 30 gals/shift @ $1.10/shift gives $33.00/shift

say $35.00/shift

Powder/Primers: (assume - electric primers, detaprime boosters, ANFO Prills)
20 primers/boosters/shift @ $1.50 gives $30.00/shift
75 lbs. ANFO/shift @ $14.00/cwt gives $10.50/shift
total $40.50/shift

say $45.00/shift

Miscellaneous materials: (nails, wire, ladder stock,etc.)

say $35.00/shift

Maintenance: say $15.00/shift

GRAND TOTAL: $605.00/shift say $650.00/shift

2. Stope Preparation - Includes initial raise rounds, slab rounds, mucking, installation of sill timber sets,slide, ladders, chutes and chute gates, tugger, air and water lines.

5 shifts @ $650.00 gives $3250.00 say $3250.00/shift

GOLD BUG MINE STOPING COSTS (cont'd)

3. Timber costs

Material - roughsawn Oregon fir @ $320.00/unit
1 unit equals 1000 board ft. say $.32/bd ft

Assume - 4 X 6 stull and post raise, 5 foot sets.

Requirements;

3 -	6"X 8" X 4' stulls	-	48 bd ft
6 -	4"X 6" X 4' posts	-	48
2 -	4"X 6" X 4' girts	-	16
2 -	4"X 6" X 2' girts	-	8
8 -	1"X 12"X 5' side lagging	-	40
4 -	1"X 12"X 5' slide	-	20
			180 bd ft/set

190 ft of back/5 ft per set gives 38 sets required
38 sets X 180 bd ft per set gives 6840 bd ft of timber required
6840 bd ft of timber X $.32 gives $2188.80 for timber

say $2500.00

4. Miner productivity

2 tons per man-shift (using 2 miners) yield 4 tons/shift
Expected tonnage from raise/stope - 190'X 4'X 20' gives 563 yds
563 yds X 2 tons per yd gives 1125 tons
1125 tons/1 shift per 4 tons gives 281 shifts

say 280 shifts to mine out ore body

5. GRAND TOTAL

280 shifts X $650.00/shift gives	$182,000
stope preparation	3,250
timber costs	2,500
	$187,750

$187,750/1125 tons (half ore, half waste) gives $167.00/ton

or $334.00/ton ore

APPENDIX B

COLD BUG MINE June 10, 1987

Recommendations for a mill to treat ore from the Cold Bug Mine

An ore body has been located at the Cold Bug Mine near Dolan Springs, Arizona. A comprehensive drilling and sampling program has confirmed approximately 500 tons of ore at 3 ounces per short ton of ore and possibly 3,000 tons at 1/4 ounce per ton.

Development at the mine is underway. An old shaft has been renovated and a headframe and hoist have been installed. Drifts are being extended underground to intercept the high grade ore. Production of ore from the mine is expected as soon as the ore body is reached.

It is recommended that a small portable mill be designed, constructed and put into operation to treat 24 tons of ore per day. It would be of simple design, and the cost of building and operating it would be relatively low. Also being of portable design it could be easily moved for use at other mine sites. Consideration has been given to selling the ore or having it custom treated at some plant, but cost of transporting the ore long distances would be prohibitive.

Preliminary laboratory ore tests indicate that the ore is amenable to conventional methods of gravity concentration and cyanide leaching. A representative sample of Cold Bug ore weighing about 100 pounds was sent to Iron King Assay Inc. near Prescott, Arizona for laboratory tests. Later a 3 pound split of the sample was sent to Wayne Wanhanen, Test Engineer at Homestake Mining Co. to check some of the data from Iron King.

Test results from the Iron King laboratory in some cases were questionable because of their inexperience in the testing of gold ores. We had decided to use Iron King because of their very low fees, and we felt that with specific instructions and close supervision we would get the required information. As it turned out we did get useful information at a low cost. It is recommended however, that further laboratory tests be conducted to determine the effect of very fine grinding on recovery of gold. Also laboratory tests should be conducted to determine cyanide leach times, cyanide concentrations, and consumption of cyanide and lime.

From the test data which we have, the following has been established:

1. Ore grade of 300 tons to be about 3 ounces per ton.
2. Ore grindability appears to be reasonable. No grindability index has been established but laboratory grinds were no problem.
3. Recovery of gold in the mill should be above 90%.

   Recovery by gravity separation is expected to be 45-50%.

   Recovery by cyanide leach is expected to be 45-50%.
4. The ore should be ground to at least 200 mesh. Laboratory grind tests would tell how fine to grind.
5. Single stage crushing would be preferred.
6. Free gold could be recovered ahead of the ballmill.
7. The ore could be ground to the desired size in a ballmill.
8. Free gold following grinding could be recovered by gravity concentrate table.
9. Gold can be recovered from the slimes by cyanide leaching.

