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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: INDIANA-ARIZONA MINE GROUP

ALTERNATE NAMES:

SILVER HILL MINE
CARBONATE GROUP
BURRO
HOMESTAKE
ABBY WATERMAN
PADDY WOODS

PIMA COUNTY MILS NUMBER: 276

LOCATION: TOWNSHIP 12 S RANGE 8 E SECTION 25 QUARTER NE
LATITUDE: N 32DEG 21MIN 21SEC LONGITUDE: W 111DEG 28MIN 42SEC
TOPO MAP NAME: SILVER BELL PEAK - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

LEAD
ZINC
COPPER
SILVER
GOLD LODE
MANGANESE

BIBLIOGRAPHY:

S.B. KEITH, AZBM BULL. 189, P. 144, 1974
ADMMR INDIANA-ARIZONA MINE GROUP
ADMMR KNOX ARIZONA CORP. FILE
THESIS BY A.W. RUFF IN GEOLOGY FILE
MINES HANDBOOK 1926
ADMMR SILVER HILL MINE FILE
INDIANA MINE (RFC) FILE

11/01/85

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

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LEAD-PRIMARY
ZINC-PRIMARY
COPPER-BYPRODUCT
SILVER-BYPRODUCT
GOLD-(M)LODE-LBYPRODUCT
MANGANESE-BYPRODUCT

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MINES HANDBOOK 1926
ADMMR SILVER HILL MINE FILE

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MM6465 CERUSSITE

PIMA COUNTY

INDIANA ARIZONA MINE Burro adit
Waterman Mountains

MILS # 276

2. AKA

Indiana - Arizona mine Group (file)

REFERENCES

WESTERN MINERALS CORP.
803 E. 4th - P.O. Box 5071
Tucson, Arizona 85703 (1-1968)

See: Knox Arizona Corp. (file)

See maps in map file upstairs

See: Geology and Ore Deposits of
the Indiana Mine Area. Pima
County, az. 1951 (Thesis by
A. W. Ruff) In Geology Files

ABM Bul. 189, p. 144

Mines Handbook, 1926

MILS Sheet sequence number
0040190267

MAPS - Upstairs in the ABM rolled
file boxes 2 blueprints
of claims

PAY FURT 3/1969

(Nimke p. 49/70)

