



CONTACT INFORMATION

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Arizona Department of Mines and Mineral Resources Mining Collection

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02/27/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: BLACK DIAMOND MINE

ALTERNATE NAMES:
 ENGLANDER

COCHISE COUNTY MILS NUMBER: 97

LOCATION: TOWNSHIP 18 S RANGE 24 E SECTION 29 QUARTER NE
LATITUDE: N 31DEG 50MIN 38SEC LONGITUDE: W 109DEG 55MIN 42SEC
TOPO MAP NAME: BLACK DIAMOND PEAK - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

COPPER
SILVER
IRON HEMA-MAGNE
LEAD
GOLD LODE
TITANIUM DELETERIOUS?

BIBLIOGRAPHY:

KEITH, S.B., 1973, AZBM BULL. 187, P. 68
ADMMR BLACK DIAMOND MINES FILE
COPPER HANDBOOK 1907
TENNEY, HISTORY OF MINING IN AZ
USBM IC 8236, P. 22-24
ANTHONY, J.W, ET AL MINERALOGY OF AZ P. 114
USBM IC 8246, 1964 P. 22-24
CEDERSTROM, D.J. U OF A THESIS, 1946

*Scanned
43M
5-25-11*

BLACK DIAMOND MINES

REFERENCES

COCHISE COUNTY

PEARCE DIST.

T18S R24E Sec. 19,20
28,29

Cochise County MILS Index #97

AKA: Englander

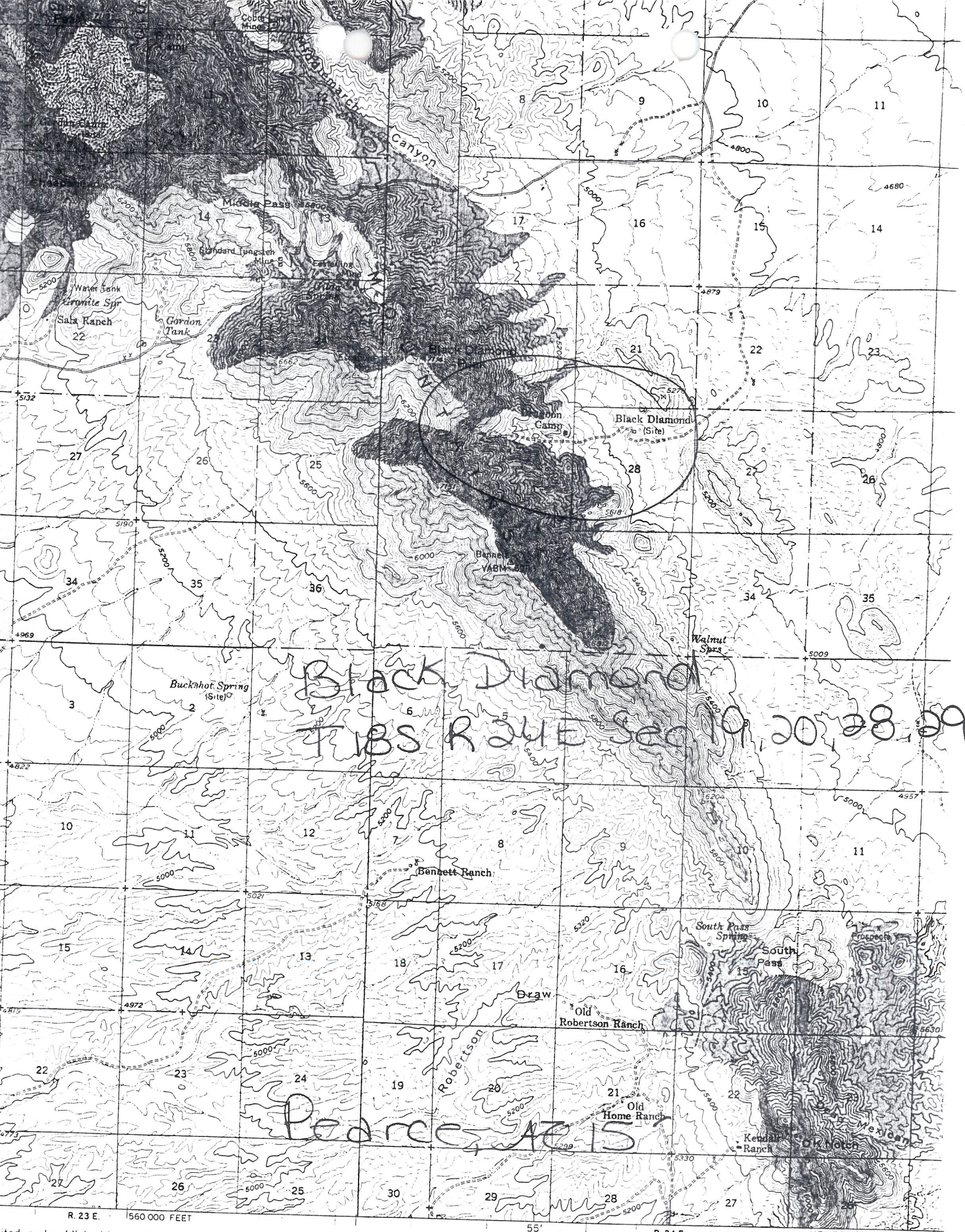
ABM Bull. 187, p. 68

Copper Handbook 1907

Tenney-History of Mining in AZ.

USBM IC 8236, p. 22-24

Pearce, AZ 15' Topo (included in file)



ited, and published by the Geological Survey
SGS and USC&GS

from aerial photographs by ER-55 plotter
raphs taken 1956. Field check 1958



BLACK DIAMOND MINE

COCHISE COUNTY

Production Possibilities of the Marginal
Copper Mines in Arizona, 1941 p. 95

SEE: IC 8236 p. 22

Tenney - History of Mining in Arizona

Copper Handbook - 1907

See: Eagle-Picher "B" Confidential files. Now in this file.

ABM Bull. 187, p. 10, 68

MILS Sheet sequence number 0040030100

NAME OF MINE: BLACK DIAMOND

COUNTY: COCHISE

DISTRICT:

METALS: CU

OPERATOR AND ADDRESS:

MINE STATUS

DATE:

DATE:

5/1/44

G. A. Pennington, Pearce

5/1/44 Developing

11/44 Idle

Owners: Howard &
Ethel Boulter, 1325
W. Latham, Phx.

MEMORANDUM FOR FILES

FROM: ANN TURNEY, ADM. ASST.

DATE: 2/5/80

Mr. Gary Jordan, Secretary-Treasurer of Cordyne Corporation, 630 S.W. Park Avenue, Portland, Oregon 97205, phone (503) 241-2963, was in the office on February 5, 1980 to talk to Mr. Jett and to look at our file on the Black Diamond Mine in Cochise County near Pearce. Mr. Jett was not in so he talked to me and looked at the file. He said that the Cordyne Corporation CEMA Division, P.O. Box 201, Pearce 85625, was now sole owner of the Black Diamond Mine and that they were in town making contacts with people in the Phoenix area (Mineral Resources, Mine Inspector, etc.) prior to beginning some exploration work at the mine. Mr. Jordan has been hired by Cordyne Corporation as a management consultant to help them get the mine started. He said that they also owned the Pearce Mill.

They will have a project manager at the mine and will give us additional information for our file as soon as it is prepared. He said that they will also include some pictures they have taken.

Another person whose name was given to contact was Gary Howard of Molloy, Jones, Donahue, Trachta, Childers & Mallins, P.C. Arizona Bank Plaza - 22nd Floor, 33 N. Stone Ave. P.O. Box 2268, Tucson, 85702 phone: 622-3531.

12. Comments of S.E.

A loan is not recommended for the following reasons:

1. Geology of the stopes and underground workings show the non-existence of downward continuation of ore either in the fissure or in the stopes.
2. Unblasted 2 inch drill holes in various places throughout the stopes indicate that the Black Diamond Mining Company were not overlooking any ore remaining in the walls of the stopes.
3. Checking of applicants' samples showed some samples higher and others lower than your engineers, but samples represent only small bunches of ore still frozen to stope walls.
4. Applicant does not have ore that can be mined readily.
5. Most of money ~~would~~ ^{would} be ~~needed~~ ^{needed} for equipment, some of which is not listed by applicant.
6. Source of water appears to be that coming from the wing 1500 feet in from portal of Bagge Tunnel.

