



CONTACT INFORMATION

Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources 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.

PRINTED: 01/17/2003

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: CRYSTAL CAVERN

ALTERNATE NAMES:

BIG BERTHA
PURPLE COW LEDGE
VETA GRANDE

LA PAZ COUNTY MILS NUMBER: 250

LOCATION: TOWNSHIP 3 N RANGE 20 W SECTION 3 QUARTER S2
LATITUDE: N 33DEG 37MIN 31SEC LONGITUDE: W 114DEG 18MIN 28SEC
TOPO MAP NAME: MIDDLE CAMP MTN - 7.5 MIN

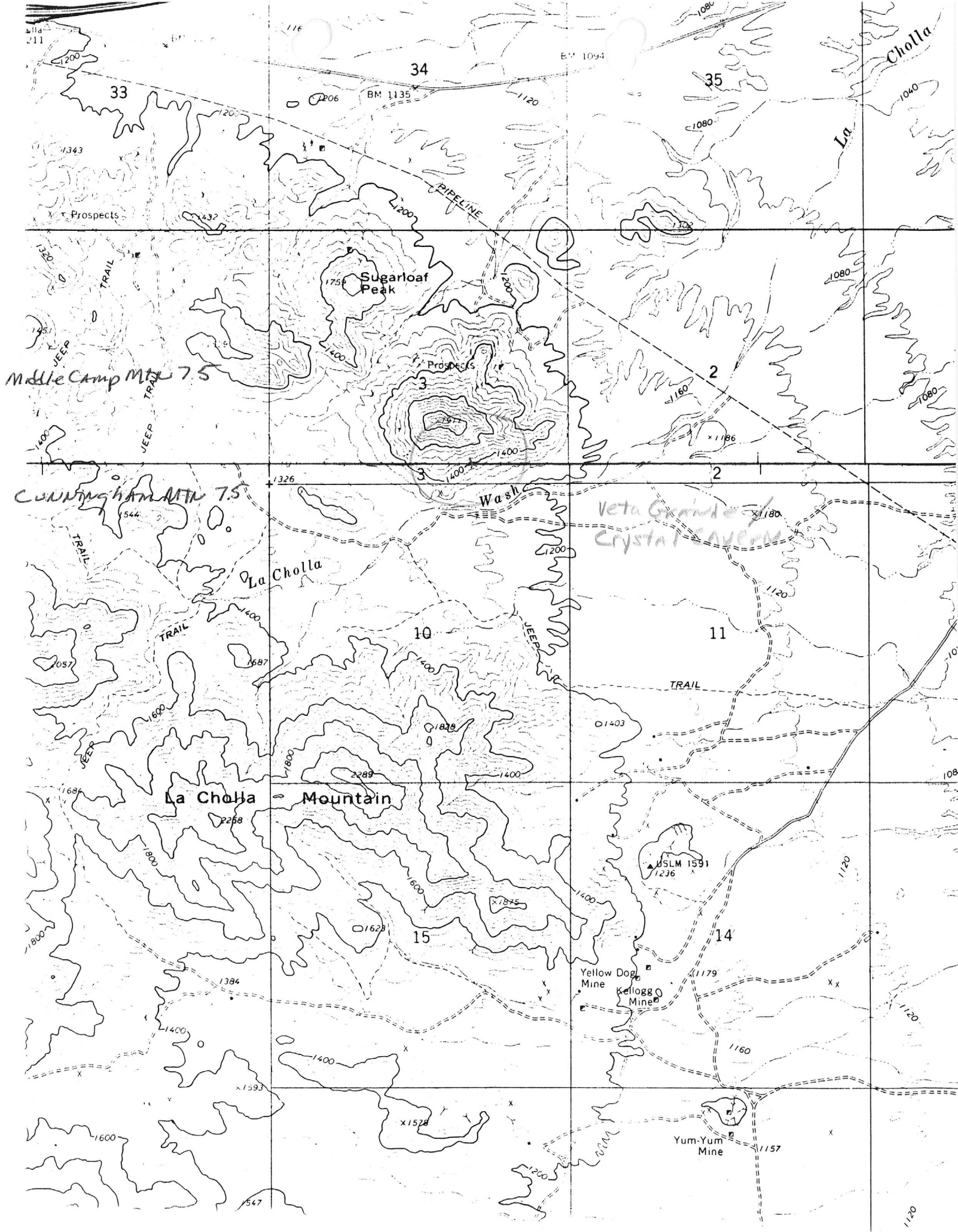
CURRENT STATUS: PAST PRODUCER

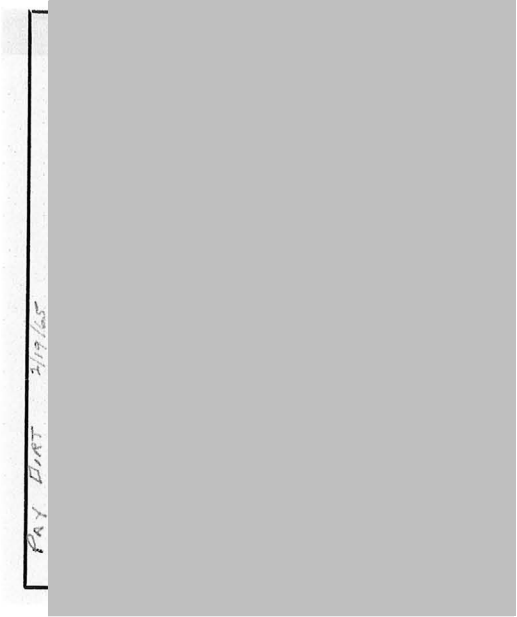
COMMODITY:

GEMSTONE QUARTZ XTAL
QUARTZ QUARTZ XTAL
SPECIMENS QUARTZ XTAL
SPECIMENS ZUNYITE
SPECIMENS SPECULARITE

BIBLIOGRAPHY:

