



## **CONTACT INFORMATION**

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05/12/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SENORA MINE

ALTERNATE NAMES:

BARITE NIP NO. 1  
BRONZA-HRDROCK  
ALGODONES-NIP NO. 2  
ABE NO. 10  
HAACK

YUMA COUNTY MILS NUMBER: 18

LOCATION: TOWNSHIP 4 S RANGE 19 W SECTION 25 QUARTER SE  
LATITUDE: N 32DEG 08MIN 50SEC LONGITUDE: W 114DEG 11MIN 47SEC  
TOPO MAP NAME: CASTLE DOME MTS - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

LEAD  
SILVER  
FLUORINE FLUORSPAR  
BARIUM  
STONE DIMENSION  
ZINC

BIBLIOGRAPHY:

KEITH, S.B., 1978, AZBM BULL. 192, P. 119  
ADMMR "U" FILE, Pb4  
AZBM BULL. 134, P. 92  
ADMMR SENORA MINE FILE

SENORA GROUP  
(HAACK MINE)

YUMA COUNTY

ABM Bull. 134 p. 92

ABM # 158 p. 107

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MM 1374 Miner's Candlestick  
K087 Galena

YUMA COUNTY

SENORA MINE

Castle Dome Mining Dist.

*MLS # 18*

*5-AKA's*

*Senora mine (file)*



ARIZONA DEPARTMENT OF MINERAL RESOURCES  
MINERAL BUILDING, FAIRGROUNDS  
PHOENIX, ARIZONA

July 29, 1958

To the Owner or Operator of the Arizona Mining Property named below:

Senora Group (Yuma Co.)	lead and silver
(Property)	(ore)

We have an old listing of the above property which we would like to have brought up to date.

Please fill out the enclosed Mine Owner's Report form with as complete detail as possible and attach copies of reports, maps, assay returns, shipment returns or other data which you have not sent us before and which might interest a prospective buyer in looking at the property.

*Frank P. Knight*

FRANK P. KNIGHT,  
Director.

Enc: Mine Owner's Report

SENORA GROUP

Pb, Ag

Yuma

14 - 5

T 4 S, R18 W

Arthur R. Hoack, Box 832, Yuma

'42

*Not P.O. Box 832*

Mr. Arthur L. Haack

P.O. Box 832

Yuma, Arizona



L-7 This specimen now catalogued in the ADMR Museum (see K number),  
MINER SPECIMEN FOR DEPARTMENT OF LIBRARY AND ARCHIVES

K087

Senora Graph

(Do not write  
in this space)

(Wrap each specimen separately, or place it in a substantial  
bag, by itself, with a number attached, identical with the  
number on this card.)

Ore \_\_\_\_\_

Cabinet \_\_\_\_\_

No. \_\_\_\_\_

Specimen No. W, collected by Elmer B. Holt  
Field Engineer

Name of ore Galena ✓

Operator A. R. Haack

Minerals contained \_\_\_\_\_

Mine active or inactive Active

Pb & Ag

If inactive, when operated \_\_\_\_\_

Gangue Calcite, Fluorite & Quartz

Specimen presented by A. R. Haack

Depth at which taken 200 ft

Date Dec. 15, 1939

Approximate mineral content (in terms of  
average per ton) \_\_\_\_\_

Notes (Any general information regarding  
the history of the property.) \_\_\_\_\_

65% Pb & 30 oz Ag

Name of mine or claim SEÑORA

Group \_\_\_\_\_

District Castle Dome, Yuma Co

Location (distance and direction by high-  
way from what town) \_\_\_\_\_

Owner of property A. R. Haack

If more space is desired for notes, use  
other side.

316 89

12.0 x 9.0 x 8.0

K 102

SPECIMEN Flu-2

Cabinet Presented by A. R. Haack  
 Section Collected by Elgin B. Holt  
 Shelf 216 Date received January 19, 1940

Class (principal mineral) Fluorspar Name of mine or claim Senora  
 Other minerals Group  
 District Castle Dome  
 Gangue CaF<sub>2</sub> County Yuma  
 Depth at which specimen taken 200 feet Location (distance and direction by highway from what town)  
 Approximate mineral content (in terms of average per ton)  
 Quantity Value \$ Mine active or inactive Active  
 98% pure If inactive, when operated  
 Owner A. R. Haack  
 Operator A. R. Haack

Notes: Worked for lead and silver since 1864; for fluorspar, as a by-product, since 1900.

This specimen is now in the ADMR Museum - see K number.

SPECIMEN L-7

Cabinet

Presented by A. R. Haack

Section

Collected by Elgin B. Holt

Shelf

Date received January 19, 1940

Class (principal mineral) Lead

Name of mine or claim Senora

Other minerals Silver

Group Senora

District Castle Dome

Gangue Calcite, flourite and quartz

County Yuma co

Depth at which specimen taken 200 feet

Location (distance and direction by highway  
from what town)

Approximate mineral content (in terms of  
average per ton)

Quantity Value \$

Lead 55%

Silver 30 oz.