ATTACHED

ATTACHED

Map

Scale See map
Date 1901

North

Sec 19

Sec 20

Sec 21

Dominion # 4
600x1500

Procrastination

600x1500

Sur # 1437

Black Diamond

600x1415

Sur # 1437

England

600x1321.5

Sur # 1437

Dominion
600x1500

Dominion # 1
600x1500

Orphan
600x1500

Old smelter & dump

Planch
6 miles

Page
Turned

Twp 13S Range 24E

Patented
Procrastination
Black Diamond
England

Unpatented
Dominion
Dominion No 1
Dominion No 4
Orphan

Section

Scale Above
Date May 19, 1917

VIS6.28

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: Andy Carstensen

Company: Manhattan Resources

Address: P. O. Box 996
Salome, AZ 85348

2. Phone: Canada (604) 669-3397

3. Mine: Black Diamond

4. ADMMR Mine File: Black Diamond Mines

5. County: Cochise MILS Number: 97

6. Summary of information received, comments, etc.:

Andy Carstensen reported he is a consultant for Manhattan Minerals,
401-409 Granville Street, Vancouver, B.C., Canada V6C 1T2.

The company has submitted and expects to receive approval for a plan
of operations from the Forest Service for a drilling project at the
Black Diamond Mine, Cochise County. Work is planned on both patented
and unpatented property.

Date: 5-5-92

Engineer: Ken A. Phillips

Scanned 5/25/91

BLACK DIAMOND MINE

COCHISE COUNTY

MG WR 10/7/83: It is reported that Exxon Minerals Co. just completed drilling at least one hole, 1,000 feet deep, on the Black Diamond property, Cochise County.

+ _____ +

Abstract from "Arizona Iron Ore Deposits" in IRON COMMODITY file: Black Diamond, Cochise County, 5 miles SE of Pearce in the Dragoon Mountains (Secs. 19,20,28,29,30, T18S,R24E). This deposit probably can be classed as a contact Metamorphic type which contains Magnetite and Hematite. The effected rocks are Paleozoic limestones and quartzite and the contact zone is laced by parallel veins with angular offshoots. One wall is porphyry and the other is composed of limestone and quartzite. The mineralized zone is composed of 2 dike-like outcrops, the first of which is 300 feet long and 50 feet wide and the second is narrower and lies parallel to and 50 feet above the first. Samples taken by Fred A. Mattox (1947) indicated an iron content of about 40 percent along the 38 percent of silica. The "gossan" may be expected to contain some copper and silver. Utah Construction Company investigated this deposit in 1959. They were reported to have an option on the mine, but, as far as is known, they failed to exercise the option. Last reported to be optioned to Sam Western and G. Perverill, both of Dragoon, by the owner. (The owner, in August 1957, was Charles Phillips of Yuma, Arizona).

CJH WR 12/18/81: Phone call: Mike Maggiano, 4401 Southwest Blvd., #103, San Angelo, Texas 76904. Telephone: Business (915) 942-4638, home 944-9946. He wants a registered land surveyor to do some work on the Hobart claim (Patent No. 1529) in the Pierce District. He will be in our office between 8:00 - 8:30 Tuesday morning, December 22 to meet with a representative of Hanson Surveying Co., Tucson. Phone 293-4108.

CJH WR 12/25/81: Visitors: Mike Maggiano and Mr. Lynn Hansen, Hansen Surveying Co., 1015 Prince Rd., Tucson, AZ Telephone 293-4108. Mr. Maggiano owns the Hobart claim (patented), Pearce District, Cochise County. This claim was part of the Black Diamond Mine. Mr. Maggiano believes that the Cordyne Corporation, 630 S.W. Park Ave., Portland, Oregon 97205. Telephone (503) 241-2963, is illegally operating on his claim. He hired Mr. Hansen to resurvey the Hobart claim to see if this is true. The survey will be made December 22 with Mr. Maggiano accompanying the crew.

MG WR 4/2/82: Visited the Cordyne Corp (CEMA) mill in Pearce and talked to Mr. Harold Maxwell. The company office in Pearce is being maintained on a limited basis. Telephone at the mill is 826-3276. The Black Diamond mine is on standby.

MG WR 5/6/83: Visited the Black Diamond mine, Cochise County. This property is now inactive; apparently the Cordyne Corp. has removed all of its equipment. The Cordyne office building at Sunsites is vacant and for sale.

BLACK DIAMOND MINE

COCHISE COUNTY

Mine visit to the Black Diamond Mine - found jeep tracks but no one on property. It was reported that some company had purchased the mine and were doing some work. GWI WR 4-8-67

Had a field interview with Mrs. Gladis McLeod, Postmaster at Pearce, regarding the Black Diamond Mine, owned by her four nephews. GWI WR 7-8-67

The Black Diamond Mine near Middle march Pass in the Dragoon Mountains belongs to an estate. The one in charge is Charles Phillips, 530 East 26th Place, Yuma, Arizona. His brother, J. H. Phillips of 2234 East Cambridge, Phoenix 266-9529, may be able to tell the status of the property. GWI Note 7-10-67

CJH/WR 7/12/79 - Fred Murphy will be operating the Black Diamond Mine, Cochise Co., Lease option with Charles Phillips and family, they live in Yuma. Cu, Au, Ag, Zn (?) will start Wednesday, July 18, 1979, wants mine file copied and mailed. 8/14/79 a.p.

MG WR 4/2/80: Linda Slater, geologist, CORDYNE Corp., called for information on new mining operations. She reports that although the mill has been working, the Black Diamond Mine (Cochise County) is not producing now; development drilling is being done.

Slater reports that Jerry Breen is gone and a Mr. Jack Stillwell is the office manager. His address is CEMA, P.O. Box 221, 109 Frontage Road, Pearce, Arizona 85025. The main CORDYNE address is: 630 SW Park Ave., Portland, Oregon 97205.

~~GWI WR 4/21/80: Glen Van Wye regarding the Walker and Black Diamond in Santa Cruz County (office call).~~

MG WR 8/8/80: Report was received that drilling is still being done at the Black Diamond Mine in Cochise County.

MG WR 1/23/81: Talked to Harold Maxwell of the Cordyne Corporation of Arizona (CEMA) in Pearce, phone 826-3275. He reports company has a discovery of Au-Ag deposit (no name yet) south of Pearce (Cochise Co.). Deposit will be mined by open-pit hopefully in February. Company is waiting on 150 TPD ball mill. After this operation gets moving, mining underground will begin at the Black Diamond (Cochise Co.).

*Do not
Reproduce*



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

1. Information from: Jerry M. Breen
Address: Cordyne Corp. of Arizona, P.O. Box 221, Pearce, Arizona 85625
2. Mine: BLACK DIAMOND 3. No. of Claims - Patented _____
Unpatented _____
4. Location: Cochise County
5. Sec _____ Tp _____ Range _____ 6. Mining District _____
7. Owner: Charles Phillips
8. Address: Yuma, Arizona
9. Operating Co.: Cordyne Corp. of Arizona
10. Address: P.O. Box 221, Pearce, Arizona 85625
11. President: _____ 12. Gen. Mgr.: _____
13. Principal Metals: Cu, Ag, Zn 14. No. Employed: _____
15. Mill, Type & Capacity: _____
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
(d) Production ☐ (e) Rate _____ tpd.
17. New Work Planned: Having a mine evaluation report done by Jim Loghry (?)
of Tucson. Re-starting drilling program to block out new ore. Looking
for a crusher to install at the mill.
18. Misc. Notes: Bonite is reported as one of the principal copper
minerals.
Mr. Breen did not want me to see the mine because of
"liability" considerations.
Hope to produce 100 tpd.