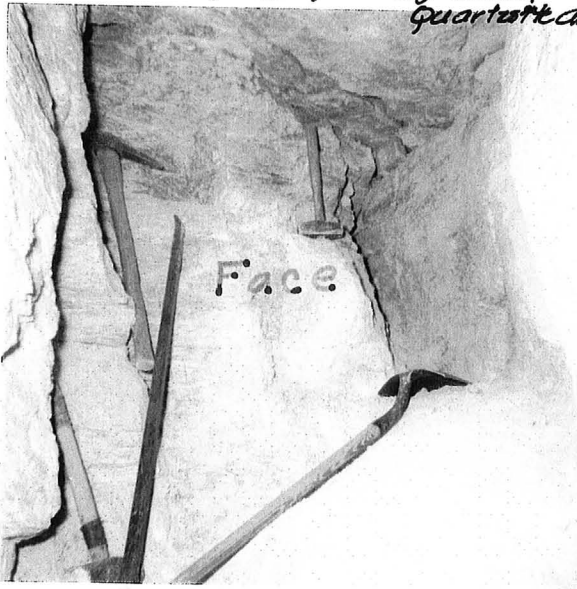
AZBM FILE DATA
ADMMR CRYSTAL CAVERN CLAIM FILE





Flay DIRT 3/19/65

TOP Big Bertha
Quartzite Area.

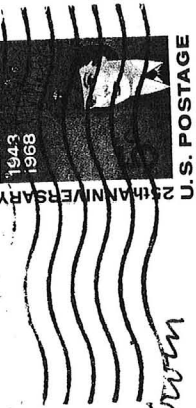


Face

Abb. 107 - 108 - 109 - 110 - 111 - 112 - 113 - 114 - 115 - 116 - 117 - 118 - 119 - 120 - 121 - 122 - 123 - 124 - 125 - 126 - 127 - 128 - 129 - 130 - 131 - 132 - 133 - 134 - 135 - 136 - 137 - 138 - 139 - 140 - 141 - 142 - 143 - 144 - 145 - 146 - 147 - 148 - 149 - 150 - 151 - 152 - 153 - 154 - 155 - 156 - 157 - 158 - 159 - 160 - 161 - 162 - 163 - 164 - 165 - 166 - 167 - 168 - 169 - 170 - 171 - 172 - 173 - 174 - 175 - 176 - 177 - 178 - 179 - 180 - 181 - 182 - 183 - 184 - 185 - 186 - 187 - 188 - 189 - 190 - 191 - 192 - 193 - 194 - 195 - 196 - 197 - 198 - 199 - 200