Ore would be hoisted from the mine and dumped into a truck which would haul a short distance to be dumped into a crusher feed hopper. From the hopper it would be fed into a jaw crusher. An 8X10 jaw crusher is available at the Roadside Mine near Bullhead City at a reasonable price. Crusher discharge at minus 5/8 inch would be conveyed to a 10 ton surge bin. From the surge bin the ore would be fed by a mechanical feeder to a sluice box type of gold trap where it would be slurried with water ahead of the ballmill. The bottom of the trap would be lined with some type of blanket or astro turf for recovery of coarse gold ahead of grinding. In the ballmill classifier circuit the ore would be ground to the desired final grind, which will probably be minus 200 mesh. A 4X5 ballmill has been acquired by Mr. Ivy and a drag classifier owned by Mr. Haynes would be used. There would be a gold or amalgam trap between the ballmill and the classifier to recover free gold liberated in the ballmill. Classifier slimes would flow by gravity to a Wilfley standard size gravity concentrating table. One has been purchased by Mr. Vanderwall in Salt Lake City. Concentrates from the table along with that from the gold traps which should be about 50% gold would be upgraded by amalgamation or leach before being sold. Table middlings would be recirculated to the ballmill classifier circuit. Table tailings would go to a tailings disposal pond for storage ahead of a Carbon-in-Leach Plant to be built and put into operation at a later date. A permit to operate a leach plant must be obtained from the State of Arizona before it can be operated.