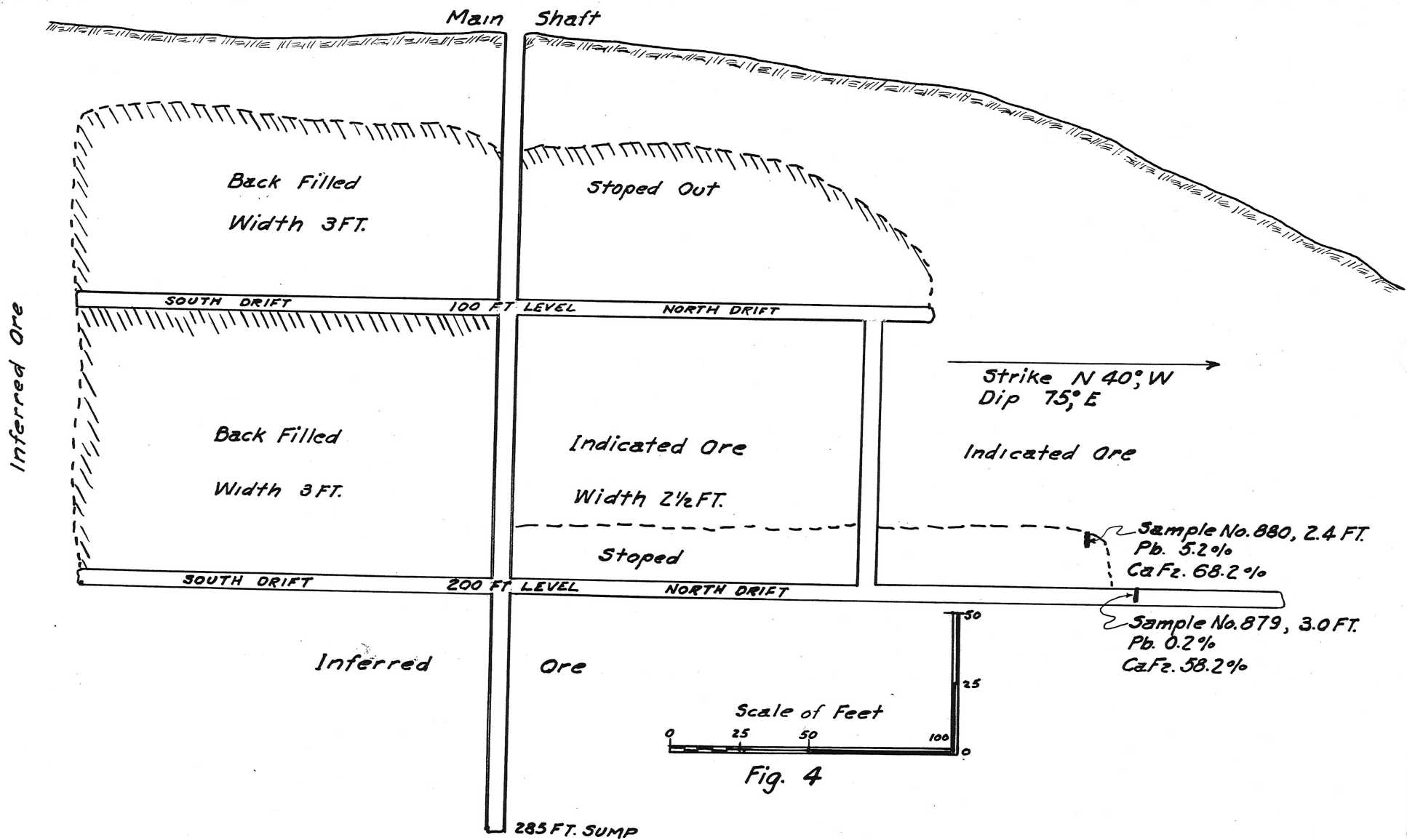
Mine active or inactive Active

If inactive, when operated

Owner A. R. Haack

Operator A. R. Haack

Notes:



Vertical Section, Looking West. Haack Property, Castle Dome District Yuma Co., Arizona

SENORA GROUP  
(HAACK MINE)

YUMA COUNTY

ABM Bull. 134 p. 92

ABM # 158 p. 107

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MM 1374 Miner's Candlestick  
K087 Galena

YUMA COUNTY

SENORA MINE

Castle Dome Mining Dist.

maps # 18

5-AKA's

Senora mine (file)





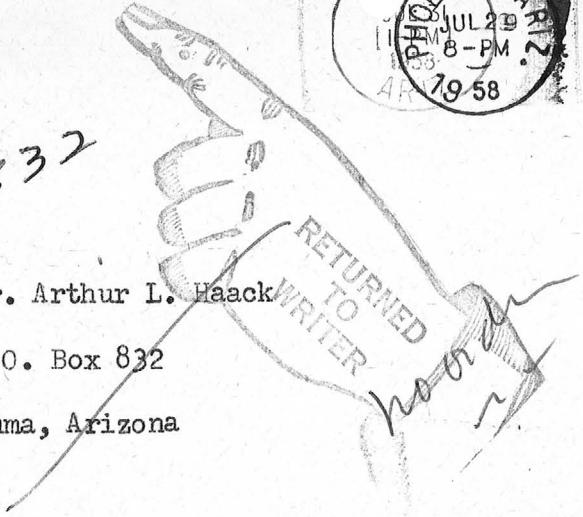
*Not P.O. Box 832  
at the*

Mr. Arthur L. Haack

P.O. Box 832

Yuma, Arizona

PHOENIX, ARIZ.  
JUL 29  
8-PM  
1958



L-7 This specimen now catalogued in the ADMR Museum (see K number)

K087

Senora Crpt'd

MINEP SPECIMEN FOR DEPARTMENT OF LIBRY AND ARCHIVES

(Do not write in this space)  
Ore \_\_\_\_\_  
Cabinet \_\_\_\_\_  
No. \_\_\_\_\_

(Wrap each specimen separately, or place it in a substantial bag, by itself, with a number attached, identical with the number on this card.)