H. L. Hubbard
P.O. Box 701
Oracle, Ariz.
85623

NOV 20 1968
14
-AM



Field Engr. W. W. Brown
Room 164, State Office Bldg.,
415 W. Congress St.,

Tucson, Arizona - 85701

Mailed pc of
5-3-62 + 2-7-63
reports

Dear Mr. Swain:

P.O. Box 401, Orade, Ariz. 85623

11-14-'68

Just a note to ask if you received a copy of Min. Report by Lew Smith on my Crystal Cavern. Again from your main office? If so, will you ~~let~~ either send it to me or (better yet) bring it to your regular visit to Mammoth, Ariz. if due there before Jan. 1st 1969? I've just seen the said claim (Charlton) and found it in good shape. (The only feature changed is the geyserite which, ^{got water?)} was weathered from pure white to a dirty gray and is much harder to find (or see) underground! Yours truly,
Henry S. Hubbard.

Field Engr. Smith
Ariz. State Dept. of
Mineral Resources

P. O. Box 40,
Quartzsite, Ariz.

604401

604401

85623

Dear Mr. Smith:

Just a note to say
that I would like to show you the
old hot-water course in my
Crystal Cavern mine when you
next plan to visit Quartzsite.

The snap-shot shows a drift
approx. 4' x 7' x 15' long in a
contact of 2 faults (?). The "roof"
is level and indicates the "flat
fault," while the walls dip
southerly about 80° and indicate
the fault striking easterly.

Hope to see you in June.

Very truly yours,
Henry L. Hubbard
P. O. Box 40.

CRYSTAL CAVERN

LA PAZ COUNTY

HM WR 3/18/88: Crystal Cavern (file) should be moved to South Center Sec 3, T3N R20W. This is a mineral specimen occurrence of euhedral specularite and quartz crystals. It was field checked in 1984.

Mr. Hubbard reported that he had driven a tunnel along a fissure "vein" and had encountered a large cave-like opening, 12 feet long, 6 feet high and 4 feet wide, that he called a water course. The back, or roof, is flat dipping and is smooth. This was underlain by rubble. There is some evidence of slickensides on this wall. The sides are the fairly definite hangwall and footwall of the fissure "vein". This fissure, up to the cavity, was filled by quartz and brecciated schist country rock, and some well formed specularite crystals. Several narrow, vuggy quartz veinlets branch into the footwall of the fissure. These may be partially filled tension cracks. They contain fine examples of flat quartz crystals and specularite that are hard to recover without excessive breakage. The first 15 feet of the tunnel was in similar material, but it was much wider than in the tension cracks. The same sort of material rings a hill for 1500 feet and appears to lie in a flat position. Hubbard thinks that this material is deposited along a thrust fault. The presence of breccia or drag material under the quartz - specularite material seems to support this idea. The surrounding rock is mainly amphibolic and quartz-sericite schists which nearby were intruded by dioritic rocks. The schists are severely disrupted by faulting and tight local folding. Hubbard is mining for the quartz and specularite crystals which are decidedly unique in crystal forms. The quartz pans a little gold and sporadic copper oxide stains are seen both in the schists and the diorite. Mr. Hubbard plans to test-drill the footwall zone in the tunnel to determine if the quartz tension veinlets will coalesce in to wider areas which would pay to work.

The tunnel cavity shows a small flow of water and the walls are thinly coated by calcium carbonate deposits.

Interview with Henry G. Hubbard, owner, P.O. Box 40, Quartzsite LAS Memo 2-7-63

Letter from Henry G. Hubbard

Mr. Hubbard sent a photograph of a drift adit, 4' x 7' x 15' long, which contacts 2 faults (?). The back of the adit apparently is a flat fault. The walls are smooth and dip 80° southward and strike easterly.