B. L. Hall

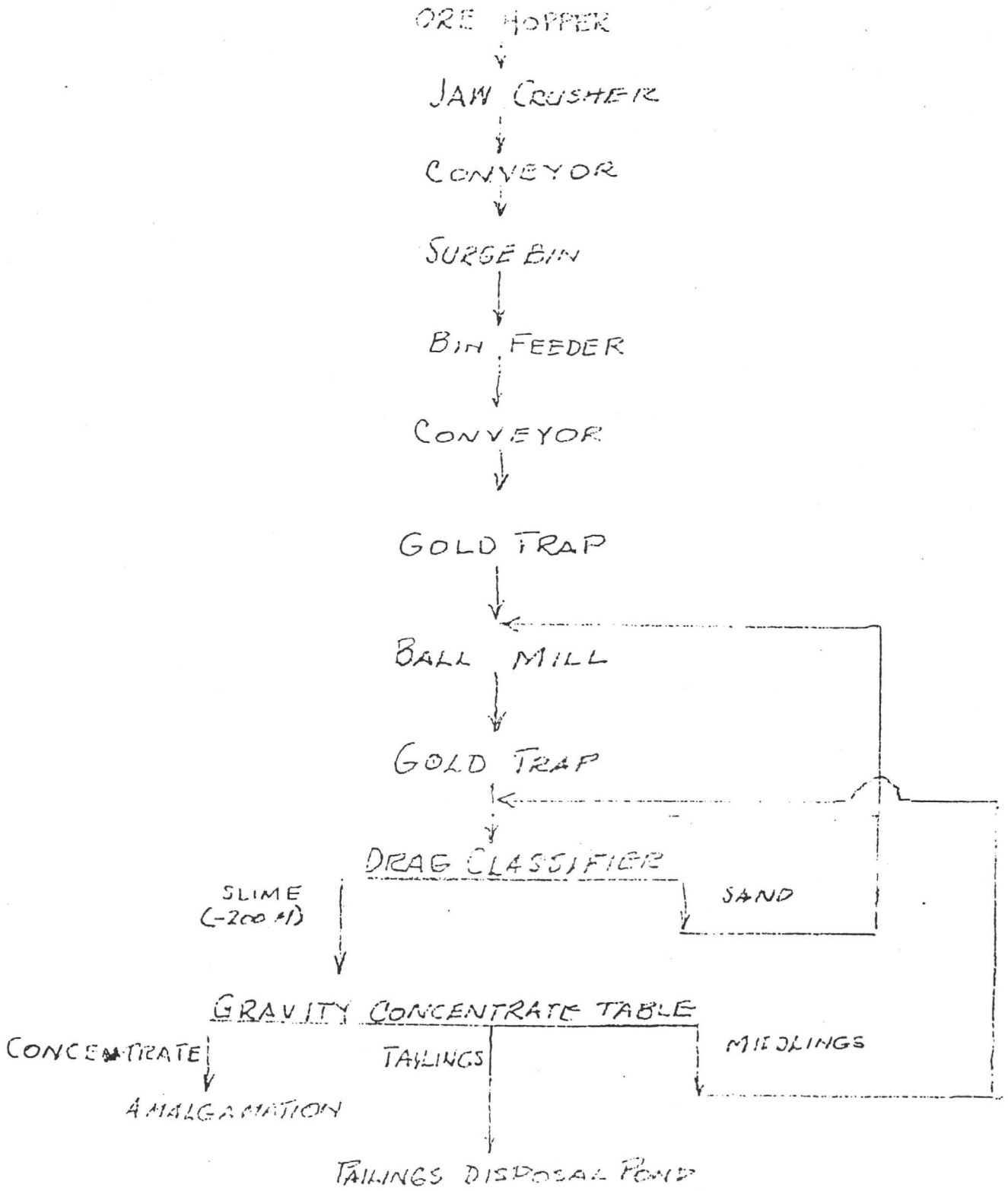
6/10/87

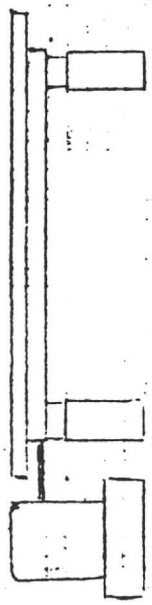
Gold Bug Ore

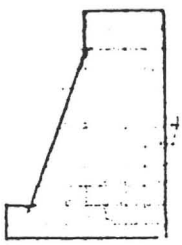
May 11, 1987

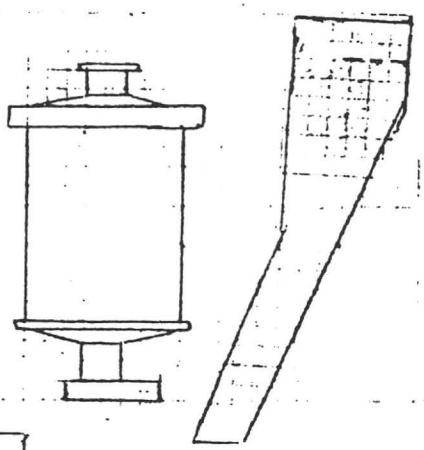
Comparison of test data from Iron King and Wanhanen.

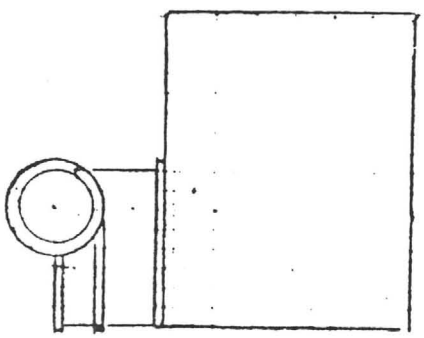
	Iron King	Wanhanen
Head Oz/ton	4.530 (Avg of 4)	3.793 (avg of 4)
Amalgamation to determine free gold		
Time of contact	2.0 hours	8.0 hours
Lime or caustic	17-20 lbs/ton	None
Amalgamation tails	oz/T	2.025
Gold recovery	42.7 %	46.61%
Grind	80% minus 200 mesh	100% minus 00 mesh
Cyanide Leach		
Head Oz/ton		2.265
Residue Oz/ton		
48 hour contact	0.154	0.60
72 hour contact		0.51
NaCN		
Start		0.1%
Finish		0.05%
CaO		
Start		0.4%
Finish		0.091%
PH		
Finish		12.57
Gold recovery		
Grind 80% minus 100 mesh		66.36%
100% minus 100 mesh		74.81 %
80% minus 200 mesh		73.26%

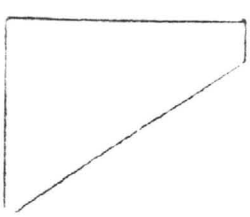

ORE HOPPER
JAW CRUSHER
CONVEYOR
SURGE BIN
BIN FEEDER
CONVEYOR
GOLD TRAP
BALL MILL
GOLD TRAP
DRAG CLASSIFIER
SLIME
(-200 #)
SAND
GRAVITY CONCENTRATE TABLE
CONCENTRATE
TAILINGS
MIDDLINGS
AMALGAMATION
TAILINGS DISPOSAL POND