Specimen No. 25, collected by Elmer B. Holt  
Field Engineer

Name of ore Galena

Operator A. R. Haack

Minerals contained \_\_\_\_\_

Mine active or inactive Active

Pb & Ag

If inactive, when operated \_\_\_\_\_

Gangue Calcite, Fluorite & Quartz

Specimen presented by A. R. Haack

Depth at which taken 200 ft

Date Dec. 15, 1939

Approximate mineral content (in terms of average per ton) \_\_\_\_\_

Notes (Any general information regarding the history of the property.) \_\_\_\_\_

65% Pb & 30 oz Ag

Name of mine or claim SENORA

Group \_\_\_\_\_

District Castle Dome, Yuma Co

Location (distance and direction by highway from what town) \_\_\_\_\_

Owner of property A. R. Haack

If more space is desired for notes, use other side.

315 89

12.0 x 9.0 x 8.0

1-19-40

## SPECIMEN Flu-2

K 102

Cabinet

Presented by A. R. Haack

Section

Collected by Elgin B. Holt

shelf

Date received January 19, 1940

Class (principal mineral) Fluorspar

Name of mine or claim Senora

Other minerals

Group

Gangue CaF<sub>2</sub>

District Castle Dome

Depth at which specimen taken 200 feet

Location (distance and direction by highway  
from what town)Approximate mineral content (in terms of  
average per ton)

Quantity

Value \$

Mine active or inactive Active

98% pure

If inactive, when operated

Owner A. R. Haack

Operator A. R. Haack

Notes: Worked for lead and silver since 1864; for fluorspar, as a by-product, since 1900.

This specimen is now in the ADMR Museum - see K number.

## SPECIMEN L-7

Cabinet

Presented by A. R. Haack

Section

Collected by Elgin B. Holt

Shelf

Date received January 19, 1940

Class (principal mineral) Lead

Name of mine or claim Senora

Other minerals Silver

Group Senora

District Castle Dome

Gangue <sup>35%</sup> Calcite, fluorite and quartz

County Yuma co

Depth at which specimen taken 200 feet

Location (distance and direction by highway  
from what town)Approximate mineral content (in terms of  
average per ton)

Quantity Value \$

Mine active or inactive Active

Lead 55%  
Silver 30 oz.