A visit will be made to the Big Bertha on June 6. Memo LAS 5-31-63

BIG BERTHA CLAIM
(Crystal Cavern Claim)

YUMA COUNTY

H. G. Hubbard reported that he would begin active mining again at his Crystal Cavern Claim about the 1st of November. He had developed a new area last spring that looked good.
LAS ASMOA Conf. 10-10-63

Mr. Hubbard reported that he had sunk along a strong fracture from his adit and had encountered some excellent crystals. He plans to continue working this zone which is fairly open.
LAS 2-6-64

Hubbard is still working the Crystal Cavern Claim but has had only a small production of late. He is trying to develop a solution cavity, that shows some promise. LAS Conf. 6-10-64

Hubbard has been following a water course in his Crystal Cavern Claim ^{west} southeast of Quartzsite.
LAS Conf. 10-13-64

Mr. Hubbard reported that he had received several (3) inquiries in regard to his ad in Pay Dirt but these people had no backing. He has opened a new water course that he hopes will lead to more good crystals. LAS Memo 10-13-65

Mr. Hubbard reported that he plans to confer with BLM officials as to whether he could patent the claim on the basis of thermal water. This claim could possibly be patented on the unique minerals from this deposit such as very good quartz and specularite crystals and gyselite and zunyite, but the spa water might entail water rights and other problems (see Verity pp 68-69). This would place jurisdiction in the State Land Department, Phoenix, as far as water is concerned but it doesn't specify thermal water. Fritz Ryan stated that this state does not appropriate underground water, although other States, such as California, do.
LAS Memo 2-9-66

Mine visit November 18, 1972 - Crystal Cavern Claim - Idle. The only sign of recent work, if any, is in the nature of assessment work. The workings are in solid rock and follow an ancient thermal water course. All material must be hauled out by hand because of the erratic course followed by the underground workings. The dump contains a large amount of reasonably good mineral specimen material. On November 21, 1972, a letter requesting more recent information on the property was sent to the last reported owner: Mr. Henry G. Hubbard, P.O. Box 401, Oracle, Arizona, 85623. As of January 22, 1973, no reply has been received. KAP Report of January 18, 1973

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

FILED
JUN 17 1963

Mine CRYSTAL CAVERN CLAIM (OLD BIG BERTHA)

Date 6/6/63

District LA PAZ -QUARTZSITE YUMA COUNTY

Engineer Lewis A. Smith

Subject Mine Visit with Henry G. Hubbard (retired Mining Engineer)

PROPERTY: 1 claim

LOCATION: Sec 3, T3N, R20W.

OWNER: Henry G. Hubbard, P.O. Box 40, Quartzsite, Arizona

MINERALS: Specular Hematite crystals, zunyite, quartz, geyselite.

WORK: (1) An open cut 60-feet wide, up to 15 feet at the face, and irregular in width.
(2) An Adit that runs N 60 degrees E for 20 feet, then curves for 20 feet east and then N.

GEOLOGY: The area is composed of highly altered schists capped by a flow of basalt (?) The schist generally dips 30-40 degrees N or NW and the laminations strike generally EW to SW. Locally the schist is shattered by NE - SW to W trending fractures. At three places along the SW slope of the high butte, on which the claim is located are slumped areas, perhaps 100 feet long and 50-feet wide, that are former locations for thermal springs. These are aligned in a NW - SE direction, but no structure other than the shears that may join them, was evident although it probably exists. The NE - SW or west trending fractures have developed water courses up to 1 foot wide and these are lined by quartz, geyselite, specularite and zunyite. Geyselite, here, is a white, spongy, and crumbly incrustation. It is at times roughly stalactitic and often occurs as films. Geyselite abundantly occurs as a siliceous sinter deposit at Yellowstone National Park, Wyoming, as a result of geyser depositions. The specularite occurs in tabular crystals, or as crystal rosettes, that project out from the quartz (massive or crystals) into vugs or other openings, or are intercrystallized with it. The specularite crystals are splendid and have a metallic luster. They belong to the rhombohedral system and sometimes show twins that are grouped in parallel positions. Some quartz crystals are flat, two opposite sides being much wider than the other four sides similar to "Japanese Twins". The zunyite is in minute disseminated crystals (up to 1/16 inch in diameter), in the quartz or silicified schist.