Date: January 17, 1980

(Signature)

Michael N. Greeley

(Field Engineer) mw

Innova

Leadership in Technology Transfer Worldwide

Black Diamond
mine (file) *ejt*
ab

February 15, 1980

Mr. James D. Loghry
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719

Dear Jim:

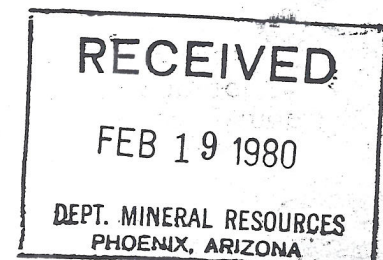
Authorized by Cordyne Corporation to do so, I request you to prepare a written proposal for the examination of their property in The Pearce Mining District, Cochise County, Arizona in order to determine its economic potential, including the extent and quality of ore reserves and the feasibility of extracting those reserves profitably. As we discussed on the phone, please indicate in your proposal any personnel, equipment and facilities that might best be provided directly by Cordyne for assisting your work.

In addition to your visit to the project site, your examination of the baseline report already provided, and the copy of the Bureau of Mineral Resources file that will be made available to you, you may contact the other consultants who are familiar with the project. They are:

Raynor O. Armstrong
Research Engineer
ANACONDA Copper Company
Metallurgical Research Department
P.O. Box 27007
Tucson, Arizona 85726
889-5361

Barbara Krebs
Research Engineer
ANACONDA Copper Company
Metallurgical Research Department
P.O. Box 27007
Tucson, Arizona 85726
889-5361

Srinivasan Raghavan
Assistant Professor
Department of Metallurgical Engineering
University of Arizona
Tucson, Arizona 85721
626-3794 (1361)



cc. Tucson Office

Mr. James D. Phry
February 15, 19

Page 2

George Roseveare
Metallurgical Consultant
2526 E. Blackridge
Tucson, Arizona 85716
325-5990


You should also contact Stanley Keith of the Geological Survey, Bureau of Geology and Mineral Technology, 845 N. Park, Tucson, Arizona, telephone 626-2733. He has not been briefed by me on Cordyne's interest and work in The Black Diamond Mine, John Guilbert identified him as perhaps the person most knowledgeable about the structures and processes in that region.

Another person you should contact is Dave Rabb, metallurgist for the Bureau of Geology and Mineral Technology, University of Arizona Geosciences Building, Tucson, telephone 626-1943. He can provide quite a bit of assistance to us at little or no cost in preparing and examining metallurgical sections and in preparing bulk samples (up to 500 lbs.) for chemical and metallurgical evaluation. They can crush, and grind and split to any degree desired and will preserve subsamples in their archives if requested.

I might add at this point that, to the extent possible and consistent with the timely and efficient completion of work, we want to involve faculty and students of the University of Arizona in the geological and metallurgical work done for Cordyne Corporation. If you wish, you may discuss this further with John Guilbert, Gordon Geiger (Metallurgy, 626-1361) and Bill Dresher (College of Mines and Bureau of Geology and Mineral Technology, 626-1401). The basic idea is that we should benefit from tutored manpower, they should benefit from the experience. The basic problem is scheduling; can they work when we need it?

We will look forward to receiving your written proposal within the next two weeks.

Sincerely yours,


Gary B. Lewis
Vice President

GBL/mkr

cc: Rudy Loeffler, Los Angeles
Gary Jordan, Portland
J.E. Stilwill, Pearce
Ray Armstrong, Tucson
Bill Dresher, Tucson
Gordon Geiger, Tucson
John Guilbert, Tucson

John Jett, Phoenix ✓
Stanley Keith, Tucson
Barb Krebs, Tucson
Dave Rabb, Tucson
S. Raghavan, Tucson
George Roseveare, Tucson

DEPARTMENT OF MINERAL RESOURCES

**STATE OF ARIZONA
FIELD ENGINEERS REPORT**

Mine BLACK DIAMOND Date December 13, 1979
District Pearce (Cochise County) Engineer John H. Jett
Subject: Cordyne Corporation - Purchase or Lease of Black Diamond Mine.

Cordyne Corporation, corporate office believed to be in Los Angeles, has purchased or leased the Black Diamond Mine near Pearce, Arizona. The Murphy brothers are no longer associated with the mine.

✓ Cordyne Corporation is setting up office in Sun Sites (mailing address: Box 221, Pearce, Arizona 85625). They are erecting a small assay office with the general office. Mr. Jerry Beman is manager, Elmer Cook is mill superintendent and a Noxey DeLesi (sp) is the geologist. The mine is drilling and blasting. Ore is being stockpiled with about 2000 tons already stored. Entrance is through the adit and mining takes place on the upper level. An interior shaft is being dewatered. Numerous assays are being run at Rochin Assay Office in Douglas, Arizona.

The mill is being erected and integrated into the old Commonwealth Mill. Equipment and flow sheets include jaw crusher to cone crusher to Hirsch Bros ball mill to rake classifier to two flotation sections (one 6 one 8 cell) to thickeners to Eimco disc filter to transportation. Zinc and copper concentrates will be produced. The precious metals are supposed to come out with the sulphides.

Anticipated production is 150 TPD to start.

Mr. Cook, the mill manager, formerly worked for Knob Hill Mines at Republic, Washington, a successful gold producer for many years.

The operation appears well funded. Successful operation is yet to be proven.

JHJ:mw

cc: DMR Tucson

Information from MINE INSPECTOR'S OFFICE - August 15, 1957

Cochise Co.

BLACK DIAMOND MINE, Pearce, Arizona (5 miles SW). Turquoise Dist. 12-19-56

Charles Phillips - Owner, Yuma, Ariz.

3 Claims

Operator - Sam Western) & (G. Perverill, Lessee (Both of Dragoon, Ariz.)
Supt.) (Agent

COPPER - SILVER - Bi, Development - for Room & Pillar - 3 men

L.A.S.

Phoenix, Arizona,
1325 W. Latham St.
June 21, 1940

Bureau of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

I enclose, in duplicate, a report on the Black Diamond Mines, as made by Fred A. Mattox, in 1936, and samples of ore taken from various places on the Black Diamond property. Mattox and Mattox were leasing this property at the time, and practically nothing has been done since they left in that the property was tied up under bond and lease and the leasee did nothing but hold the property.

I am sending this report in duplicate as you may have occasion to use the extra copy.

Please file this with my report on the Black Diamond Mines sent you some little time ago.

Thank you for your interest in the matter. I hope that I may eventually complete the report on the Black Diamond.

Sincerely yours,

HOWARD BOULTER

sent
7-10-40
I answered an add DC-2 in Pay Dirt some time ago. If they are still interested they might be sent this extra copy.

HB

MINE OWNERS REPORT

Black Diamond Mine

Turquoise Mining District, Cochise County

Brief History (continued from Page 1)

\$99,000.00 invested in smelter and tramway and shortage of water compelled putting in pumping plant and pipe line from Pearce, distance of 8 miles, raising water 800 feet into a 350,000 gallon tank. \$30,000.00 invested in buildings and equipment. In 1905 average of 100 men working in mine and 50 men at smelter. Balance sheet for April 1, 1907 shows the following:

Profit & Loss	\$ 158,018.54	Matte Sales	\$216,177.16
Pearce Mercantile Co.	448.63	Syndicate	16,600.00
First Nat'l. Bank Tombstone	499.11	Bond Sales	55,602.50
Machinery & Buildings	30,197.59		
Smelter & Tramway	99,076.89		
E. D. Kennedy	38.90		

Special Problems, Reports Filed

Hand books carry some information. No reports available.

Remarks

A few thousand dollars wisely and economically spent should put property in shape for profitable operations, whether by milling or smelting or shipping. If the ores are shipped operator ##### should own own trucks and mine economically. Road from mine to railroad shipping point, Cochise, all down grade with good base, mine to Pearce, and highway Pearce to Cochise, distance about 23 miles from mine. Shaft at entrance to Baggs tunnel, depth 293 feet; about half filled with water. Old claims say in good ore several places on way down and at bottom. A small mill should work satisfactorily. Could be handled by experienced leasers with some capital. Mine is equipped with air pipe, mine rail and cars.