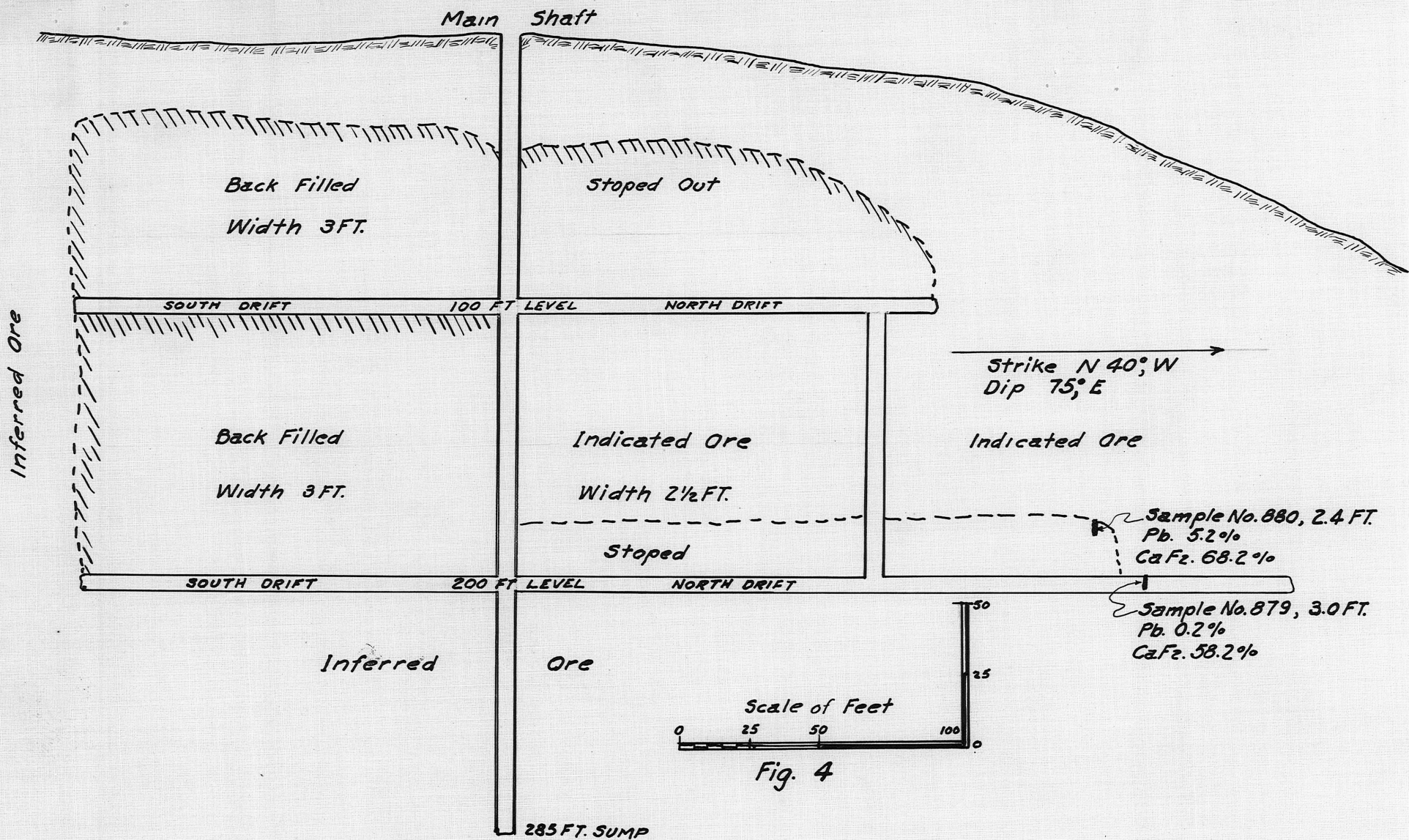
If inactive, when operated

Owner A. R. Haack

Operator A. R. Haack

Notes:





Vertical Section, Looking West. Haack Property, Castle Dome District Yuma Co., Arizona

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Senora Mine - Haack Mine Date March 30, 1953  
District Castle Dome District - Yuma County Engineer George F. Reed  
Subject: In reporting on Yuma County

Halsey Williams, Yuma, Arizona, has watchman at the mine. No work being done.

References: ABM Bull. 134, p. 92  
" " 158, p. 107

RIH

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P  
Y

UNITED STATES  
ATOMIC ENERGY COMMISSION  
Division of Raw Materials  
New York Office

September 3, 1948

Mr. Charles H. Dunning, Director  
Department of Mineral Resources  
State of Arizona  
Mineral Building, Fairgrounds  
Phoenix, Arizona

Subject: SAMPLES FOR ANALYSIS

Dear Mr. Dunning:

Reference is made to your letters of June 21, July 8, July 13 and August 5, together with the eleven samples that you sent us for analysis.

The samples have been studied with the following results; in each case the percentage of  $U_3O_8$  is the equivalent percentage as determined radiometrically on split portions of ground material against our pitchblende standards.

Sample No. 1, received July 15, our No. 583 A, 2.5%  $U_3O_8$  equivalent, is a dark sandstone cemented together with a black and green cementing material. The green material is a secondary non-fluorescent uranium mineral and it occurs either as a cement or in thin plates disseminated throughout the sandstone. This uranium material is probably metatorbernite. Some of the black cementing material is strongly radioactive and this suggests pitchblende. Throughout the sandstone there are small black grains surrounded by yellow halos; superficially these resemble a uranium mineral but repeated tests on them give negative bead tests for uranium, and hence it is believed that these are iron oxides. There are in addition small patches of black throughout the rock that represent segregations of a black copper mineral. We believe that the radioactivity originates to some extent in the metatorbernite but largely in the black cementing material, the exact composition of which we have not yet determined.

Sample No. 2, received July 15, our No. 583 B, 0.30%  $U_3O_8$  equivalent, is a sandstone cemented together with white cementing material and secondary copper minerals. Thin green plates of a secondary uranium mineral are disseminated throughout the sandstone and occur as incrustations on the surface. Most of the green material that is radioactive is not fluorescent and is probably metatorbernite. In addition there is a small amount of faintly fluorescent secondary uranium mineral that may be autunite or some other rare secondary uranium mineral.



Sample No. 3, received July 15, our No. 583 C, 0.29%  $U_3O_8$  equivalent, is a white sandstone, the quartz grains of which are cemented together with a non-radioactive substance. A green secondary uranium mineral, probably metatorbernite, exists as a coating and also in disseminated grains throughout the rock.

Sample No. 4, received July 15, our No. 583 D, 0.08%  $U_3O_8$  equivalent, is a copper stained sandstone in which the rounded quartz grains are cemented together with a non-radioactive white material. There are patches of hard black non-radioactive minerals throughout the sandstone that are probably copper sulfides. The sample shows only a minor amount of green secondary uranium minerals, most of the green coloring resulting from copper carbonates.

Sample No. 5, received July 15, our No. 583 E, 2.45%  $U_3O_8$  equivalent, is a small sample of a sandstone in which the quartz grains are cemented together with a black cementing material. This sample shows a minor amount of metatorbernite and a surface coating of a slightly fluorescent yellow secondary uranium mineral. Since this yellow mineral displays faint fluorescence it is probably not carnotite. The bulk of the radioactivity originates, we believe, in the black cementing material. The sample is similar to your Sample No. 1 except that it contains less metatorbernite.