Knox - Ariz. Corp. Rpt. 1971

T12S R8E R9E T12S

OXIDE
PIT

ASARCO
SILVER BELL

11

12

14

13

INDIAN

RESERVATION

6

7

18

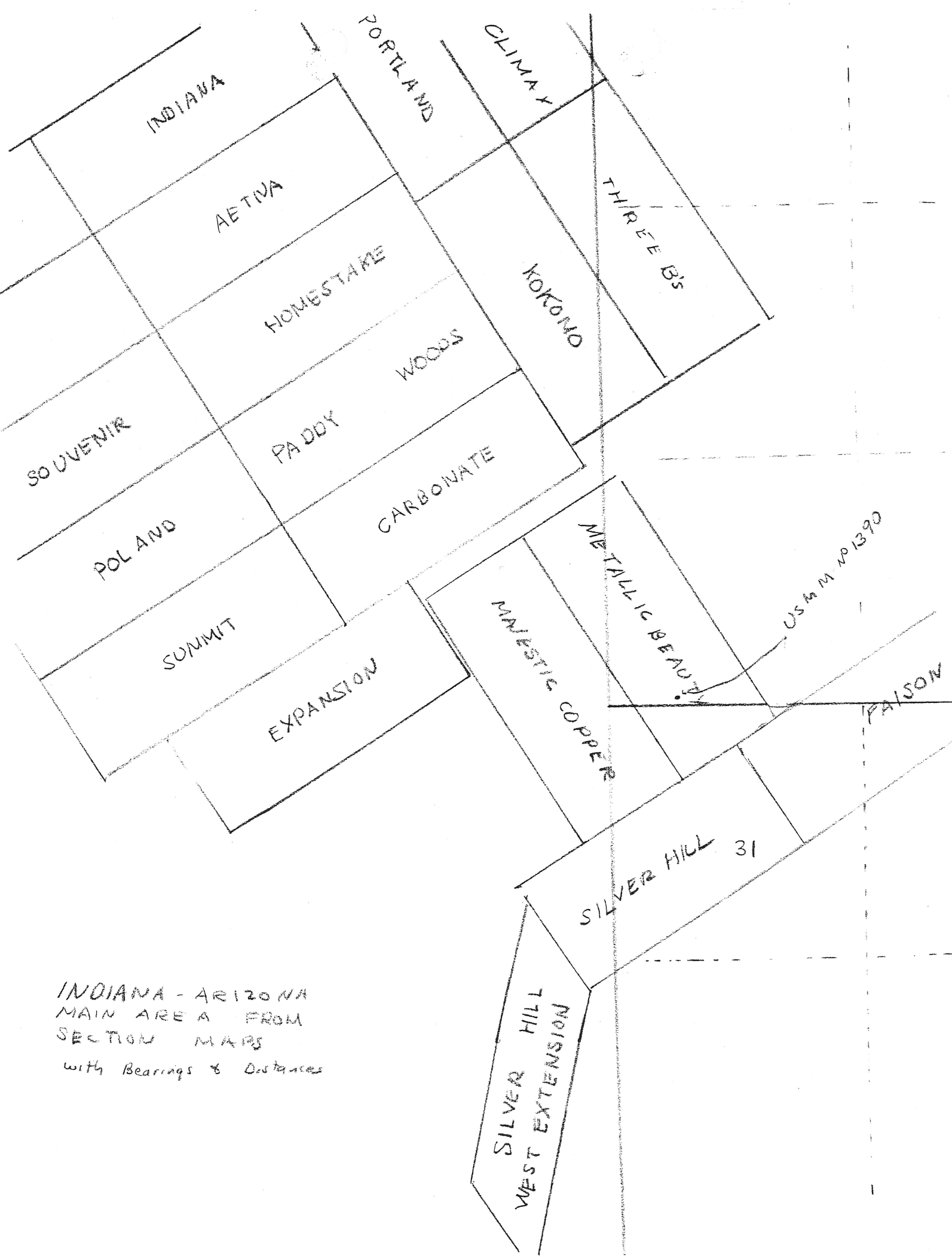
19

30

31

COOPERATION	INDIANA	CLIMAX
FOUNESTRE	AE TON	RETHAM
SUN VENT	HOMESTEAD	W. B. S.
POLAND	ATKINSON	M. C.
SUMMIT	CARBONATE	W. C.
EXAN		
		SILVER BELL
		FAISON

INDIANA- ARIZONA FROM
TOWNSHIP MAP



INDIANA - ARIZONA
MAIN AREA FROM
SECTION MAPS
with Bearings & Distances

INDIANA-ARIZONA MINE

PIMA COUNTY
Silver Bell Dist.
T12S, R8E, secs. 24,25,36
T12S, R9E, secs. 30,31

Active Mine List April 1969 - 8 men

Indiana-Arizona, exploration work from the shaft continues. GWI QR 9-1969

Active Mine List Oct. 1969 - 5 men

Active Mine List May 1970 - 3 men - Thorp Sawyer - V.P. - Knox-Arizona Corp.

Active Mine List Oct. 1970 - 3 men - " " " " " "

Knox Arizona Corp. reports no activity at the Indiana-Arizona Mine or the Roadside mine to the south along the Tucson Sells Highway. GWI AR 73-74

Jim Bell of Minex called to report that his group had purchased the Indiana-Arizona mine from Knox-Arizona Corp. GWI WR 8/30/76

Tony Lane informed this office that the Minex Company is led by Harlow Jones who used to be at the Charleston mine in Cochise County. They now have an option on the Indiana-Arizona at Silverbell. GWI WR 10/4/76

WR GI 5-10-77-Jim Bell called for information on lead leaching.

MG WR 2/27/81: Mr. Dennis Elzinga, phone (Marana AZ) 682-4491, was in to give me the following information: Mr. Harlow Jones, 1707 Home Federal Tower, Tucson, AZ 85701, phone (Marana AZ) 682-5224, is owner of a new company incorporated this year called Minex. This company plans to begin open-pit operations at the Indiana-Arizona and Silver Hill Pb-Zn-Ag mines in Pima County.

MG WR 2/7/86: Visited the Indiana-Arizona mine (Pima County). Talked to a son of Mr. Harlow Jones at the mine office. The property is idle and no shipments of crushed limestone have been made for many months. A variety of mining equipment, in apparently good condition, is parked by the office.

Indiana Arizona Mine

PIMA COUNTY

The Indiana-Arizona, finished the first phase of their OME exploration, that is drilling at the Indiana-Arizona and Silver Hill Mines.

GWl Quarterly Report 4/1968 _____

Active Mine List April 1968 - 4 men

Active Mine List Oct. 1968 - 11 men

The Indiana Arizona is going along very slowly, the company has a lease on the Roadside Mine.

GWl Quarterly Report June 1968 _____

The Indiana Arizona mine has installed a small mill reported to be about 35 tpd capacity. GWl Quarterly Report 12/1968.