Mr. Hubbard wishes to drill into the ex-spring areas with the view to obtaining thermal water. This would be a heavy gamble because it is hard to figure how deep, you might have to go below the present outcrop. The second objective is to see if his crystal materials are found at 250-300 feet below the surface. Mr. Hubbard has marketed a considerable amount of quartz and specularite crystals to mineral dealers. He is now hunting for more.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Big Bertha Claim Date May 3, 1962
District La Paz-Quartzsite District - Yuma County Engineer Lewis A. Smith
Subject: Interview with H. G. Hubbard, Box 40, Quartzsite

Property: One unpatented lode claim

Location: 8 miles southwest of Quartzsite (south slope La Cholla Mountain) - Approx. Sec. 17, T3N, R20W.

Owner: H. G. Hubbard

Work: One open cut, connecting crystal "caves", along a fissure. The cut is about 75 feet long, 8 feet wide, and variable in depth.

Minerals: Specularite and quartz crystals

Geology: The fissure trends NE-SW and crosscuts the sericite schist laminae, which trend nearly EW and dip 30 degrees north. The principal gangue is clear white quartz. The quartz and specularite crystals are beautifully formed, in the open spaces and are being marketed to mineral dealers (mainly in the Los Angeles area). Mr. Hubbard gave the Museum 3 typical specimens. Some small zunyite (basic ortho silicate of aluminum) approximately $(Al(OH_1F_1Cl_2)_6 \cdot Al_2Si_3O_{12})$ tetrahedrons, are formed between the quartz crystals. According to Mr. Hubbard, they resemble those from Red Mountain, near Ouray, Colorado.



DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date June 15, 1963

- 1. Mine: Crystal Cavern Claim (Old Big Bertha)
- 2. Location: Sec. 3 Twp. 3N Range 20W Nearest Town Quartzsite Distance 8 miles
 from Q. → Direction SW Nearest R.R. Santa Fe at Salome, Ariz. → (40 miles)
 Blythe, Calif. → (19 miles)
 Road Conditions Good; last 3.5 mi. is "by fair desert road with ruts."
- 3. Mining District and County: La Paz - Quartzsite in Yuma County.
- 4. Former Name of Mine: Big Bertha
- 5. Owner: Henry L. Hubbard
 Address: P.O. Box 40, Quartzsite, Ariz.
- 6. Operator: same as above
 Residence Address: Crystal Cave building opp. Hi-Jolly Auto Court.
- 7. Principal Minerals: specular hematite crystals; bustamite; quartz;
 geyserite; and much talc.
- 8. Number of Claims: Lode ~~one~~ Patented ~~one~~ Unpatented one
 Placer Patented Unpatented

9. Type of Surrounding Terrain: Rugged in immediate vicinity but fairly level valleys on N and S. The high butte upon which this claim lies is nearly adjoined on the NW by the "Sugar Loaf" mtn. shown on U.S.G.S. topog sheet "Dome Rock Mts."

10. Geology and Mineralization: Please refer to the comprehensive Geology paragraph in the attached Field Engineers Report by Mr. Lewis A. Smith, dated June 6, 1963.

My only addition to his comment upon the country rock is to add the one word "talc" to his description of the "highly altered" and "silicified schists." This talc is widespread and plentiful but shows high grade pockets only in the "ore body", especially near crystals.

11. Dimension and Value of Ore Body: The above heading is exceedingly difficult to estimate in a prospect of this character. Cracks often occur along the old water-courses & generally contain crystals. Thermal water is the most

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.

attractive objective on this claim. Many "trace metals" were reported in spectrographic tests of crust deposits. No harmful minerals were thus encountered. (over)

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.

• F O U N D E D 1 8 6 2 •

Our 94th Year

3000 RIDGE RD. E. or P. O. BOX 24
ROCHESTER 9, NEW YORK
June 21, 1956

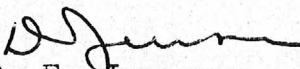
Mr. Henry G. Hubbard
Box 145
Blythe, California

Dear Mr. Hubbard:

We were pleased to receive your letter of June 12th, and also the box of crystallized Hematite. These specimens are real beauties, but our feeling is that the price is too high for ordinary wholesale. We have, however, kept three specimens, priced at \$15.00, \$10.00, and \$1.00. The balance is being returned to you under separate cover.