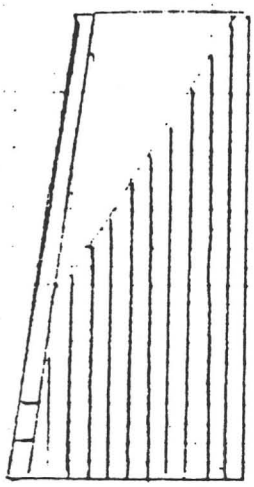


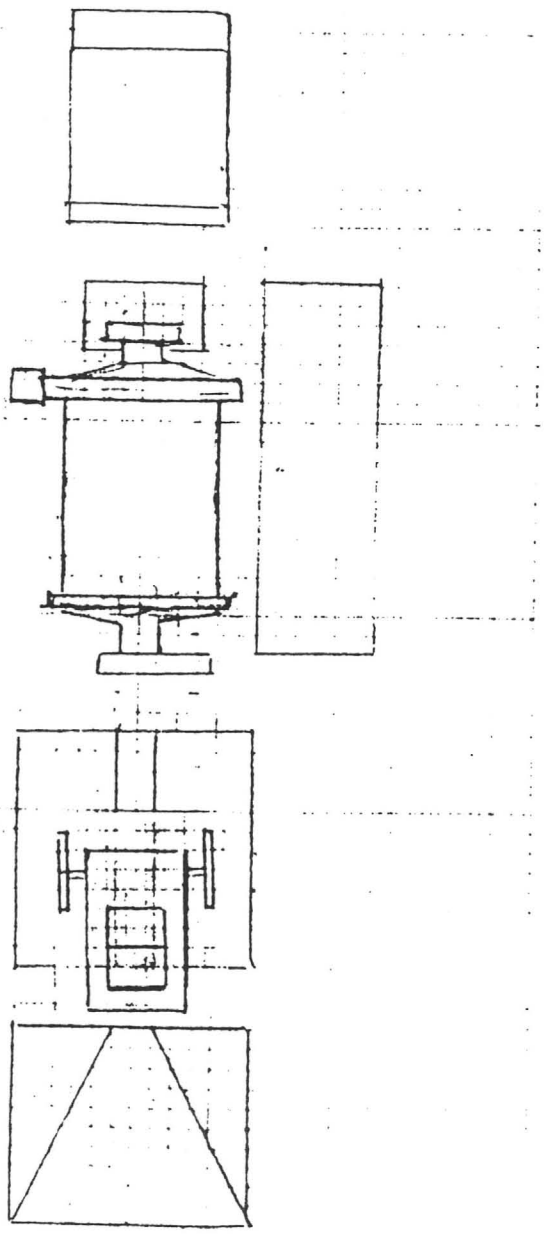








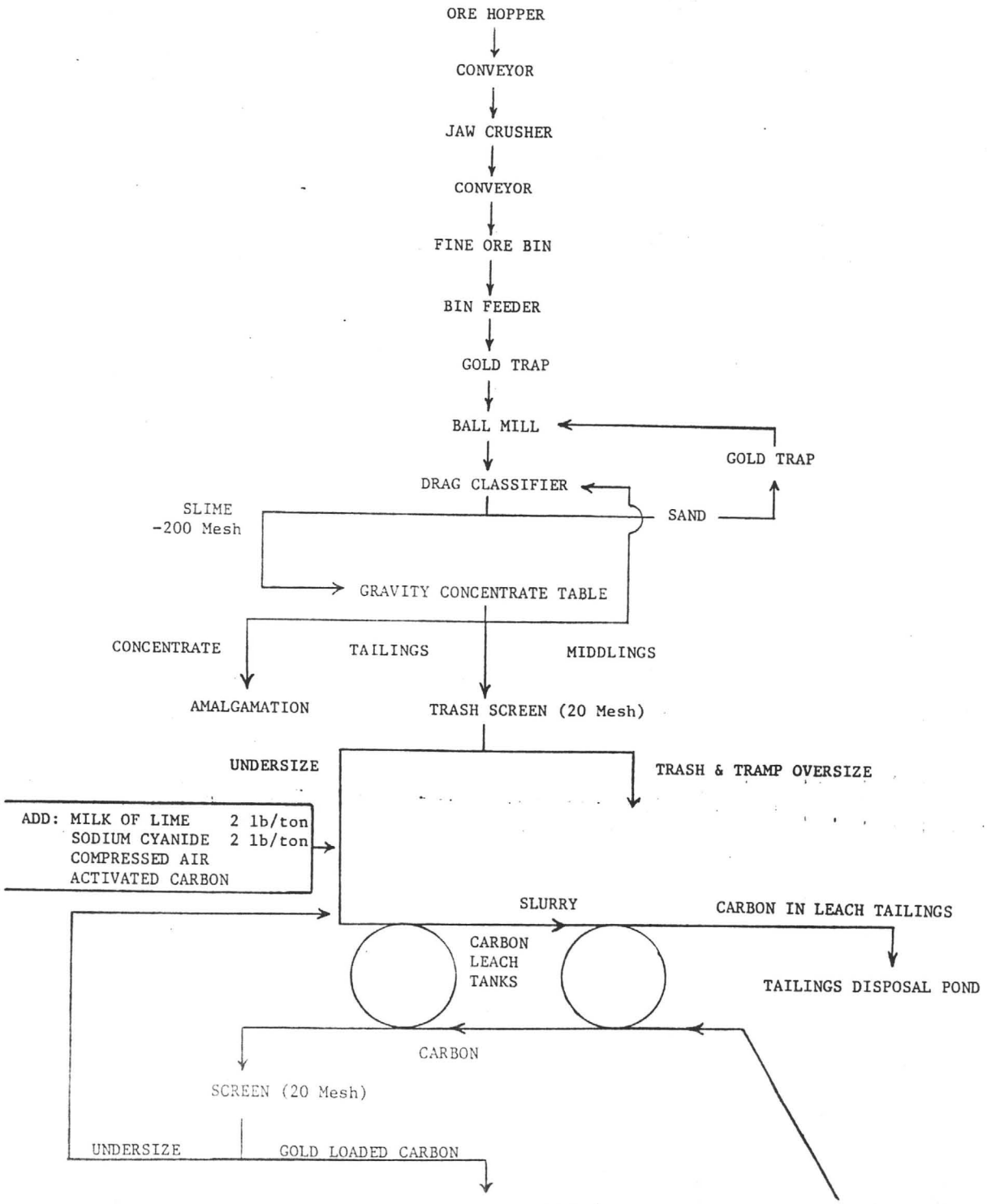


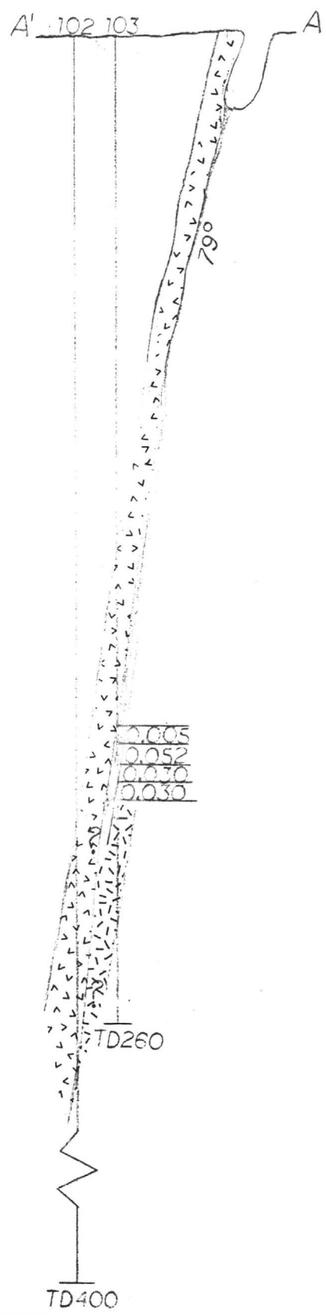


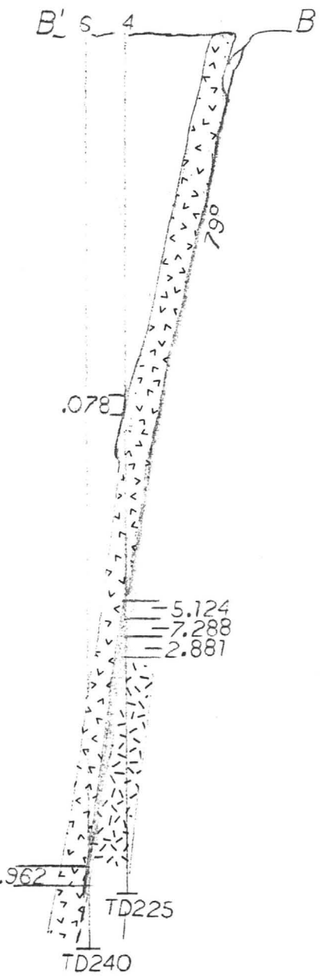
APPENDIX C

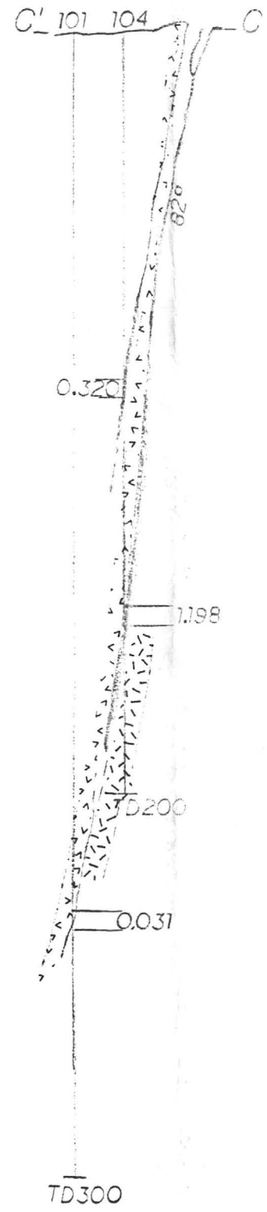
GOLD BUG MINE

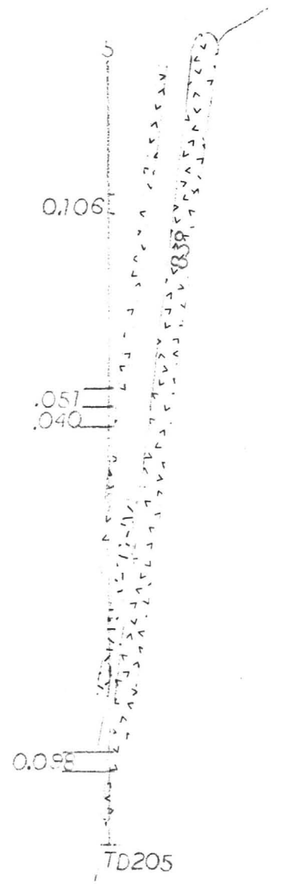
PROCESS FLOW SHEET