It is reported that 13 men were employed at Indiana Arizona and they were milling 150 tpd with rough concentrate going to El Paso, and running 10-15 oz. Ag, 9% Pb, and 4% Cu. GWl WR 2/1/69 _____

Indiana-Arizona - Anthony Lane resigned as manager. Some concentrate has been shipped from the small mill. At present development and exploration work is continuing underground with a small crew. GWl Quarterly Report 3/1969 _____

INDIANA-ARIZONA MINE

PIMA COUNTY

Received phone call from John Sullivan of Trans Arizona Building about Company operating the Indiana Arizona Mine. He wanted to contact them to obtain a credit rating - Indiana Arizona was buying a portable mill in Deming from his client.

GWI WR 4/15/67

Active Mine List April 1967 - 9 men

INDIANA-ARIZONA

PIMA COUNTY

The road from the Silver Bell Highway had recently been graded and fresh auto tracks were seen. About a mile from the turn off, the road was blocked by a padlocked cable and a sign warning everyone to stay out.

G.W. Irvin WR 6/19/65

Telephone call - Mr. Neil Vogel about operations at the Indiana Arizona Mine near Silver Bell. Reported that Ed Stone was geologist.

GWI WR 1/10/66

WILLARD D. PYE
Consulting Geologist

3418 NORTH FORGEUS AVENUE
TUCSON, ARIZONA 85716

TELEPHONE 327-2936
June 24, 1971

Mr. William Knox
Knox-Arizona Corporation
Box 5663
Tucson, Arizona

Dear Bill:

In April of this year I had several discussions with a Mr. Charles H. Simpson who claimed that he has developed a leaching technique for sulfide ores. He claimed that it would work on all types of sulfides and not just copper sulfides.

As a result of our discussions I took a series of samples from the Indiana Mine knowing that this was a complex sulfide ore containing considerable limestone as gangue.

Two samples of concentrate, two samples of "mine run high-grade", and several samples of lower grades of ore were given him.

The enclosed letter was received this week. Two items should be noted: (1) the considerable percentage of cobalt (some of this might be nickel which he did not separate from the cobalt) and (2) the sulfur separates as elemental sulfur. The indicated cobalt concentrations should be checked by further assays.

By telephone he gave me the results of the tests on the concentrates. The results were similar. However, he remarked that the percentages were almost the same in the mine run as in the concentrates except for reduction of gangue which was replaced by an increase in iron sulfides. In other words, a concentration of pyrite was taking place with very little change in the other minerals.

I have not seen his operations nor equipment but understand that it does not involve large leach tanks, precipitation tanks, ^{precipitation} metals, and so forth and that the metal comes out as a metal which does not need to be smelted. The entire operation and plant is a compact unit. Since he is just completing work on the patents on the process he has not discussed it too freely but I think that he received the patents last month. Testing to date has been laboratory and pilot plant studies. No full plant testing has been done.

This is something that I think should be followed up. It might eliminate the need for milling and concentrating the ore if treatment costs of lower grade mine-run rock would not be excessive. The lime content did not seem to cause any problems.

Sincerely,

A handwritten signature in cursive script, appearing to read "Willard".

Willard D. Pye

Charles H. Simpson
Research Analyst
P.O. Box 11385
Phoenix, Arizona 85017

Test: Indiana Ore

Submitted by: Dr. Willard Pye

	Mine Run Ore	1st Run Tails	2nd Run Tails
Copper	5.43	0.90	0.41
Silver	6.75	1.90	
Gold	0.04	0.02	
Sulfur	29.50	27.90	4.00
Cobalt	0.404		
Iron	22.30		
Molybdenum	0.020		

Note: The 2nd Run was only to determine if the sulfur iron complex could be broken and not for complete analysis.

SIGNED:


C. H. Simpson
Research Analyst

DOWN AT THE DUMPS

BY BRYAN L. SAGE

March 23, a sunny but breezy day, saw about two dozen Mineralogical Society of Arizona members pay a day-long visit to the dumps and prospects of the Indiana-Arizona Mine. This mine is situated in the Waterman Mountains about 2 miles southeast of Silverbell in Pima County. The fairly rugged terrain is covered with typical desert vegetation. Access to the mine is good, with a paved road to within two miles of the mine and a good dirt road from there. Eleven cars found adequate parking at the main workings of the mine.

The mine was worked primarily in the 1940's and 50's. Three buildings and the headframe over the main shaft still remain in dilapidated condition. There is also a fair sized accumulation of broken machinery and trash. This camp provides a good example of what kind of equipment and surface facilities are required by a small mine.