REPORT ON BLACK DIAMOND MINE

December 15 1936

The group of mining claims, known as the Black Diamond mines, consists of three patented claims and ~~six~~^{four} unpatented mining claims, and is located in the Dragoon mountains, Turquoise Mining district, Cochise County, State of Arizona. Additional contiguous claims are available to the original number of twenty one, but the strike of the vein is fully covered by the present holdings, and the acquisition of additional claims is not recommended. Because of the formation of the ore bearing bodies (which will be described later) future mining operations should fall within the present bounds of the property.

The formation consists of stratified beds of the Paleozoic era, traversed by igneous dikes which are parallel to the bedding. The strike of the ledges follow a north-west-southeast course, North 60 west by magnetic needle. The hanging wall is formed by a large porphyry dike, and the footwall is quartzite. The ore bearing ledge is a true fissure vein imbedded in blue limestone of great width. In this connection I would like to quote from a paper: "All the important Arizona deposits seem to be true fissure veins in the sense that they are bodies or masses of ore deposited in the rocks that now contain them subsequent to the deposition or formation ~~xxxformation~~ of these rocks". And, "The productiveness and permanency of most of the Arizona copper districts seem to stand in close relation to the thickness of the ore bearing limestone".

The outcroppings extend along the claims for nearly 5,000 feet. They stand out bodily and are, in places, 30 ft in height and 100 ft in width in some places.

Present development consists of four tunnels connected by winzes and chutes to facilitate the handling of the ore, and several shafts. The ore occurs as contact deposits between the limestone and porphyry. The orebodies succeed one another along the strike of the vein, and underlie one another so that the dip is almost vertical. Several stopes have been mined in the upper workings. Two of the larger ore bodies have been stoped to the second level, and one has been stoped from the surface to the lower ~~xxx~~ tunnel, indicating the continuation of these bodies downward. (May I interpolate at this point that the Shattuck mine in Bisbee, in similar formation and in the plane of the same mineralized zone, has just announced the blocking out of extensive ore bodies at a depth of 2,600 ft?) As appreciation of the size of the ore bodies in the Black Diamond can be had only by seeing the extensive stoping that has been done in the mine as the work proceeded to lower levels. From the tunnels numerous drifts following contact, and crosscuts have been made, cutting decisive indications of further ore bodies which remain to be opened and developed.

One shaft has been sunk to a depth of 293 feet from the lower level. Verbal reports from former workers state that this shaft cut several ore bodies, and that drifting in ore had started in two directions at the depth of 293 feet. However, the records regarding this shaft have

been lost or removed, and as at present, the shaft is filled with water, I can make no definite statement regarding such reports. The shaft underlies extensive stoping in the upper levels and geologically the presence of the reported ore bodies is quite probable.

There is a large deposit of low grade carbonate ore on the surface as yet unmined, but in the present workings the ore is almost exclusively sulphide, the minerals being Bornite (Peacock copper) and Chalcopyrite, in a gangue of iron and silica. This ore is self-fluxing and is easily smelted and should bring a consideration in treatment rates if shipped to a custom smelter. As you well know, however, sulphide ores are most amenable to treatment by flotation. Furthermore, the minerals in this deposit break cleanly and hence a flotation treatment is to be recommended as it should be most successful. Water is available at the mine for all necessary purposes.

Present operations consist of marking out places in the drifts and cross-cuts and of preparatory mining in the continuation of two of the present stopes. Our assays show in the smaller of these 8.20% copper and 4.20 oz silver and in the larger 16.84% copper and 23.06 oz silver.

Due to the fact that we have been in possession of this mine but a short time, our own examination of it has not been complete. Therefore, some of the facts above given have been taken from the reports of the former resident engineer and some from the report on this mine in the Copper Hand Book for 1911. However, such examination as we have made confirms this information.

Fred A Mattox

(copy)

A S S A Y S

Black Diamond Mines.

(as made by Mattox and Mattox)

~~Black Diamond Mines~~

	Silver	Copper
	oz.	%
Fines around Bagge shute	7.44	3.25
Fines under loading shute	7.56	3.99
Course ore under Bagge shute	3.23	.89
Surface vein entrance Bagge Tunnel	1.64	2.76
First landing in Big Stope	3.78	4.44
Surface vein at entrance Bagge Tunnel	2.76	4.29
Pyrite seam in Bagge Tunnel	.16	.89
Picked sample from Peacock stope vein	15.64	10.16
Alamite with sulphides and green stain	14.32	5.12
Fines from old shute below Big Stope	4.80	1.05
Black Alamite in Big Stope. no green	1.00	.10
Copper vein side tunnel in Bag. near shaft	4.50	1.15
Shot down by Alve south of Dividend Tunnel	.74	.98
New front in drift of upper workings	3.60	4.14
Apex vein top of hill, surface	16.06	4.54
Apex Boulder with no green	3.12	1.95
Apex first class with green and quartz	15.92	6.20
Apex general without any green	2.90	1.42
At head of ladder up from the Peacock stope	4.24	1.95
Rock from deep shaft at entrance Bagge Tunnel	.96	.49
Peackce stope general across entire vein	5.84	2.54
Queen drift, high grade pyrites	6.05	12.30
Queen drift front	19.88	9.27
Picked from Queen dump	13.90	6.73
Soft cave down near top Queen workings		2.54
Under arch hill top vein " "		9.64
Queen open workings at surface		6.03
Fines from Bagge back of shute	5.50	2.48
Fines from smelter general upper dump	3.90	2.12
Fines from all dumps near top of hill	3.87 70	2.04
Fines from cemented shute in Bagge	6.00	1.85
Fines from slide upper workings surface	4.50	4.23
Picked, upper dump, sulphides	26.90	
Fines from upper dump, shipped	12.60	
General gransa from upper dump, shipped	7.50	1.40
Pillar, in Big Stope, Pascual	6.30	
3 places in surface vein above Glory Hole	6.50	6.08
Fines on dump near Glory Hole	4.90	
Fines under loading shute, down deep	6.00	2.76
Course gransa in Big Stope	11.80	3.60
Fines in Big Stope	10.76	3.55
Oxidize with green in Big Stope	12.22	7.89
Light gossan red and yellow Big Stope	3.46	.99
General of lump sulphides " "	40.35	6.50
Vein where drill is stuck " "	5.96	2.51
Various big boulders in Arroyo	8.90	3.52
White iron pyrites on dump in arroyo	7.60	.80
Fines dump Dividend Tunnel North of track E.E.	4.80	2.15
Extreme upper old workings, green alamite	8.90	1.55
" " " "		
Tool shaft	10.10	3.52
Pascuals last pile at mouth of B. shute	6.60	4.31
First loads of ore cleaned in upper tunnel	5.60	2.99
General from ore cleaned in arroyo	8.40	2.22
Surface vein at mouth of upper tunnel	3.00	1.68

Surface Glory Hole by Pascual in shute	5.70	1.64
North drift in Dividend tunnel virgin ground abt.	9.00	3.00
Honeycombe quartz and Malachite old workings edge of big iron dyke, N.E. of Apex vein	21.00	9.18

#####

Black Diamond, Adam Dodd, Pe... , Arizona

Copy of Mine Owners Report covering property listed with
the Department of Mineral Resources has been furnished to -

C.R.L.Grenshaw, 1945 Wellington Road, Los Angeles, Cal.

DEPARTMENT OF MINERAL RESOURCES

J. S. Coupal, Director

May 20, 1941

Mr. R. A. Murray
Congress, Arizona

Dear Mr. Murray:

I understand from Mrs. Ethel Boulter of Phoenix that you have under option the Black Diamond Mining Company located in the Turquoise Mining District.

We are gathering some information for national defense purposes on the potential copper production from Arizona's small and marginal mines and Mrs. Boulter suggests that you would be the one to fill out the report on this particular production. I am, therefore, sending you a copy of the questionnaire which we are sending around to potential producers and trust that you will let us have this information at an early date. It may prove very important to you.

Thanking you, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP
Enc.

Phoenix, Arizona,
1325 W. Latham St.,
July 22, 1940

Bureau of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

Gentlemen:-

Reference your letter of June 25 addressed to Mrs. Ethel Boulter, at the above address, and yours of June 26 addressed to Adam Dodd, Pearce, Arizona.