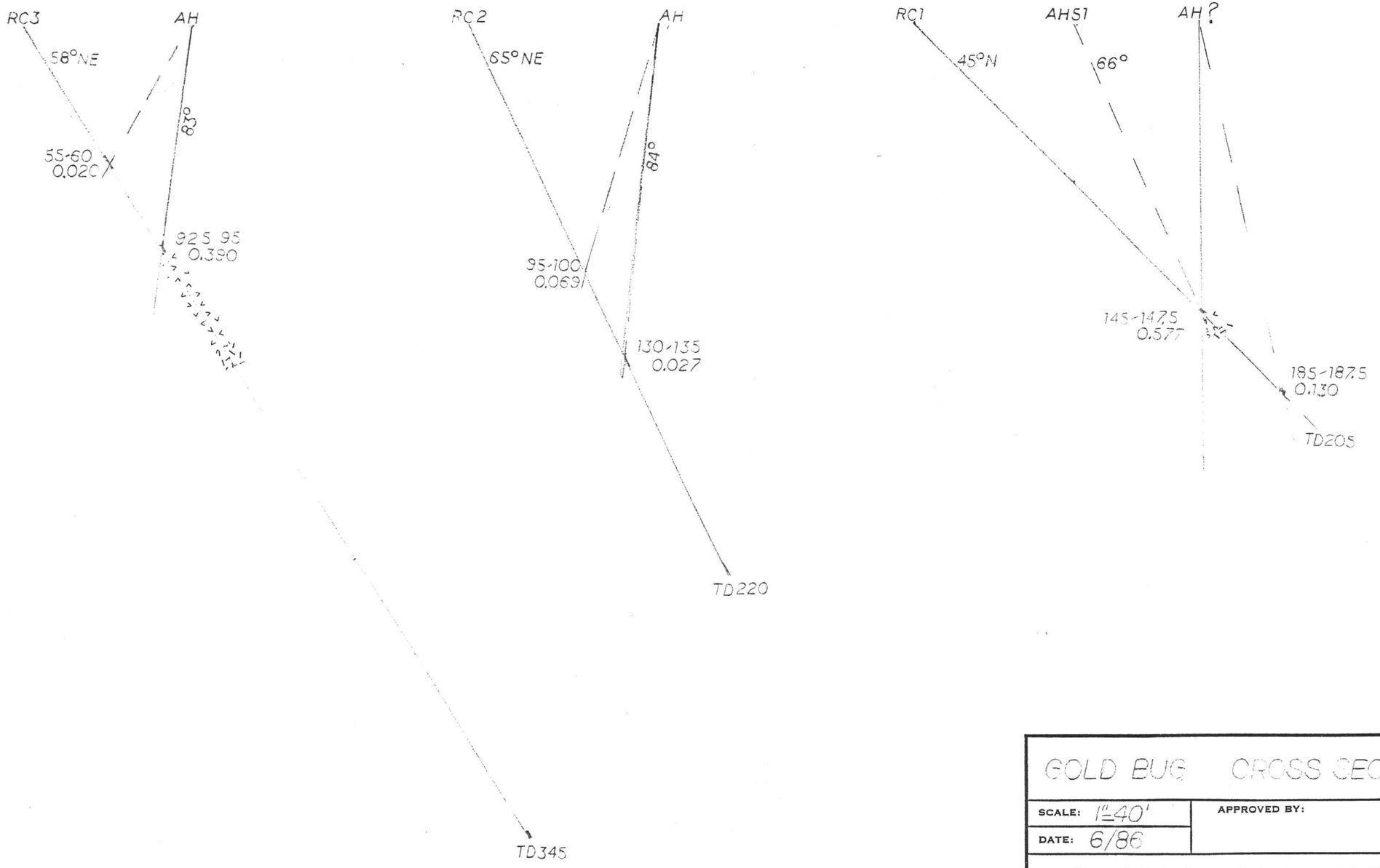
GOLD BUG CROSS-SECTIONS

SCALE: 1"=40'	APPROVED BY:	DRAWN BY WV
DATE: 6/86		REVISED

RC SERIES DRILLHOLES

SEE MAP 3 FOR EXPLANATIONS

DRAWING NUMBER SUP. 3A



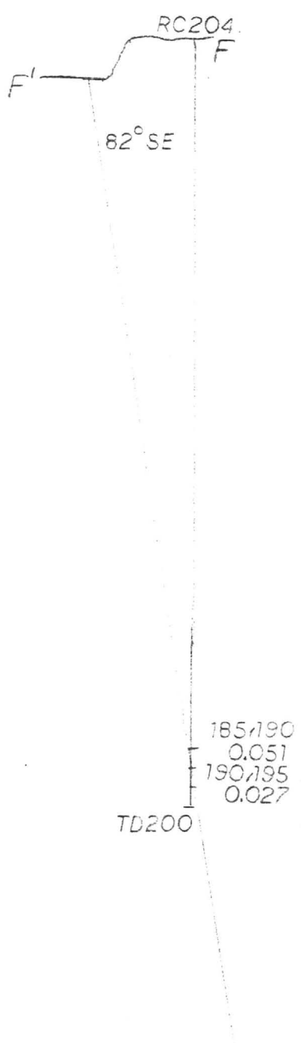
GOLD BUG CROSS SECTIONS

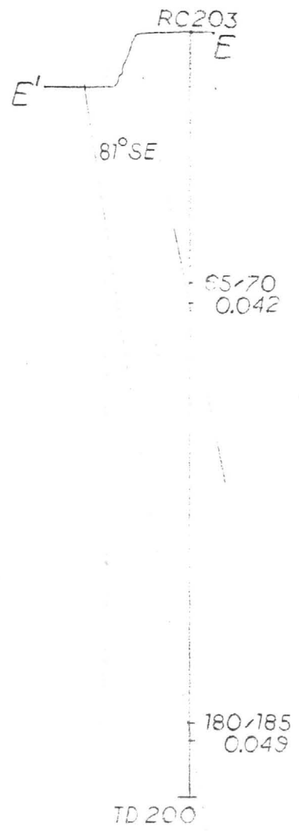
SCALE: 1"=40'	APPROVED BY:	DRAWN BY WV