A principal shaft and several adits and prospects comprise the Indiana-Arizona Mine. These workings are distributed along the outcroppings of the Indiana-Arizona vein which strike in a northeast direction. This vein cuts both the Pennsylvanian limestones that form the prominent relief of Waterman Mountains, and younger, underlying granites. The primary values of the vein are in lead minerals with lesser amounts of copper and zinc. (See A.W. Ruff, Master of Science Thesis, Univ. of Ariz., 1951). Numerous dumps provided field trip participants with ample hunting especially for micro-mounts. Species noted so far: quartz, calcite, pyrite, sphalerite, galena, azurite, malachite, chalcantite, brochantite, linarite, mimetite, pyromorphite, wulfenite, cerussite, anglesite, fluorite, rosasite, jarosite, apatite, and turquoise.

The MSA was given permission to collect at this site by the current holder of claims comprising the mine: Mr. Frank H. Lingle of Tucson. I wish to take this opportunity to publicly thank Mr. Lingle on behalf of all who took part in the field trip.

CONTINENTAL MATERIALS CORPORATION

Interoffice Correspondence

To: C. H. Reynolds & John Roscoe

Date: Dec. 12, 1964

From: G. L. Brooke

Copies: Bill Cox

Subject: Western Minerals Property, Silver Bell District, Pima County,
Arizona - R&E

The above property was examined on Dec. 11, 1964. I was accompanied over the ground by Neil Vogel, 1820 E. Hampton, Tucson, Arizona (EA7-3269).

Location: The property, consisting of 15 patented and 22 unpatented claims, lies in Sections 19, 30 & 31, T.12 S., R.9 E, and Sections 24 & 25, T.12 S., R. 8 E., or about 3.5 miles southeast of Silver Bell.

Ownership: The property is held by Western Minerals, a Missouri(?) Corp., with eight stock holders. The chief stockholder being William A. Knox, 8967 Ladue Road, St. Louis, Missouri, who reportedly holds 51% of the issued stock.

Production: Some ore has been produced from the Indiana Mine (Homestake claim), Waterman Mine (Paddy Woods claim), and Burro Mine (Carbonate claim).

The Indiana is developed by a 400 foot vertical shaft (1½ compartments), with levels at 92 feet, 169 feet, 244 feet and 350 feet. Development on these levels are 190 feet on the first level, 250 feet on the second, 230 feet on the third and 350 feet on the fourth. Recorded production amounts to only a few hundred tons, averaging about 0.01 oz. Au, 8.7 oz. Ag, 7.2% Pb and 1.4% Cu. Total production is unknown, but the amount of development would indicate that it is quite small.

The Waterman and Burro have produced even smaller quantities.

The Silver Hill Mine, just south of the Western Minerals property, has had the largest production in the immediate area. According to Vogel it produced 200 cars during its last year of operation. The size of the stopes would indicate that total production was several times this amount. However, the Silver Hill is a limestone replacement type deposit, while those on the Western Minerals property are of the fissure vein type.

Geology: The property is underlain by a series of quartzites and limestones, ranging in age from Cambrian to Carboniferous; these in turn are underlain by an acidic, porphyritic, igneous rock (Alaskite-Ruff) of Pre Cambrian age. The entire mass has been extensively faulted.

Numerous fissure veins with a northeast-southwest strike are exposed intermittently. The structures vary in width to a maximum of 20 feet, but the better mineralized portions usually don't exceed 5 to 6 feet. These portions generally have a short strike length which creates small erratic ore shoots.

The greatest development has taken place on the Indiana fissure, with lesser amounts on the Waterman and Burro.

The best target would appear to be some deeper development on the Waterman, which has had only superficial development during the early 1900's. This fissure shows considerable length and locally a fair width. However, in view of past history this would appear to be a rather hazardous undertaking.

There appears to be no alteration halo over these claims as exists over San Manuel, and to a lesser extent over Silver Bell.

Deal: According to Vogel, Knox would require \$63,000 for his 51% of the issued stock. This figure to be cash and not taken from production. It can be assumed the remaining stockholders would require a like Consideration.

Recommendations: I think we can afford to forget this one.

Reference:

Ruff, Arthur: Master's thesis, U. of Arizona, 1950

CONTINENTAL MATERIALS CORPORATION

820 SOUTH NINTH STREET

P. O. BOX 1550

GRAND JUNCTION, COLORADO

December 17, 1964

Mr. Neil Vogel
1820 E. Hampton
Tucson, Arizona

Dear Mr. Vogel:

Mr. C. H. Reynolds, General Superintendent of Continental Materials Corporation, was in Tucson this week and I was able to discuss with him the Western Minerals property, and the Washington Camp group of claims.

It was his conclusion that these properties do not fit into Continental's exploration plans at this time.

We wish to thank you for bringing these properties to our attention.