Mr. Dodd died March 27 and left his estate to my wife, Mrs. Ethel Boulter. The matter is still in probate in Cochise county but should be out soon.

I have combined the reports of Adam Dodd and mine, the former dated June 7, 1939 and the latter June 5, 1940. I believe that the report as now rendered covers the ground quite fully.

We have a large map of the mine, issued by J.A. Rockefeller in 1906 which is applicable to the mine today, with but few small exceptions, but it is a map drawn on heavy paper and not suitable for filing with this report even though we wished to so file it, which we don't; but we are working on a copy which will be presented when finished. It covers distances, elevations, etc. and is a true picture of the mine. Pending that time the small map enclosed will have to suffice, and if anyone wishes to examine the large map they can do so at the above address.

Neither my wife nor I know much about mining and we would like to see it active but to handle it properly the leaser should have some cash. There is ore there and lots of it and will be a mine some day, but it cannot be done on jawbone.

Thanks for your interest in the matter and hoping that through your good offices we may be able to dispose of it to our advantage as well as to the advantage of the prospector,

Yours truly,



HOWARD BOULTER

Phoenix, Arizona,
1325 W. Latham St.,
June 5, 1940

Bureau of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

Enclosed is a report on the Black Diamond Mines, in the Turquoise Mining District, Cochise County.

We have consulted those who are familiar with the mine and we believe that this is a conservative report on its possibilities.

The sale price given is that which the former owner, Adam Dodd, held on it. We consider it well worth that price.

We will be glad to consider any legitimate offer as to sale or lease to responsible parties.

Yours truly,

A handwritten signature in cursive script that reads "Howard Boulter". The signature is written in dark ink and is positioned above the printed name and title.

HOWARD BOULTER, for Owner,
Mrs. Ethel Boulter.

Phoenix, Arizona,
1325 W.Latham St.,
February 25, 1941

Mr.J.S.Coupal,
Bureau of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

Dear Sir:—

I am sending you under separate cover a couple blue prints of the workings at the Black Diamond mine in Cochise county.

I wish that you would have one copy filed with our report on this mine that you have in your files and the other is for your own inspection and use provided you would like to become more interested in the property.

Thank you for your interest in the matter and expressing a hope that the Black Diamond may become a producer within a reasonable time,

Yours truly,

HOWARD BOULTER

Phoenix, Arizona,
1325 W. Latham St.,
January 5, 1941

Mr. J. S. Coupal,
Director,
Arizona Department of Mineral Resources,
Phoenix, Arizona.

Dear Mr. Coupal:--

I note in the mining section of the Republic, from time to time, that you have been instrumental in getting old properties leased and put into circulation.

We have a property in Cochise county, near Pearce, called the Black Diamond. A report on this property is on file in your office. Not being much of a mining man myself, and having but fragmentary records upon which to work, the report may not be as thorough as it should be; but the property should be a producer. I feel sure, if handled by experienced men with the necessary capital.

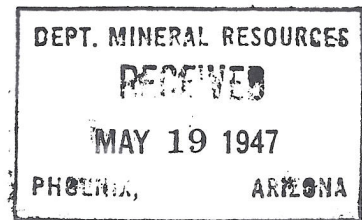
While you are doing such good work for the small mine owners we wish that you would devote some time to our property. We have a map of the workings, which are quite extensive, and should have copies of it available very soon.

We would appreciate it very much if through your good offices this property entered the field of producers. I am a member of the ASMOA, Pearce Council, for old times sake, living for some years at the above address.

Yours sincerely,


Howard Boulter.

Pearce Arizona
Box 31
May 19, 1947



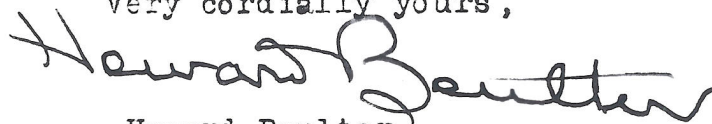
Department of Mineral Resources
State of Arizona
304 Home Builders Building
Phoenix Arizona

Att: Mr Roger I C Manning, Field Engineer.

Dear Mr Manning;-

In reply to your letter of the 14th inst I am enclosing the filled out form you sent and also add some pertinent information in the shape of various reports, etc. Also enclose a map of the workings. Would like to have the report as full and complete as possible that any one interested can get a good idea as to the mine before making the trip to see it. Have always tried, heretofore, to see a mine but am now trying to sell a prospect. The mine is of low grade and not so desirable in these times of high prices, so I am learning more and more and am going to try to sell a prospect, but a might good one. As many did in those days, they went off half cocked and built a smelter before learning the extent of their suitable ore. They started to develop by going down but it was too late and the mine is practically as they left it in 1908 with the exception of the lose ore being shipped from various parts of the property. I hope that the Bureau will be able to give us a helping hand because we are getting old and my wife is sick and we would be pleased to let some one have it who could get something out of it. We would meet anyone who meant good business more than half way. Hope that we may see some of you folks down this way soon and talk the matter over.

Very cordially yours,


Howard Boulter

24 January 1941

Mr. Howard Boulter,
1325 W. Latham Street,
Phoenix, Arizona.

My dear Mr. Boulter:

I thank you for your letter of January 5.

I shall be glad to call the BLACK DIAMOND
MINE in Cochise County, on which you have filed a mine
owners report, to the attention of anyone desiring
information on a property such as yours.

We are getting a number of calls for
properties, and I shall make every effort to be helpful
to you if the occasion arises.

With best wishes, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf

25 February 1941

Mr. Howard Boulter,
1325 West Latham Street,
Phoenix, Arizona.

My dear Mr. Boulter:

I thank you for your letter of February 25
and the two blue prints on the workings at the BLACK
DIAMOND MINE in Cochise County.

These blue prints have been attached to
mine owners report filed in this office.

With best wishes, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date June 5, 1940

1. Mine Black Diamond Mines
2. Mining District & County Turquoise, Cochise.
3. Former name Black Diamond Mining Co.
4. Location 8 miles from Pearce.
Secs. 28 and 29, T 18S R 24E.
(See map attached)
5. Owner Mrs. Ethel Boulter
6. Address (Owner) 1325 W. Latham St.
Phoenix, Arizona
7. Operator None
8. Address (Operator) None
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Silver and Copper
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present None
19. Operations Planned None
20. Number Claims, Title, etc. Patented claims--Procrastination, Black Diamond, and England.
Unpatented claims--Key claims, holding, Gracey, Hearne, Uncle Sam No 3, Scofield, Tom Cat, and Orphan. First four held account advantageous position, Tom Cat has spring water on it, and Orphan has remains of former smelter.
21. Description: Topography & Geography Elevation of main workings about 5500. Approx. high 7150 and low 520. Land rugged and steep. Claims located along ridge and east side of range. Terrain cut by several dry washes.
22. Mine Workings: Amt. & Condition See map attached that should be self-explanatory. Some additions have been made to these workings but this map will give one a good idea of the work done.