DATE: 6/86		REVISED

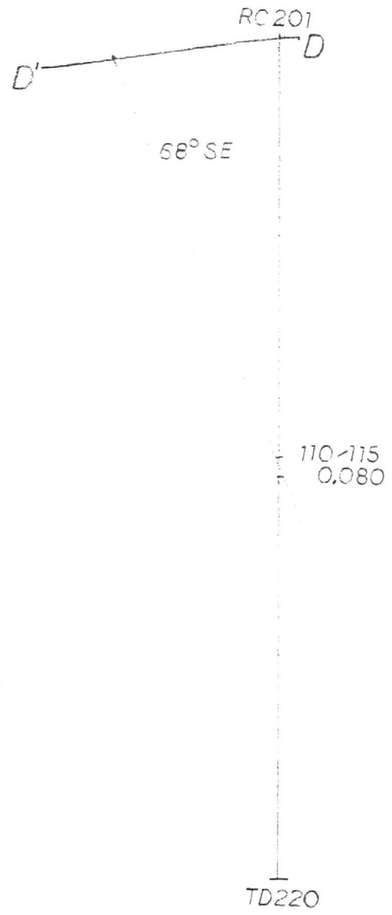
RC SERIES DRILLHOLES

SEE MAP 3 FOR EXPLANATION

DRAWING NUMBER
SUP. 3B







HOLES RC202,205,206 SHOW NO INTERCEPT

GOLD BUG CROSS SECTIONS		
SCALE: 1"=40'	APPROVED BY:	DRAWN BY WV
DATE: 7/86		REVISED
RC SERIES DRILLHOLES		
SEE MAP3 FOR EXPLANATIONS		DRAWING NUMBER SUR. 3C