Sincerely,

G. L. Brooke
Geologist

GLB/ds

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Neil Vogel
Address: 1820 East Hampton Tucson
2. Mine: Indiana Arizona 3. No. of Claims - Patented 22
Unpatented ?
4. Location: Silver Bell (Waterman Mountains)
24-25-36(30-31-9E) 12S
5. Sec 12S Tp 8-9E 6. Mining District Silver Bell
7. Owner: Western Minerals Corp.
8. Address: _____
9. Operating Co.: Same
10. Address: _____
11. President: Mack Alexander 12. ~~Gen. Mgr.~~ Neil Vogel
13. Principal Metals: Pb-Zn-Cu-Ag 14. No. Employed: 3
15. Mill, Type & Capacity: _____
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☒
(d) Production ☐ (e) Rate _____ tpd.
17. New Work Planned: Driving drift to the S45W from the main shaft.
called the Homestake Shaft. The drift is supposed to be driven in 300'
at the present time it is 150' from the shaft, Note: ~~375~~ level 365
18. Misc. Notes: _____

Date: 4-3-70

[Signature]
(Signature)

(Field Engineer)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Ramon Bencomo Mine foreman
Address: _____
2. Mine: Indiana Arizona 3. No. of Claims - Patented 22
Unpatented / ?
4. Location: South of Silver Bell in Waterman Mts.
5. Sec 24-25-36 Tp 12S Range 8, 9E 6. Mining District SILVER BELL
30-31
7. Owner: Western Minerals Corp 815 East Fourth Street Tucson
8. Address: _____
9. Operating Co.: Same
10. Address: _____
11. President: Wm. Knox 12. Gen. Mgr.: None at present
13. Principal Metals: Lead, Zinc Silver Gold 14. No. Employed: # 6
15. Mill, Type & Capacity: Gravity, Tables, rolls and crusher. (Small)
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☒
(d) Production ☐ (e) Rate _____ tpd.
17. New Work Planned: Driving tunnel on the fourth level to intersect vein.

18. Misc. Notes: Shipped 6 or 7 cars of concentrate that run 22% Pb and 12 oz Ag.

Indiana, Arizona, exploration work from the shaft section. (See quarterly report 1969)

3-26-69

Date: _____

[Signature]
(Signature)

(Field Engineer)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Anthony Lane manager
Address: 803 E 4th Tucson P.O. Box 5071 - 85703
2. Mine: Indiana Arizona 3. No. of Claims - Patented 15
Unpatented 35
4. Location: Silver-Bell Dist - Waterman Mts.
30 12 S 9 E
5. Sec 25 Tp 12 S Range 8 E 6. Mining District
7. Owner: Western Minerals
8. Address: 8967 Ladue Road St Louis Mo.
9. Operating Co.: Parne
10. Address:
11. President: Wm Knox 12. Gen. Mgr.: A. Lane
13. Principal Metals: Pb Zn Cu Ag. 14. No. Employed: 2
15. Mill, Type & Capacity:
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☒
(d) Production ☐ (e) Rate tpd.
17. New Work Planned: Are on last hole of Project at
Indiana Ariz Area, will move over to
Silver Hill area & complete project with
18. Misc. Notes: help from office of Minerals Exploration
visited 1-24 - talked to A. Lane mgr. & Horstman.
Note - Webb died of Heart Attack following Friday Morning.

Drilling being done by Metter Brothers on Contract.

Date: 1-24-68

G. W. Winer
(Signature)

(Field Engineer)

DEPARTMENT OF MINERAL RESOURCES

**STATE OF ARIZONA
FIELD ENGINEERS REPORT**

Mine	INDIANA-ARIZONA	Date	May 25, 1967
District	SILVER-BELL	Engineer	G. W. IRVIN
Subject:	Mine visit of May 25th.	Info.	From hoistman.

References- See previous reports and A. Ruff Thesis of 6/29/51

Location-S 25 T 12 S R 8 & 9 E

Owner- & Operator- WESTERN MINERALS CORP. 8967 Ladue Road, St. Louis Mo.
Wm. Knox, President.
-Anthony Lane, Manager, P. O. Box 161, Marana.
-Ed. Stone, Tucson, Consulting Geologist.

Number of Claims- 15 Pat. for Indiana Arizona, and 5 for Silver Hill. In
Addition there are 30 unpatented claims.
(See accompanying claim map)

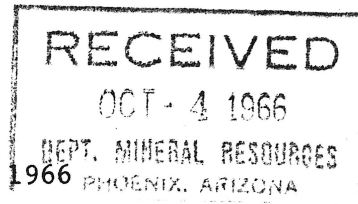
Present activity- Doing a little mining and drifting underground, stockpiling
and sizing some ore.