Sample No. 6, received July 15, our No. 583 F, 0.35%  $U_3O_8$  equivalent, is a fine grained gray and buff colored sandstone in which the grains are cemented together with a black (probably copper rich) cementing material. Disseminated throughout the rock there are occasional grains of chalcopyrite and of a yellow secondary uranium mineral. The pink or lavender mineral gives a strong positive test for cobalt and has been identified as erythrite. The rock is also coated in places with a fine blue mineral that may contain zinc, such as calamine. In any event the presence of cobalt is extremely interesting to us since cobalt minerals are occasionally indicators of primary radioactive minerals. We wonder if there are any cobalt arsenides or sulfarsenides in the vicinity.

Unnumbered sample, received July 26, our No. 583 G, 1.40%  $U_3O_8$  equivalent, has been described to some extent in our letter of July 21. Repeated radiometric tests against pitchblende standards show 1.40%  $U_3O_8$  equivalent radioactivity for this sample. It is a black sandstone, the fine grains of which have been cemented together with a black cementing material. It shows, in addition, copper minerals such as chalcopyrite, chalcocite (?) and malachite. Crushed portions of this sample were fractionated in heavy liquids in an endeavor to concentrate the radioactive mineral. One such concentrate shows 3.40%  $U_3O_8$  equivalent when tested radiometrically. Further examination of this fraction reveals the presence of quartz grains cemented together with two types of black cementing material. One kind of cementing material shows conchoidal fracture and gives a positive uranium bead and in rare cases shows the yellow alteration characteristic of pitchblende. The other type of cementing material is non-radioactive and it is thought to be a copper sulfide.

Sample No. 3, received August 12, our No. 583 H, 0.39%  $U_3O_8$  equivalent, is crushed material consisting of gray and black sandstone in which the quartz grains are cemented together with a black cementing material suggestive of a copper mineral and a grayish white cementing material. There is some blue and green copper carbonate on the surface. A heavy mineral fraction from this sample shows approximately 0.9%  $U_3O_8$  equivalent and consists of a motley assemblage of minerals among which are iron sulfides and oxides, malachite and azurite, a green radioactive mineral that is probably metatorbernite, a fluorescent mineral suggestive of zircon, rare fragments of a yellow mineral that resembles monazite, but is probably iron-stained quartz and fragments of quartz to which copper minerals have adhered. None of the black material tested is radioactive.

Sample No. 4, received August 12, our No. 583 I, 0.89% equivalent, appears to be similar to No. 583 H except that it runs higher radio-metrically. Oddly, the heavy fraction shows only approximately 0.9%  $U_3O_8$  equivalent.

Sample No. 5, received August 12, our No. 583 J, 0.29%  $U_3O_8$  equivalent, is also similar to No. 583 H. The heavy fraction shows approximately 0.6%  $U_3O_8$  equivalent.

Sample No. 6, received August 12, our No. 583 K, 0.005%  $U_3O_8$  equivalent, is crushed material. It consists largely of white sandstone with a very little copper staining on occasional fragments.

All of the samples represent material that is of definite interest to us and we would be pleased to see a copy of your report on the region and also to receive any further comments you may care to make. Can you offer an estimate of the available tonnage of the various types of material you have sent us? You mention other similar locations in Arizona; do you know of many such with indications of extensive tonnage?

At the present time we are having a group of the samples that you submitted sent out for chemical analyses in an endeavor to establish standards on rocks of this type. We cannot be too certain of our radiometric analyses without some such chemical check on our Geiger counters. The presence of metatorbernite in these samples may mean that the radioactive constituents are not in equilibrium and that we are obtaining spurious readings by comparing the beta count derived from these samples with our pitchblende standards. As soon as the results of the chemical analyses become available, we will advise you.

In addition, we will try to definitely determine the black radioactive mineral that frequently cements the quartz grains; we have reason to believe that it may be pitchblende. If you have obtained the results of the x-ray diffraction pattern on this mineral from Smith Emery, we would be interested in seeing it. We would also like to obtain a sample of the most radioactive variety of this black sandstone if you have such available.

September 3, 1948

I seriously question whether you can do much in a quantitative way with your Omaha Scientific Company field counter especially in the low grade material. We find that the field counters are useful for only very rough quantitative work and even our expensive laboratory counter requires careful scrutiny of the results and continuous standardization to produce reliable results. In addition it represents a considerable expenditure. I regret also that at present we are unable to supply you with a counter.

We are forwarding a complete copy of this file to Dr. Wallace G. Fetzer, Chief Exploration Branch of the Division of Raw Materials at Grand Junction, at P. O. Box 270, Grand Junction, Colorado. He is in charge of exploration for the Raw Materials Division in your area. I have advised him to send a field man to this region to study it in greater detail but at the present we doubt whether anyone will reach there before October. In any event Dr. Fetzer will contact your office before sending anyone to Hacks Canyon and I am certain that he will appreciate any cooperation you may give him.

We thank you for all the work you have done in connection with these deposits and regret that we have been unable to reply sooner. The overwhelming number of samples we have recently received has prevented our keeping up to date with many of them. If you care to send us any more samples we will endeavor to work them more quickly; in any event we shall send you the radiometric analyses on them immediately.

Very truly yours,

/Sgd/ Phillip L. Merritt

Phillip L. Merritt  
Assistant Director





DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

TYPE NO. 1

PRODUCTION POSSI-  
BILITY SURVEY

Mine SENORA MINE

Date September 23, 1942

District Castle Dome, Yuma Co.