- In the center of this group of claims an iron dyke protrudes thru limestone for a distance of approx. 300 ft. in length by 50 ft. in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts, in well defined fissure vein and large deposits. Ore in veins is of shippable grade, while deposits are low grade and suitable for milling or smelting. They are self-fluxing and due to about 45% iron, smelting charges very low.
23. **Geology & Mineralization**
24. **Ore: Positive & Probable, Ore Dumps, Tailings** Numerous faces of ore inside mine, but very little or no ore blocked out. (It has been shipped or smelted.) There are several thousand tons low grade on old dumps.
- 24-A **Vein Width, Length, Value, etc.** Main ore body about the size of the iron deposit 300 x 50 ft. with fissure veins of good ore branching off in various directions thru the porphyry and limestone. There is also an upper and parallel iron dyke about 50 ft. from the lower and main one. The surface along this give ores 7 oz silver and 4% copper.
25. **Mine, Mill Equipment & Flow Sheet** Smelter was shut down about 1907 and it has been gradually scraped until very little left.
26. **Road Conditions, Route** Dirt road in good condition. Maximum grade 12%, smelter to mine. Passable year around. Low clearance cars can negotiate. State Highway 666 at Pearce. Bear to southwest out of Pearce, go around six miles hill and go straight ahead. Nearest railroad Cochise.
27. **Water Supply** Small gravity flow of water from lower, or Bagge tunnel. This is good pure water for all purposes. Volume can be increased by cleaning out. At extreme end of Bagge tunnel good seepage of water filters away but can be piped to surface. There is a 300 ft. winz and 40 ft. drift in Bagge tunnel full of water. Mine on the whole is a dry mine but enough water to operate proper sized mill. Quite a volume of water on Tom Cat but quite a distance to pipe.
28. **Brief History** Opened up in the 90's, sold to Black Diamond in 1898 and capitalized for \$2,000,000.00. Operated until 1907. Ran out of ore of sufficient value to smelt under conditions then prevailing. Obtained by Alan Dodd in 1932 thru labor lien. Leased occasionally but no development work done. Ore already mined sorted and shipped. To the present owner thru inheritance short time ago.
29. **Special Problems, Reports Filed**
30. **Remarks** A few thousand dollars wisely and economically spent should put property in shape for profitable operations whether by milling or smelting, or shipping. If the ores are shipped the operator must have his own trucks and mine economically. A small mill should work satisfactorily.
31. **If property for sale: Price, terms and address to negotiate.** Property for sale or lease. Terms Several houses on property, most of them into suit anyone with right intentions. major needs of repair. Lot of timber of all dimensions at old smelter. Mine fully equipped with track and six mine cars. Also thousand or more feet 2 inch iron pipe for air, already up. Ore bins OK.
 Signed: Howard Boulter (husband)
33. **Use additional sheets if necessary.**

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date June 7, 1939

Mine Black Diamond

District Turquoise, Cochise Co.

Location 9 mi. Westerly from Pearce

Former name Same (Incorporated 1898)

Owner Adam Dodd

Address

Operator Same

Address

President No corporation

Gen. Mgr.

Mine Supt. None

Mill Supt.

Principal Metals Copper, Gold, Silver

Men Employed

Production Rate (Old operation 200 tons)

Mill: Type & Cap.

Power: Amt. & Type None

Operations: Present Idle

Operations Planned Depend on financing. Property now under option and lease, but no work has been done and option will terminate July 1, 1939

Number Claims, Title, etc. 3 patented and 6 unpatented lode claims
No claims or indebtedness against property

Description: Topog. & Geog. On crest and slopes of east ridge of Dragoon Mountains.
On steep slope. Original operation had $1\frac{1}{2}$ mile aerial tramway from Bagge tunnel to shelter

Mine Workings: Amt. & Condition Opened mainly by tunnels. Two miles of underground workings. Greatest dept. below surface about 250 feet. Workings are open and for the most part accessible.

Geology & Mineralization Ores occur as contact veins between limestone and porphyry. Vein widths 100 ft. or more, ore shoots 1 ft. to 20 ft. in width. Surface ores are carbonates changing in depth to Bornite and Chalcopyrite averaging about 5% copper with good values in silver and a little gold.

Ore: Positive & Probable, Ore Dumps, Tailings All of the shipping grade ore in sight has been removed and faces will have to be advanced to open up more. Milling grade ore (\$12 per ton) in sight - much of it broken. Slag dump (10,000 tons) contains 1% copper.

Mine, Mill Equipment & Flow Sheet No equipment left on ground

Road Conditions, Route Reached from Pearce over natural road in fair condition to the smelter site 8 miles, maximum grade 5%. Rises about 500 feet Pearce to smelter site. Rises about 500 feet more between smelter site and tunnel mouth. Road easily maintained and now being put in good condition.

Water Supply Domestic water only. Water for original operation by pipe line from Commonwealth. Believed commercial water can be developed by churn drilling for \$2000.00.

Brief History See Copper Handbook 1903 for early history. Since original operation terminated, the property has been worked intermittently by leasers. Smelter was closed about 1907 and never reopened. Shut down due to drop in price of copper and not to lack of ore.

Special Problems, Reports Filed Hand Books carry some information. No reports available.

Remarks A practical and experienced mining man well acquainted with this property (*) states that the property is worthy of consideration. Could be handled by experienced leasers with a capital of \$10,000 or could be reopened as a regular mining operation for \$50,000.

If property for sale: Price, terms and address to negotiate. If present existing option is not exercised on July 1, 1939, the property will be for sale or lease and at attractive price and terms will be offered. Owner is 88 years of age and has no children to carry on.

Signed.....Adam Todd.....

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

Date June 3, 1940

1. Mine Black Diamond Mine
2. Location 12 miles from Pearce,
Secs. 20 & 29, T 14S R 24E.
(See map attached)
3. Mining District & County Turquoise, Coconino.
4. Former name Black Diamond Mining Co.
5. Owner Mrs. Ethel Boulter
6. Address (Owner) 1325 W. Latham St.
Phoenix, Arizona.
7. Operator None
8. Address (Operator) None
9. President, Owning Co. None
- 9A. President, Operating Co. None
10. Gen. Mgr. None
14. Principal Minerals Silver & Copper
11. Mine Supt. None
15. Production Rate None
12. Mill Supt. None
16. Mill: Type & Cap. None
13. Men Employed None
17. Power: Amt. & Type None
18. Operations: Present None
19. Operations: Planned None
20. Number Claims, Title, etc. Patented claims, Procrastination, Black Diamond, and
Earland. Unpatented claims, key claims, holding, Gracey, Hearne,
Uncle Sam No. 3, Scofield, Tom Cat, and Orphan. First four held
account advantageous position. Tom Cat has spring water on it, and
Orphan has remains of former smelter.
21. Description: Topography & Geography Elevation of main workings about 6500.
Approx. high 7150 and low 5200. Land rugged and steep. Claims located
along ridge and east side of range. Terrain cut by several dry washes.
22. Mine Workings: Amt. & Condition See map attached that should be self-explanatory.
Some additions have been made to these workings but this map will give
one a good idea of the work done.

23. **Geology & Mineralization** In the center of this group of claims an iron dyke protrudes thru limestone for a distance of approx. 300 ft. in length by 50 ft. in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts, in well defined fissure veins & large deposits. Ore in veins is of shippable grade, while deposits are low grade and suitable for milling or smelting. They are self-fluxing and due to about 45% iron, smelting charges very low.
24. **Ore: Positive & Probable, Ore Dumps, Tailings** Numerous faces of ore inside mine, but very little or no ore blocked out. It has been shipped or smelted. There are several thousand tons low grade on old dumps.
- 24A. **Dimensions and Value of Ore body** Main ore body about the size of the iron deposit 300 x 50 ft. with fissure veins of good ore branching off in various directions thru the porphyry and limestone. There is also an upper and parallel iron dyke about 50 ft from the lower and main one. The surface area of the iron deposit is about 100 x 50 ft.
25. **Mine, Mill Equipment & Flow-Sheet** Smelter was shut down about 1907 and it has been gradually scraped until very little left.
26. **Road Conditions, Route** Dirt road in good condition. Maximize grade 10% smelter to mine. Passable year around. Low clearance cars can negotiate. State Highway 666 at Pearce. Bear to southeast out of Pearce, go around six mile hill and go straight ahead. Nearest railroad Jerome.
27. **Water Supply** Small gravity flow of water from water, or Bagg tunnel. This is good pure water for all purposes. Volume can be increased by cleaning out. At extreme end of Bagg tunnel good seepage of water filters away but can be piped to surface. There is a 40 ft line and 40 ft drift in Bagg tunnel full of water. Mine on the hole is a very fine but enough water to operate proper sized mill. Quite a volume of water on Tom Cat but quite a distance to pipe.
28. **Brief History** Water on Tom Cat but quite a distance to pipe. Opened up in the 30's, sold to Block Diamond in 1933 and capitalized for \$2,000,000.00. Operated until 1907. Ran out of ore of sufficient value to smelt under conditions then prevailing. Obtained by Alex Dodd in 1938 thru labor loan. Leased occasionally but no development work done. Ore already mined sorted and shipped. To the present owner thru inheritance about time ago.
29. **Special Problems, Reports Filed**

30. **Remarks** A few thousand dollars wisely and economically spent would put property in shape for profitable operations whether of milling or smelting, or shipping. If the ores are shipped the operator must have his own trucks and mine economically. A small mill should work satisfactorily.