The company hoped to have their application for a government
loan acted on within the week. If so they expect to sink the
shaft to the 600' level (Now at 400) and then will drift
along the structures.

6 employees at present.

Active Mine List Nov. 1967 - 9 men

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT



Mine "INDIANA ARIZONA
 AND "THE SILVER HILL MINE
District SILVER-BELL

Date September 28, 1966

Engineer G. W. Irvin

Subject: Mine visit on September 28, 1966

References See previous reports. See A. Ruff Thesis 6/29/51

Location--- Sec. 25 - T 12 S - R 8 E

Owner-- 'Western Minerals Corp. 8967 Ladue Road, St. Louis Mo. -
 'Wm Knox , president.

Operator---- 'Western Minerals Corp. P. O. Box 161, Marana, Arizona.
 'Anthony Lane, Manager. 'Ed. Stone, Geologist.

Number of Claims.----- 15 patented at Indiana Arizona and 5 at Silver Hill which
 adjoins on the south. Besides the 20 patented claims there are
 35 unpatented.

Principal Minerals--- Lead, Zinc and Copper.

Present activity--- Cleaning up, underground. The company has applied for
 a OME loan of \$231,000 to be used immediately for 3000' of
 underground core drilling, and 4350' of drilling from the surface.
 The plans call for intersection of the favorable zones at from
 600 to 1200' below the surface. This is in both the above areas.
 If sufficient ore is found a shaft will be sunk and lower level
 development work commenced.
 The loan application asks for 65% to be government financed, as
 silver is included along with the lead, copper, & zinc.

At the present time copper is being recovered from the mine water.
which contains 8 to 12 lbs of copper per 1000 gallons of water.
About 15 to 20 gallons per minute are being pumped thru the
copper recovery tanks. (This is experimental).

At present 9 men are being employed.

(the above information from Mr. Lane the Manager)

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA FIELD ENGINEERS REPORT

FILED
JUL 27 1964

Mine Indiana-Arizona Mine

Date May 27 & June 22, 1964

District Silver Bell District, Pima County

Engineer Axel L. Johnson

Subject: Mine Visit on May 27. Information from Milton F. Graf on May 27, & information from C. Neil Vogel on June 22, followed by reading of references.

- References
- (1) "Report on the properties of the Indiana-Arizona Copper Co." by Cyrus Fisher Tolman, Prof. of Geology & Mining, Arizona School of Mines, University of Arizona --- August, 1910. Available at the Arizona Bureau of Mines Library.
 - (2) "Report on the Indiana-Arizona Co's Lead-Silver Mines" by Colin Timmons, E. M. probably about 1917 (report not dated). Available at Ariz. Bureau of Mines Library.
 - (3) "The Geology and Ore Deposits of the Indiana Mine Area, Pima County, Arizona" by Arthur W. Ruff, June 29, 1951, a thesis. Available at Univ. of Ariz. Library.

Location Sec. 25 - T 12 S - R 8 E & Sec. 30 - T 12 S - R 9 E. ---- To reach property, starting from Silverbell at A. S. & R. office, drive 3.1 miles SE to a paved road leading to a missile site. Turn right(SW) on the missile site road & drive 0.3 miles, and then turn left onto a desert road, driving on this road SW for a distance of 1.75 miles to the old Homestake mine shaft. Continue beyond the shaft for 1/4 mile to present operations/.

Owners
" Western Minerals Corp., 8967 Ladue Road, St. Louis, Mo. -- Wm A. Knox, Pres. The property was purchased in Oct. 1963 from the administrator of an estate.

Lessees Waterman Mountain Mining Co., Milton F. Graf, in charge, 4355 E. Elmwood, Tucson has lease on 3 patented claims, Summit, Expansion & Carbonate on the W. side of the proper

Number of Claims

- (1) 15 patented claims in Sec. 25 - T 12 S - R 8 E (These are patented claims inside the Papago Indian Reservation boundary).
- (2) 22 unpatented claims in Sec. 30 - T 12 S - R 9 E (These are adjacent to the patented claims, but outside the reservation. These claims were located by the present owners last winter.

Principal Minerals Lead, Silver and Copper.

Present Mining Activity Mining of ore from the old lower adit of the old Carbonate Mine on the Carbonate claim. 2 men working on contract. Production about 2 carloads per mo.

Geology & Mineralization The intrusion of granite porphyry into beds of limestone, quartzites, and shales produced ore deposits (a) along the contact between the intrusive and the sedimentary rocks; (b) in fissures in the sedimentary rocks; & (c) in fissures in the intruding granite porphyry.