Engineer Elgin B. Holt

Subject:

PRODUCTION POSSIBILITY

OWNER: ✓ Arthur L. Haack, P. O. Box 832, Yuma, Ariz.

METALS: Lead and silver.

LOCATION

This property, consisting of 18 to 20 claims, is located in the Castle Dome Mining District, 45 miles northeast of Yuma, and adjoins the Castle Dome group on the south. The latter group is now being worked by the Arizona Lead Company of Yuma; ores being trucked to a 200-ton mill located near the McPhaul bridge on the Gila River, 25 miles southwest of Castle Dome.

HISTORICAL

The Castle Dome Mining District was organized in 1863. The original discovery, however, was made many years earlier. The Senora claims have been owned and worked in a small way by Haack for the last 25 years; his surface equipment and concentrator consisting of a headframe, hoist and Stebbins dry concentrator, with a capacity of ten tons per shift. Concentrates running about 60 per cent lead and from 25 to 30 ounces silver per ton have been shipped through the years to the El Paso Smelting Works. The property is now idle due to the fact that Haack is not young any more and his health is not the best. The Arizona Lead Company of Yuma has offered to take the Senora property over and treat the ores and dumps in the 200-ton mill mentioned; but as yet no deal has been arranged.

VEINS - WORKINGS

The prevailing country rock consists of schists, through which a mineralized zone 700 feet wide runs N. 20 to 40 degrees W. In this zone are a number of parallel veins from 3 to 5 feet wide and dipping from 50 to 70 degrees E. The main vein has been developed by a working shaft sunk 300 feet deep on slope of vein, with some drifting on the 200 foot level on broken material northwesterly and southeasterly of shaft; but no pay ore was found on this level. About 475 feet of drifting has been done on the 200-foot level, the vein being stoped above the drift southeast of shaft. To the northwest of shaft no stoping has been done between the 200 and 100 foot levels. This block of ore, which still remains intact, averages 15 per cent lead and 8 ounces silver per ton, according to Haack.

### DUMPS AND BACK-FILLS IN MINE

At the time of my last visit, September 17, 1942, Mr. George I. Holmes, Superintendent of the Arizona Lead Company of Yuma, informed me that there are around 20,000 tons of broken ore on the dumps of the Senora group and considerable tonnage of back-fills in the old workings of this mine that will average about 8 per cent lead with low silver values.

### HOW THIS PROPERTY COULD BE PUT INTO PRODUCTION AGAIN

As stated, this property has been closed down due to the age and poor health of owner. The most feasible arrangement, in order to get property into production again would be for the Arizona Lead Company of Yuma to make arrangements with owner to take it over and start immediate milling of dumps and back-fills in the mine, as is now being carried out by this company with reference to Castle Dome ores. If this arrangement cannot be made, the next best move would be for Haack to give a lease and option on property to some company willing and able to invest about \$150,000 to be spent, more or less, covering the following items: New development work in the mine, \$50,000; erection of a 100-ton milling plant on the Gila River, 25 miles from property \$100,000. Said plant to consist of coarse and fine grinding rolls, jigs and tables, along the lines already carried out by the Arizona Lead Company of Yuma.

NOTE: The Castle Dome Access Road Project, already sponsored by the said Arizona Lead Company of Yuma, would be of equal benefit to the Senora property. (See my report on the Castle Dome Mines).

Elgin B. Holt

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine SENORA GROUP (7 claims).

Date December 19, 1939.

District Castle Dome, Yuma, Ariz.

Engineer Elgin B. Holt.

Subject:

SYNOPSIS REPORT

OWNER. - Arthur R. Haack.  
ADDRESS. - P. O. Box 832, Yuma, Arizona.

LOCATION. - Property located 45 miles northeast of Yuma, in the Castle Dome mining District, on the west side of the Castle Dome Mountains.

HISTORY. - The Castle Dome lead mines were discovered by Americans and Mexicans during the 1860's and operations have been carried on intermittently since that time. Production ranges from \$3,000,000 to \$5,000,000 in silver-lead values, during the history of these properties.

SENORA GROUP. - Geology consists more or less as follows: Prevailing country rock consists of schists, through which a mineralized zone 700 feet wide runs from north to south. In this zone are a number of parallel veins around 3 feet wide. Main vein has been developed by shaft 300 feet deep on vein, with some drifting on broken material north and south of shaft; but no pay ore shoot was found; said drifts being run on 300-ft. level of mine. About 475 feet of drifting has been done on 200 ft. level, the vein being stoped above south of shaft. To the north of shaft no stoping has been done between the 200 and 100 ft. levels. This block of ore averages 15% lead and 8 ounces silver per ton.

PRESENT OPERATIONS. - Mine now being operated by Arthur R. Haack, who employs an extra man occasionally.

MILL. - Consists of crusher, rolls, followed by a Stebbins dry concentrator. This mill grinds about 10 tons of ore in one 8-hour shift and produces one ton of concentrate in that time, assaying 60% lead and 30 ounces silver per ton. Cost of R. R. freight from Dome Station to El Paso Smelting Works on said product is \$6.80 per ton; Dome Station being located 30 miles from property. Cost of trucking from mine to Dome, in short lots, is about \$5.00 per ton. This rate could be lowered provided mine production could be increased materially.