31. **If property for sale: Price, terms and address to negotiate.** Property for sale or lease. Terms to suit anyone with right intentions. Sale price not less than \$10,000.00. Address 1325 West Latnam St. Phoenix, Arizona.

32. Signature

Howard Boulter (Husband)

33. **Use additional sheets if necessary.**

Several houses on property, most of them in major needs of repair.

... of 300 feet in length by 50 feet in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts, in well defined fissure veins and large deposits. Ore in veins is of shipping grade, while deposits are low grade and suitable for milling or melting. They are self-fluxing and due to about 45% iron, smelting charges very low. Ore shoots 1 ft. to 20 ft. in width. Surface ores are carbonates changing with depth to bornite and chalcopyrite averaging 5% copper with good values in silver and some gold.

Positive & Probable, Ore Dumps, Tailings

Numerous faces of ore inside mine, but very little or no ore blocked out. There are several thousand tons of low grade ore (2½% copper, 6 oz. silver) on old dumps. (See list of assays attached taken from various parts of the mine by O. J. Mattox, who had lease on the property about 1937) Slag dump, 10,000 tons, contains 1½% copper and some silver. Milling grade ore in sight in mine, average \$12.00 per ton.

Dimensions and Value of Ore body

Main ore body about the size of the iron deposit, 300 x 50 ft. with fissure veins of good ore branching off in various directions through the porphyry and limestone. There is also an upper and parallel iron dyke about 50 feet from the lower and main one. The surface along this gave ores 7 oz. silver and 4½% copper.

Mine, Mill Equipment & Flow-Sheet

Smelter was shut down about 1905 and it has been scrapped and nothing left. While operating from 1903 to 1905 the mill shipped \$216,000.00 worth of matte.

Road Conditions, Route

Reached from Pearce over natural road in fair condition. Elevation at Pearce 4375 ft. at Orphan Claim, old smelter site 1½ miles from main tunnel, 5205 ft. at Bagge Tunnel (main tunnel) about 6500 ft. Low clearance cars can negotiate. Passable all year around. (See map attached)

Water Supply

Small gravity flow of water from lower or Bagge tunnel. Volume can be increased by cleaning out. This water can be used for all purposes. At extreme end of Bagge Tunnel good seepage of water filters away but can be piped to surface. There is a 300 foot winze and 40 foot drift in Bagge tunnel full of water. Claimed good ore encountered in this drift. Mine on the whole a dry mine but enough water to operate proper sized mill. Quite a volume of water on Tom Cat but a distance to pipe.

Brief History

See Copper Handbook for 1903 for early history. Incorporated in 1898 for \$2,000,000.00. Closed down in 1907 or 1908. Not much work done after 1905 with the closing of the smelter although still retained a good sized mine payroll. Since original operations terminated the property has been worked intermittently by leasers. Shut down of property apparently due to mismanagement. (See appended sheet for further details)

Special Problems, Reports Filed

(See appended sheet)

Remarks

(See appended sheet)

Property for sale: Price, terms and address to negotiate.

Property for sale or lease, on attractive terms. Address Mrs. Ethel Boulter, 1325 West Latham St., Phoenix, Arizona, for terms and inspection of the large mine map pending the time when a copy can be furnished with this report.

32. Signature. (Signed).....Howard Boulter.....(husband).....

See additional sheets if necessary.

MINE OWNER'S REPORT

Date July 22 , 1940

Mine Black Diamond

2. Location 8 Miles southwest of Pearce; Secs. 28 & 29, T18S R24E. (Cochise County)

Mining District & County Turquoise Mining Dist.

Former name Same (Incorporated in 1898)

Owner Mrs. Ethel Boulter

6. Address (Owner) 1325 West Latham St.
Phoenix, Arizona.

Operator Same

8. Address (Operator)

President, Owning Co. No Corporation no :

9A. President, Operating Co.

Gen. Mgr. None

14. Principal Minerals Copper, Silver, Gold

Mine Supt.

15. Production Rate Old operation 200 tons. None at present.

Mill Supt. 17

16. Mill: Type & Cap. None

Men Employed	None
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
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95	95
96	96
97	97
98	98
99	99
100	100

17. Power: Amt. & Type None

Operations: Present None

Operations: Planned None. Open for leasing or purchase.

Number Claims, Title, etc.	Three patented claims; Procrastination, Black Diamond, England. Six unpatented claims; Gracey, Hearne, Uncle Sam #3, Scofield, Tom Cat, and Orphan. No claims or indebtedness against property..(See attached plat.)
----------------------------	---

Description: Topography & Geography	On crest and slopes of east ridge of Dragoon Mountains. On steep slope. Elevation of mine about 6500 feet above sea level. Ground open. No precipitous canyons.
-------------------------------------	---

Mine Workings: Amt. & Condition See map attached. Some additions have been made to these workings but this map covers main features. Workings open and accessible. Dry mine. Large and complete map of mine workings in possession of owner. (See report on Black Diamond Mine, by Fred A. Mattox, attached)

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date May 19th, 1947

1. Mine: Black Diamond Copper Mining Company

2. Location: Sec. 19-20-28-29- Twp. 18 S Range 24 E Nearest Town Pearce

Distance 8 miles Direction SE Road Condition Fair; easily and
inexpensively put in shape

3. Mining District & County: Turquoise, Cochise

4. Former Name of Mine: Same

5. Owner: Ethel Boulter

Address: Box 31 Pearce Arizona

6. Operator: None

Address:

7. Principal Minerals: Copper; silver, gold

8. Number of Claims: 7 Lode 7 Placer -

Patented 3 Unpatented 4

9. Type of Surrounding Terrain Rugged and steep; elevation of main tunnel about 6200 feet; expanses broad and gradual; approx. high 7250 ft; low 5200 ft. claims located along ridge and east side of ridge; terrain cut by several washes; grade from Pearce (Highway US 666) to mine, approx 1800 ft.

10. Geology & Mineralization: In the center of this group of claims an iron dyke protrudes through limestone for a distance of approx 300 ft in length & 50 ft in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts in well defined fissure veins and large deposits. The ore encountered in the veins is of a shippable grade while the deposits are of low grade and suitable for milling or smelting. They are self-fluxing and about 40% iron content and 38% silicar (See report on mine by Fred A Mattox, also list of assays taken by O O Mattox both attached)

11. Dimension & Value of Ore Body: The main orebody can be said to be about the size of the iron deposit - 300 X 50 feet with fissure veins of good ore branching off in various directions thru the porphyry and limestone. There is also an upper and parallel iron dyke about 50 ft from the lower and main one. The surface along this gave ores, by some sorting, 7 oz silver, 4 % copper.

12. Ore "Blocked Out" or "In Sight": There are numerous faces of ore inside the mine but there is very little or no ore which can be said to be blocked out. However, Jonathan Gordon, metallurgist of Tombstone, in 1913, estimated 150,000 to 175,000 tons of ore in sight. (See excerpt of letter re this, attached). There are several thousand tons of low grade, but shippable ore, in the old dumps which can be sorted and shipped. From one of the large upper dumps ore can be cleaned to assay 6 oz silver, 3% copper. Slag dump at old smelter assays $\frac{1}{2}\%$ copper and couple oz silver.

Ore Probable: The probable orebody is below the present workings. Mr. Gordon before quoted, says there is a big mine there and that it should be diamond drilled. The mine was never developed by the original company when they put in their mill in 1902. Tom Saunderson, a hard rock miner of Tombstone, who was one of the first on the property in 1893 and one of the last to go in 1908, says that the shaft should be unwatered.

13. Mine Workings - Amount and Condition:

No.	Feet	Condition
and work continued there on the 300 where the original company left off. There is a large deposit of green copper ore at the mouth of the Bagge tunnel. 30 ft down in this shaft a drift was run and the green ore encountered assaying 3% copper. On the 300 three drifts were started, one of them under this green ore, but none of them did much good as the big shut down occurred at this time. This shaft at the mouth of the Bagge tunnel is 308 ft deep.		