Four main fissure vein systems occur in the area. Two of these appear prominent on the * Indiana-Arizona property, viz:

- (a) Indiana Vein --- also called Homestake Vein.
- (b) Waterman Vein --- also called Paddy Woods Vein.

The location of the present mining operations * is on the Carbonate Claim, on the southern part of the Waterman or Paddy Woods Vein. This is a fault-fissure vein, crossing favorable beds of limestone.

The ore minerals are principally cerussite with minor malachite and azurite, with fairly high silver content. Gangue minerals are quartz, fluorite, calcite, limonite, hematite and barite, the first two being most abundant.

Wall rocks are limestone, probably Martin, Escabrosa or Naco Limestone or the Cochise Formation.

FILED
JUL 27 1964

Ore Values (1) Values reported by M. F. Graf, present operator are:-- Lead -- 22.5%; Silver -- 4.0 oz.; Copper -- 0.49 %; Zinc -- small amount. Ore is all cerussite.
(2) Composite sample from all levels of the Homestake shaft (from report of Colin Timmons) was viz.: Silver -- 11.5 oz.; Lead -- 8 %; Copper -- 1.1 %.
(3) Average assays of ore shipped between 1942 & 1948, incl. dump ore (from U. S. B. M. reports compiled by C. Neil Vogel) were Lead -- 7.3 %; Silver -- 8.3 oz. Copper -- 1.49 %.

Marketing The ore is trucked to Red Rock in company's own trucks and shipped to the A. S. & R. smelter at El Paso, Texas.

Past History & Production

- (1) Owned by the Indiana and Arizona Copper Co. some time prior to 1908.
- (2) 15 claims patented on Oct. 28, 1908 by Indiana-Arizona Development Co.
M. S. # 2586 -- 289.235 acres.
- (3) Property leased on Dec. 1, 1915 to Oscar A. Knox, Los Angeles, Calif., and work started by lessee under the direction of Arthur C. Wheatley, Supt. with 12 men.
- (4) According to report by Colin Timmons, \$ 10,000 worth of ore was shipped to the smelter between Jan. 1, 1916 and the date of his report, and an additional 2,000 tons of milling grade ore was put on the dumps (date of report about 1917). According to Colin Timmons, the Indiana-Arizona Copper Co. owned the property at that time, and had it leased out. He states "the leasers are hoisting everything with windlass". He also states that the Homestake shaft was 300 ft. deep, with 4 levels -- 45, 91, 166, & 240.
- (5) Property was leased to the Ohio-Arizona Copper Co. on Aug. 21, 1919.
- (6) Property was leased on Oct. 8, 1924 by the International Ore Separation Co., F. S. Karney, St. Louis, Pres. for the purpose of milling the large dumps of low grade ore with a dry milling process developed by International.
- (7) A. R. Byrd, Jr., Tucson took over (apparently by lease) the mine some time in 1944, conducted a development program, and shipped some ore from the mine.
- (8) The mine was purchased by Sidney J. and John J. Macneil in 1946. They sank the shaft 50 ft. deeper to a depth of 350 ft. and drove the 3rd level ahead about 200'
- (9) Sidney Macneil later became the sole owner. Lead-zinc ores were hauled to Naviska (3 miles N. of Marana) and from there shipped to Eagle Picher mill at Sahuarita, to Shattuck Denn Mining Corp., Bisbee, and to the A. S. & R. smelters at Hayden, Ariz., and El Paso, Texas. No records of the tonnage shipped has been compiled.
- (10) An explosion at the powder magazine of the mine about 1956, or early 1957, which injured several children, who were tampering with the powder and fuse caps, resulted in a law suit against Mr. Macneil for damages. Mr. Macneil lost the case and the mining property was awarded to the injured parties under an administrator appointed by the Court.
- (11) The property was purchased by the present owners in Oct. 1963. C. Neil Vogel was the agent who handled the deal.
- (12) A lease on 3 patented claims, Summit, Expansion, & Carbonate was obtained by the present lessee, Milton F. Graf last winter or spring.
- (13) 22 unpatented claims in Sec. 30 - T 12 S - R 9 E were located by the owners, Western Minerals Corp. last winter.

Old Mine Workings The main workings on the property are on the Indiana or Homestake vein and consists of the Homestake shaft with 4 levels -- 92 ft. level; 169 ft. level; 244 ft. level; & 350 ft. level, and one accessory shaft 92 ft. deep.