FLOURITE. - Mine also produces Flourite on 200 ft. level, on which the vein is 3 feet wide, one-half of vein being almost pure Flourite that when cleaned assays 98% CaF<sub>2</sub>, quoted at about \$22.00 per ton. California buyers come to property with trucks and pay Haack \$12.00 per ton for the Flourite at mine loaded on trucks.

WATER. - Water is generally encountered in all the mines of the Castle Dome District at from 350 to 400 feet depth. By sinking deeper it is believed ample mill water can be secured. If not, ample water can be pumped from the Gila River, 20 miles distant. Or a mill could be located at the said river and ore hauled to it for treatment over a level road with down hill grade. This road is maintained by County to within six miles of property. From mine to the said County road there is an old dirt road which is in fairly good shape.

OPINION. - This and adjoining properties warrant investigation by any company looking for a meritorious lead-silver mine. Values can be recovered by flotation.

SENORA MINE

September 23, 1942

Castle Dome, Yuma Co.

Elgin B. Holt

PRODUCTION POSSIBILITY

OWNER: Arthur L. Haack, P. O. Box 832, Yuma, Ariz.

METALS: Lead and silver.

LOCATION

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HISTORICAL

The Castle Dome Mining District was organized in 1858. The original discovery, however, was made many years earlier. The Senora claims have been owned and worked in a small way by Haack for the last 25 years; his surface equipment and concentrator consisting of a headframe, hoist and Stebbins dry concentrator, with a capacity of ten tons per shift. Concentrates running about 60 per cent lead and from 25 to 30 ounces silver per ton have been shipped through the years to the El Paso Smelting Works. The property is now idle due to the fact that Haack is not young any more and his health is not the best. The Arizona Lead Company of Yuma has offered to take the Senora property over and treat the ores and dump in the 200-ton mill mentioned; but as yet no deal has been arranged.

VEINS - WORKINGS

The prevailing country rock consists of schists, through which a mineralized zone 700 feet wide runs N. 30 to 40 degrees W. In this zone are a number of parallel veins from 3 to 5 feet wide and dipping from 50 to 70 degrees E. The main vein has been developed by a working shaft sunk 300 feet deep on slope of vein, with some drifting on the 300 foot level on broken material northwesterly and southeasterly of shaft; but no pay ore was found on this level. About 475 feet of drifting has been done on the 300-foot level, the vein being stopped above the drift southeast of shaft. To the northwest of shaft no stopping has been done between the 300 and 100 foot levels. This block of ore, which still remains intact, averages 15 per cent lead and 8 ounces silver per ton, according to Haack.



### DUMPS AND BACK-FILLS IN MINE

At the time of my last visit, September 17, 1942, Mr. George I. Holmes, Superintendent of the Arizona Lead Company of Yuma, informed me that there are around 20,000 tons of broken ore on the dumps of the Senora group and considerable tonnage of back-fills in the old workings of this mine that will average about 8 per cent lead with low silver values.

### HOW THIS PROPERTY COULD BE PUT INTO PRODUCTION AGAIN

As stated, this property has been closed down due to the age and poor health of owner. The most feasible arrangement, in order to get property into production again would be for the Arizona Lead Company of Yuma to make arrangements with owner to take it over and start immediate milling of dumps and back-fills in the mine, as is now being carried out by this company with reference to Castle Dome ores. If this arrangement cannot be made, the next best move would be for Haack to give a lease and option on property to some company willing and able to invest about \$150,000 to be spent, more or less, covering the following items: New development work in the mine, \$50,000; erection of a 100-ton milling plant on the Gila River, 25 miles from property \$100,000. Said plant to consist of coarse and fine grinding rolls, jigs and tables, along the lines already carried out by the Arizona Lead Company of Yuma.

NOTE: The Castle Dome Access Road Project, already sponsored by the said Arizona Lead Company of Yuma, would be of equal benefit to the Senora property. (See my report on the Castle Dome Mines).

Elgin B. Holt

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

PRODUCTION POSSI-  
BILITY SURVEY

TYPE NO. 1

Mine ' SENORA MINE

Date September 23, 1942

District Castle Dome, Yuma Co.

Engineer Elgin B. Holt

Subject:

PRODUCTION POSSIBILITY

OWNER: ✓ Arthur L. Haack, P. O. Box 832, Yuma, Ariz.

METALS: ' Lead and silver.

LOCATION

This property, consisting of 18 to 20 claims, is located in the Castle Dome Mining District, 45 miles northeast of Yuma, and adjoins the Castle Dome group on the south. The latter group is now being worked by the Arizona Lead Company of Yuma; ores being trucked to a 200-ton mill located near the McPhaul bridge on the Gila River, 25 miles southwest of Castle Dome.

HISTORICAL

The Castle Dome Mining District was organized in 1863. The original discovery, however, was made many years earlier. The Senora claims have been owned and worked in a small way by Haack for the last 25 years; his surface equipment and concentrator consisting of a headframe, hoist and Stebbins dry concentrator, with a capacity of ten tons per shift. Concentrates running about 60 per cent lead and from 25 to 30 ounces silver per ton have been shipped through the years to the El Paso Smelting Works. The property is now idle due to the fact that Haack is not young any more and his health is not the best. The Arizona Lead Company of Yuma has offered to take the Senora property over and treat the ores and dumps in the 200-ton mill mentioned; but as yet no deal has been arranged.