GOLD BUG
MAP I
SEC. 4; T26N; R21W MOHAVE CO., AZ.
VEIN SAMPLING
LEGEND:
QUARTZ VEIN
QUARTZ STRINGER
4"0.011
SAMPLE LOCATION (SHOWS VEIN WIDTH & GOLD ASSAY)
OPEN CUT OR STOPE
SCALE: 1"=20'
IVY MINERALS INC.
PO BOX 2532
BOISE IDAHO 83701
3/86 WV
250 FT COVERED
1982 CUT SEE NOTE BELOW
WIDTH 12" MAX. 4" AVG.
VEIN AH51 — SHOWS ABUNDANT GOLD — LENGHT 200'
ROAD COVER
DUMP COVER
FILL COVER
FILL
N
S
1982 CUT MINED BY G.R. HAYNES, KINGMAN, ARIZONA.
MAX DEPTH 22 FT.; ORE EXPOSED IN FACE AND BOTTOM.
REPORTED PRODUCTION: 29 TONS SORTED VEIN QUARTZ
AVERAGING 2.0 OPT GOLD. 4" VEIN IN FACE ASSAYS 1.8;
4' ACROSS FACE 0.40; CUT DUMP 0.145.

GOLD BUG
MAP 2

SEC. 4; T26N; R2IW MOHAVE CO., AZ.

DRILLING DATA (SHALLOW)

LEGEND:

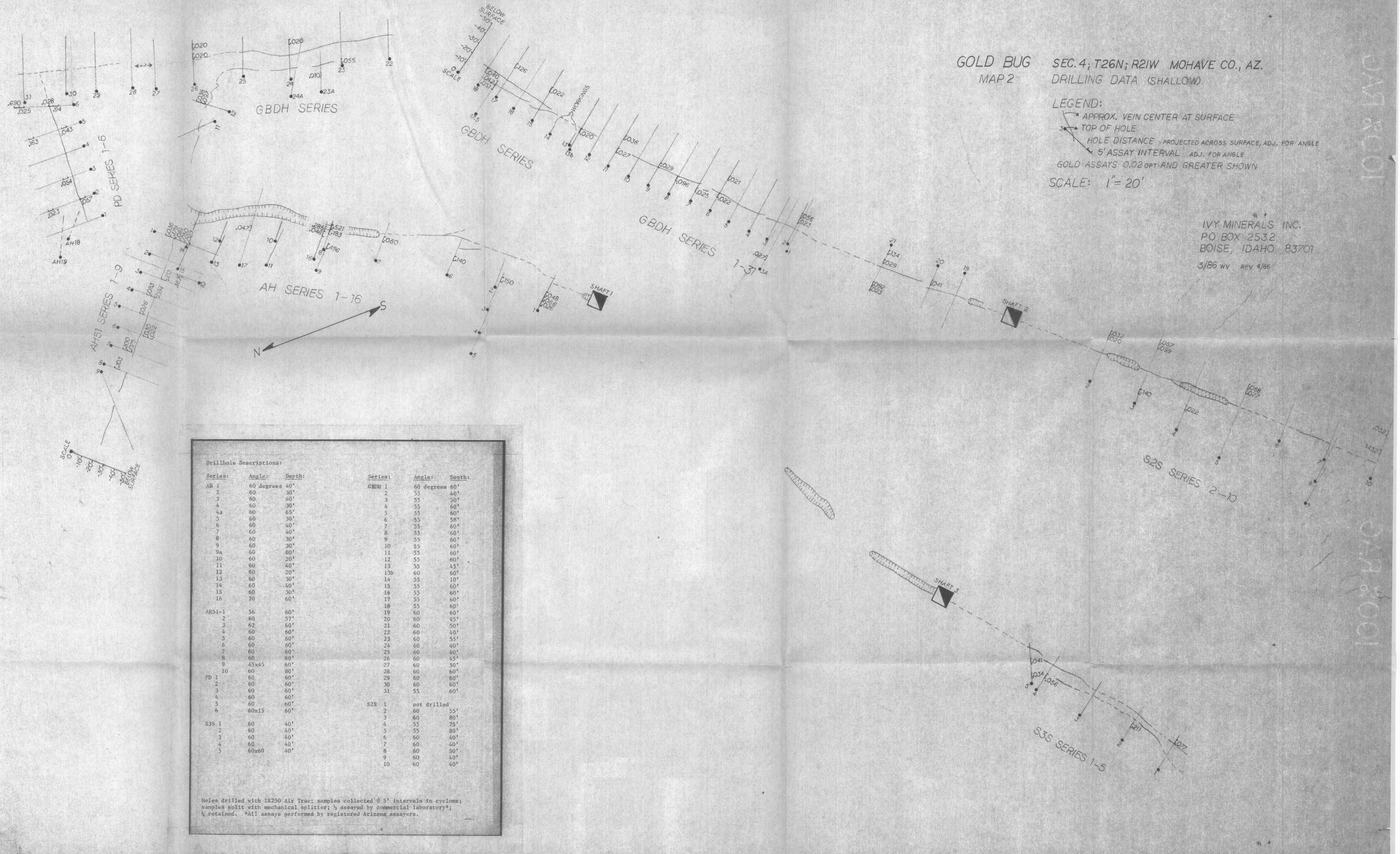
- APPROX. VEIN CENTER AT SURFACE
- TOP OF HOLE
- HOLE DISTANCE - PROJECTED ACROSS SURFACE, ADJ. FOR ANGLE
- 5' ASSAY INTERVAL ADJ. FOR ANGLE