Smaller workings are found along the Waterman or Paddy Woods vein, viz:

- (1) On the north portion on the Paddy Woods claim:- (a) 1 cross cut adit about 270 ft. long; (b) 1 cross cut adit, with drifts N. & S from same along the vein for a distance of 200 ft. (vein 5 to 6 ft. wide); & (c) small open cuts, adits, stopes, etc
- (2) On the south portion on the Carbonate claim:- (a) 1 lower adit along the vein, 250 ft. long (vein starting at 2 ft. width, and widening to 6 to 8 ft. width); (b) 1 middle adit, 50 ft. above the lower, along the vein, 200 ft. long (vein 5 to 6 ft. wide); & (c) 1 upper adit, about 75 ft. long. These 3 adits is the location of the present mining operations.

FILED
JUL 27 1964Review of Recent Operations

Work on the property was started by the present lessee, Milton F. Graf about April 1, 1964. First, the lower adit was opened up and explored. Then track and pipes were laid in the adit, and a chute and ore bin was constructed. Mining of the ore is now done by 2 miners, working on a contract basis.

The ore is stoped from above the lower adit level, and run through chutes leading to this level. From the chutes, the ore is drawn into ore cars and trammed about 125 ft., and then dumped into a long chute leading to the ore bin. From the ore bin, the ore is drawn into an ore truck and hauled to Red Rock in the company's own trucks.

On May 27, Mr. Graf reported that they had shipped 2 carloads of ore to the A. S. & R. smelter at El Paso, Texas. He estimated that production will average about 2 carloads a month from now on.

The ore mined is all cerussite (lead carbonate), and averages 22.5 % Lead; 4 oz. Silver; and 0.49 % Copper, according to Mr. Graf.

THE EAGLE-PICHER MINING & SMELTING COMPANY
MIAMI, OKLAHOMA



INTRA-COMPANY
CORRESPONDENCE

TO Grover Duff - Tucson Office
FROM John W. Chandler - Miami Office
SUBJECT: Exploration Work

DATE April 6, 1951

Dear Grover:

We are presently compiling a record of all the mines and prospects which we have examined for the Company during the past 10 years.

Starting with 1940, and listing the work done by years, such as 1940, 1941, 1942, etc., we would like to have the following information tabulated:

1. Name of property
2. Location - (State and County)
3. Who it was submitted by
4. Who made the examination
5. Time spent on the examination
6. Metals involved
7. General conclusions drawn from examination
8. Remarks - Under this heading could be shown whether we have done drilling or any other work in addition to the examination. Give brief outline. If the property subsequently became a mine unit and was operated so state.

We do not have a complete file in this office on all properties examined by the Company and we will combine your report with the one being made up from our files to make the final report complete. I would appreciate it if you could put someone on this work until it is completed, sending me three copies of your tabulation.

Best regards,

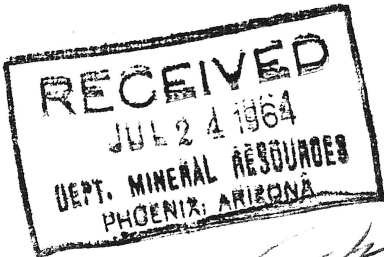
Jack.

John W. Chandler.

JWC/jm

4-25-51 - Mr. Chandler will send us a list of the properties on which they have reports in their files, and we will then send him the information on the others.

GJD



DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

FILED
JUL 27 1964

Date July 20, 1964

1. Mine: Western Minerals Corp.
2. Location: Sec. 25 Twp. 12S Range 8E Nearest Town SILVER BELL Distance 3 1/2 M
Direction North Nearest R.R. Southern Pacific Distance 20 M
Road Conditions Good
3. Mining District and County: Sierrita Pima County
4. Former Name of Mine: Indiana Arizona Copper Co.
5. Owner: Western Minerals Corp.
Address: 8967 Lodi Rd. St. Louis 24, Mo.
6. Operator: Milton F. Gump & Wm G. Gump
Address: 4355 E. Elcommod. Tucson, Arizona
7. Principal Minerals: Lead & Silver, Copper
8. Number of Claims: Lode 37 Patented 15 Unpatented 22
Placer Patented Unpatented
9. Type of Surrounding Terrain: Mountain & Valley
10. Geology and Mineralization: Granite porphyry with beds of limestone, quartzite
11. Dimension and Value of Ore Body: Still under development

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective lessors or buyers.

(over)

12. Ore "Blocked Out" or "In Sight":

Ore Probable:

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts..... 1	350'	Not good
Raises.....		
Tunnels..... 4	240'	Good
Crosscuts..... 2	29'	"
Stopes..... 3	300'	"

14. Water Supply:

15. Brief History:

16. Remarks:

17. If Property for Sale, List Approximate Price and Terms:

18. Signature:

QUOTATIONS and EXCERPTS

from the Thesis by Arthur W. Ruff, dated June 29, 1951
with some of the less important details omitted

Thesis is available at the University of Arizona Library.