Sincerely,

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.


D. E. Jensen,
Head, Geological Division

DEJ:HH

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC. NO 1676

FOUNDED 1862

ENDORSEMENT BY PAYEE ACKNOWLEDGES FULL PAYMENT
OF ITEMS LISTED ON ATTACHED REMITTANCE ADVICE

ROCHESTER, N. Y.

DATE 6-25-56

PAY

W.N.S.E. INC. \$26 & 00 CTS.

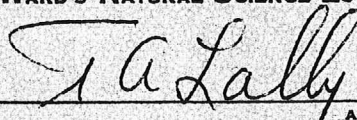
\$ 26.00

50-18
223

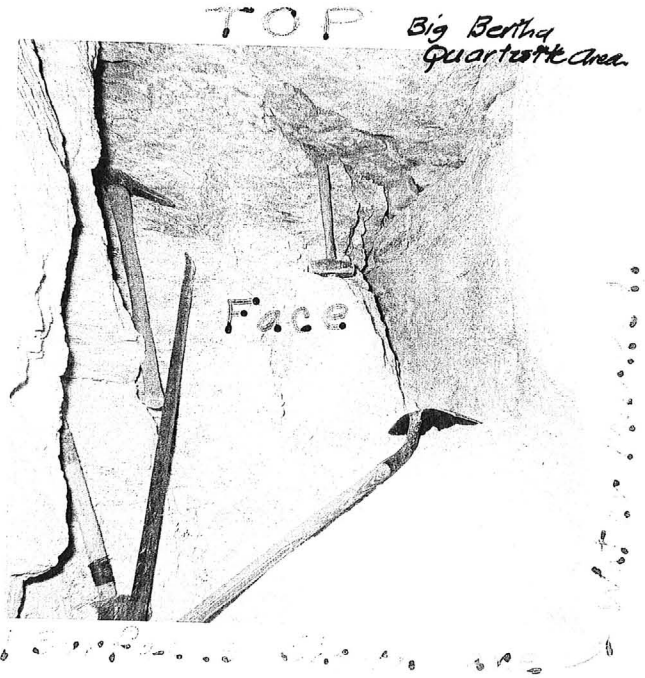
TO THE
ORDER
OF

Henry G Hubbard
Box 145
Blythe, California

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.


AUTHORIZED SIGNATURE

TO
RIDGE-CULVER OFFICE
GENESEE VALLEY UNION TRUST COMPANY
ROCHESTER, N. Y.



WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.

• F O U N D E D 1 8 6 2 •

Our 94th Year

3000 RIDGE RD. E. or P. O. BOX 24

ROCHESTER 9, NEW YORK

June 21, 1956

Mr. Henry G. Hubbard
Box 145
Blythe, California

Dear Mr. Hubbard:

We were pleased to receive your letter of June 12th, and also the box of crystallized Hematite. These specimens are real beauties, but our feeling is that the price is too high for ordinary wholesale. We have, however, kept three specimens, priced at \$15.00, \$10.00, and \$1.00. The balance is being returned to you under separate cover.

Sincerely,

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.


D. E. Jensen,
Head, Geological Division

DEJ:HH

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC. No 1676

FOUNDED 1862

ENDORSEMENT BY PAYEE ACKNOWLEDGES FULL PAYMENT OF ITEMS LISTED ON ATTACHED REMITTANCE ADVICE

ROCHESTER, N. Y.

DATE 6-25-56

PAY

W.N.S.E. INC. \$26.00 CTS.

\$ 26.00

50-18
223

TO THE ORDER OF

Henry G Hubbard
Box 145
Blythe, California

WARD'S NATURAL SCIENCE ESTABLISHMENT, INC.


AUTHORIZED SIGNATURE

TO
RIDGE-CULVER OFFICE
GENESEE VALLEY UNION TRUST COMPANY
ROCHESTER, N. Y.