GOLD ASSAYS 0.02 OPT AND GREATER SHOWN

SCALE: 1" = 20'

IVY MINERALS INC.
PO BOX 2532
BOISE, IDAHO 83701

3/86 WV REV 4/86



Drillhole Descriptions:

Series:	Angle:	Depth:
AH 1	60 degrees	40'
2	60	30'
3	60	40'
4	60	30'
4a	60	65'
5	60	30'
6	60	40'
7	60	40'
8	60	30'
9	60	30'
9a	60	80'
10	60	20'
11	60	40'
12	60	20'
13	60	30'
14	60	40'
15	60	30'
16	70	60'
AH51-1	56	60'
2	60	57'
3	62	60'
4	60	60'
5	60	60'
6	60	60'
7	60	60'
8	60	60'
9	45x45	60'
10	60	80'
PD 1	60	60'
2	60	60'
3	60	60'
4	60	60'
5	60	60'
6	60x15	60'
S3S 1	60	40'
2	60	40'
3	60	40'
4	60	40'
5	60x60	40'

Series:	Angle:	Depth:
GBDH 1	60 degrees	60'
2	55	40'
3	55	50'
4	55	60'
5	55	60'
6	55	58'
7	55	60'
8	55	60'
9	55	60'
10	55	60'
11	55	60'
12	55	60'
13	55	45'
13b	60	60'
14	55	10'
15	55	60'
16	55	60'
17	55	60'
18	55	60'
19	60	60'
20	60	45'
21	60	50'
22	60	40'
23	60	55'
24	60	40'
25	60	40'
26	60	45'
27	60	50'
28	60	60'
29	60	60'
30	60	60'
31	55	60'
S2S 1	not drilled	
2	60	55'
3	60	80'
4	55	75'
5	55	80'
6	60	40'
7	60	40'
8	60	30'
9	60	40'
10	60	40'

Holes drilled with IR250 Air Trac; samples collected @ 5' intervals in cyclone; samples split with mechanical splitter; ⅓ assayed by commercial laboratory*; ⅔ retained. *All assays performed by registered Arizona assayers.


GOLD BUG
SEC. 4; T26N; R21W; MOHAVE CO., AZ.
MAP 3
GEOLOGY — SHOWING DEEP DRILLHOLE LOCATIONS (CROSS SECTIONS ON MAP 3 SUPPLEMENTS)
SCALE: 1"=20'
IVY MINERALS INC.
PO BOX 2532
BOISE IDAHO 83701
4/86 WV REV 6/86 REV 7/86
N
S
250' COVERED
RC205 TD200
RC204 TD200
RC206 TD200
RC203 TD200
RC202 TD200
RC201 TD220
RC5 TD205
RC4 TD225
RC103 TD260
RC104 TD200
RC6 TD240
RC101 TD300
RC102 TD400
RC2 TD220 65°
RC3 TD345 55°
RC1 TD205 45°
RC105 TD240
LITHOLOGY
QUARTZ VEIN (DASHED WHERE INFERRED)
DIKE (TYPE I) BELIEVED TO BE PORPHYRITIC ANDESITE, GREEN TO BROWN F. GRAIN MATRIX W/ HORNBLENDE, BIOTITE AND AUGITE (1-3mm) PHENOCRYSTS.
DIKE (TYPE II) GRANITIC, PROBABLY GRANODIORITE LIGHT GRAY PHANERITIC W/ VISIBLE QUARTZ, FELDSPAR, BIOTITE, MED. GRAINED.
COUNTRY ROCK UNDIFFERENTIATED SCHISTS EXHIBITING LOW GRADE METAMORPHIC CHARACTERISTICS.
PEGMATITE SIMPLE COMPOSITION; QUARTZ, MICA, FELDSPAR.
LEGEND
QUARTZ VEIN SHOWING DIP
MAJOR SHEAR SHOWING RELATIVE SLIP AND DIP (WHERE MEASURABLE)
CROSSFAULT
FOLIATION VERTICAL, INCLINED
TREND OF RELICT BEDDING SCHEMATIC
VERTICAL, INCLINED
DRILLHOLE LOCATION
VERTICAL UNLESS OTHERWISE NOTED

GOLD BUG UNDERGROUND WORKINGS 240 LEVEL

MAP 4

SCALE 1" = 20'

IVY MINERALS INC
PO BOX 2532
BOISE ID 83701

4/88 WV