VEINS - WORKINGS

The prevailing country rock consists of schists, through which a mineralized zone 700 feet wide runs N. 20 to 40 degrees W. In this zone are a number of parallel veins from 3 to 5 feet wide and dipping from 50 to 70 degrees E. The main vein has been developed by a working shaft sunk 300 feet deep on slope of vein, with some drifting on the 200 foot level on broken material northwesterly and southeasterly of shaft; but no pay ore was found on this level. About 475 feet of drifting has been done on the 200-foot level, the vein being stoped above the drift southeast of shaft. To the northwest of shaft no stoping has been done between the 200 and 100 foot levels. This block of ore, which still remains intact, averages 15 per cent lead and 8 ounces silver per ton, according to Haack.

### DUMPS AND BACK-FILLS IN MINE

At the time of my last visit, September 17, 1942, Mr. George I. Holmes, Superintendent of the Arizona Lead Company of Yuma, informed me that there are around 20,000 tons of broken ore on the dumps of the Senora group and considerable tonnage of back-fills in the old workings of this mine that will average about 8 per cent lead with low silver values.

### HOW THIS PROPERTY COULD BE PUT INTO PRODUCTION AGAIN

As stated, this property has been closed down due to the age and poor health of owner. The most feasible arrangement, in order to get property into production again would be for the Arizona Lead Company of Yuma to make arrangements with owner to take it over and start immediate milling of dumps and back-fills in the mine, as is now being carried out by this company with reference to Castle Dome ores. If this arrangement cannot be made, the next best move would be for Haack to give a lease and option on property to some company willing and able to invest about \$150,000 to be spent, more or less, covering the following items: New development work in the mine, \$50,000; erection of a 100-ton milling plant on the Gila River, 25 miles from property \$100,000. Said plant to consist of coarse and fine grinding rolls, jigs and tables, along the lines already carried out by the Arizona Lead Company of Yuma.

NOTE: The Castle Dome Access Road Project, already sponsored by the said Arizona Lead Company of Yuma, would be of equal benefit to the Senora property. (See my report on the Castle Dome Mines).

Elgin B. Holt

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine SENORA GROUP (7 claims).

Date December 19, 1939.

District Castle Dome, Yuma, Ariz.

Engineer Elgin B. Holt.

Subject:

SYNOPSIS REPORT

OWNER. - Arthur R. Haack.  
ADDRESS. - P. O. Box 832, Yuma, Arizona.

LOCATION. - Property located 45 miles northeast of Yuma, in the Castle Dome mining District, on the west side of the Castle Dome Mountains.

HISTORY. - The Castle Dome lead mines were discovered by Americans and Mexicans during the 1860's and operations have been carried on intermittently since that time. Production ranges from \$3,000,000 to \$5,000,000 in silver-lead values, during the history of these properties.

SENORA GROUP. - Geology consists more or less as follows: Prevailing country rock consists of schists, through which a mineralized zone 700 feet wide runs from north to south. In this zone are a number of parallel veins around 3 feet wide. Main vein has been developed by shaft 300 feet deep on vein, with some drifting on broken material north and south of shaft; but no pay ore shoot was found; said drifts being run on 300-ft. level of mine. About 475 feet of drifting has been done on 200 ft. level, the vein being stoped above south of shaft. To the north of shaft no stoping has been done between the 200 and 100 ft. levels. This block of ore averages 15% lead and 8 ounces silver per ton.

PRESENT OPERATIONS. - Mine now being operated by Arthur R. Haack, who employs an extra man occasionally.

MILL. - Consists of crusher, rolls, followed by a Stebbins dry concentrator. This mill grinds about 10 tons of ore in one 8-hour shift and produces one ton of concentrate in that time, assaying 60% lead and 30 ounces silver per ton. Cost of R. R. freight from Dome Station to El Paso Smelting Works on said product is \$6.80 per ton; Dome Station being located 30 miles from property. Cost of trucking from mine to Dome, in short lots, is about \$5.00 per ton. This rate could be lowered provided mine production could be increased materially.

FLOURITE. - Mine also produces Flourite on 200 ft. level, on which the vein is 3 feet wide, one-half of vein being almost pure Flourite that when cleaned assays 98% CaF<sub>2</sub>, quoted at about \$22.00 per ton. California buyers come to property with trucks and pay Haack \$12.00 per ton for the Flourite at mine loaded on trucks.

WATER. - Water is generally encountered in all the mines of the Castle Dome District at from XXX 350 to 400 feet depth. By sinking deeper it is believed ample mill water can be secured. If not, ample water can be pumped from the Gila River, 20 miles distant. Or a mill could be located at the said river and ore hauled to it for treatment over a level road with down hill grade. This road is maintained by County to within six miles of property. From mine to the said County road there is an old dirt road which is in fairly good shape.

OPINION. - This and adjoining properties warrant investigation by any company looking for a meritorious lead-silver mine. Values can be recovered by flotation.