14. Water Supply: There is a small gravity flow of water from the lower Bagge tunnel. This is good pure water for domestic purposes and the volume can be considerably increased. At the extreme end of the Bagge tunnel there is a good seepage of water which filters away, but could be piped out to the surface. Plant could be placed at Pearce where there is unlimited water in the Commonwealth. This would occasion an 8 mile haul for the ore.

15. Brief History

Opened in the 1890's for silver. Incorporated in 1895 for \$2,000.00 and smelter built in 1902 and put in operation in 1903 and ran about a year. During operation made and shipped to New York about \$220,000.00 but the San Juan mine, two miles from the Black Diamond on the other side of the range, its hauling to Tombstone, some 14 miles away, to their plant. The water level of this mine still undetermined, the shaft is 308 ft deep and a small bucket used several times a day disposed of all the water in this shaft while being sunk and while drifting from it. Sheriff's sale in 1913 to two of the bondholders and it underwent an intensive sales campaign for several years and no effort made to work it. Finally leasors allowed on the ground and they shipped the year 15,000 tons of ore mined and in the chutes and at the smelter. This consumed several years and various leasors. In the meantime the improvements on the property were being sold off and nothing remains. It was sold again at sheriff's sale to the watchman on a labor lease in 1932, and then by inheritance to the present owner.

16. Signature

Howard Boulter
Howard Boulter, (husband)

17. If Property for Sale, List Approximate Price and Terms: Approx sale price \$40,000.00 and terms to suit the contracting parties conforming to good business.

How long would it take, after financing has been provided for, before production on the above basis could be reached?

Does your organization have the facilities for raising the necessary capital to increase production to the amount stated?

If not, do you believe that your company would be amenable and agreeable to government financing?

Do you believe that you could finance the capital investment yourself on some such basis as a guarantee of sale of output at a fixed price and for a definite period, with damages to cover unamortized portion of capital investment in the event the government failed to take the output for the agreed upon time - or some similar arrangement?

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes.

The former owner died March 27, 1940 when the property came into the possession of Ethel Boulter. It was leased and some few carloads shipped to El Paso smelter during 1937. All records very incomplete. About 50,000 tons ore in sight averaging 2 1/2% copper 4 to 6 oz. silver.

What would be your ideas on financing and carrying out such a plan as is indicated by the above questions? R. A. Murray of Congress now has sixty days option on property and may develop if can perfect finances. Unable state necessary price required but presume should be around 16 cents.

Richer ore should be found at depth. Much ore has been mined over the years long gone by but to properly determine the mine's possibilities

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey and requirements would demand a check up by a competent engineer. We, of course, are perfectly agreeable to cooperate in every way with the government in the matter of production and would like to have the mine on a production basis.

Date May 17, 1941 Signed Howard Boulter for

How long would it take, after financing has been provided for, before production on Arizona Department of Mineral Resources, Capitol Building, Phoenix, Arizona

1946

QUESTIONNAIRE

Relating to survey of potential copper production from Arizona small and marginal mines for national defense purposes;

Name of mining property. Black Diamond Mining Company

Location. Turquoise Mining District, Cochise County, 9 miles S.W. Pearce

Ownership. Mrs. Ethel Boulter, 1325 W. Latham St. Phoenix.

Name of Manager. None

Post Office address. None

Copper production (pounds) during each of the past five years:

1936..... 1937..... 1938.....

1939..... 1940.....

1941 rate of copper production based upon first four months.....

How much copper could this property produce annually

on a 14 cent price?

on a 16 cent price?

on an 18 cent price?

on a 20 cent price?

What price copper is necessary for this property?cents per pound?

What plant facilities would be required and how much is the estimated cost in the

event a 14 cent price could be assured?

.....

a 16 cent price could be assured?

.....

18 cent price?

.....

20 cent price?

.....

For what length of time would assurance of price and sale of full production be ne-

cessary?

.....

.....

.....

ASSAYS

Black Diamond Mines.

(as made by Mattox and Mattox)

~~XXXXXXXXXXXXXXXXXXXX~~

	Silver	Copper
	oz.	%
Fines around Bagge shute	7.44	3.25
Fines under loading shute	7.56	3.99
Course ore under Bagge shute	3.23	.89
Surface coin entrance Bagge Tunnel	1.64	2.76
First landing in Big Stope	3.78	4.44
Surface vein at entrance Bagge Tunnel	2.76	4.29
Pyrite seam in Bagge Tunnel	.16	.89
Picked sample from Peacock stope vein	15.64	10.16
Alamite with sulphides and green stain	14.32	5.12
Fines from old shute below Big Stope	4.80	1.05
Black Alamite in Big Stope, no green	1.00	.10
Copper vein side tunnel in Bag. near shaft	4.50	1.15
Shot down by Alve south of Dividend Tunnel	.74	.98
New front in drift of upper workings	3.60	4.14
Apex vein top of hill, surface	16.06	4.54
Apex Boulder with no green	3.12	1.95
Apex first class with green and quartz	15.92	6.20
Apex general without any green	2.90	1.42
At head of ladder up from the Peacock stope	4.24	1.95
Rock from deep shaft at entrance Bagge Tunnel	.96	.49
Peacock stope general across entire vein	5.84	2.54
Queen drift, high grade pyrites	6.05	12.30
Queen drift front	19.88	9.27
Picked from "seen dump	13.90	6.73
Soft cave down near top "seen workings		2.54
Under arch hill top vein "		9.64
Queen open workings at surface		6.03
Fines from Bagge back of shute	5.50	2.48
Fines from smelter general upper dump	3.90	2.12
Fines from all dumps near top of hill	3.82 70	2.04
Fines from cemented shute in Bagge	6.00	1.85
Fines from slide upper workings surface	4.50	4.23
Picked, upper dump, sulphides	26.90	
Fines from upper dump, shipped	12.60	
General gransa from upper dump, shipped	7.50	1.40
Pillar, in Big Stope, Pascual	6.30	
3 places in surface vein above Glory Hole	6.50	6.08
Fines on dump near Glory Hole	4.90	
Fines under loading shute, down deep	6.00	2.76
Course gransa in Big Stope	11.80	3.60
Fines in Big Stope	10.76	3.55
Oxidize with green in Big Stope	12.22	7.89
Light gossan red and yellow Big Stope	3.46	.99
General of lump sulphides	40.35	6.50
Vein where drill is stuck	5.96	2.51
Various big boulders in Arroyo	8.90	3.52
White iron pyrites on dump in arroyo	7.60	.80
Fines dump Dividend Tunnel North of track N.E.	4.80	2.15
Extreme upper old workings, green alamite	8.90	1.55
Tool shaft	10.10	3.52
Pascuals last pile at mouth of B. shute	6.60	4.31
First loads of ore cleaned in upper tunnel	5.60	2.99
General from ore cleaned in arroyo	8.40	2.22
Surface vein at mouth of upper tunnel	3.00	1.68

Surface Glory Hole by Pascual in slate
North drift in Dividend tunnel virgin ground abt.
Honeycombe quartz and Malachite old workings edge
of big iron dyke, N.E. of Apex vein

5.70	1.64
9.00	3.00
21.00	9.18

Lordsburg, N M Jan 18, 1943

Mr Howard Boulter
1325 West Latham St
Phoenix Arizona

Dear Sir:-

I received your letter of Jan 14th inst forwarded to me from Duncan, Arizona. I am now zinc-lead mining near Lordsburg, N M.

It has been over thirty years since I was smelter Supt. for two years at the Black Diamond mine and for the third year I was there I was Manager of the mine and smelter. I am sorry but I have no report on the Black Diamond mine.

While smelter Supt. I smelted an average of 225 tons of ore per 24 hours. It was a good ore for fluxing purposes in the blast furnace. The average copper content of the ore was from four to five percent copper and \$2.50 to \$3.50 per ton gold and silver with the gold predominating. There were always ores being mined from some of the stopes that carried twice the above mentioned values. The ore bodies as a rule were wide, that is from 5 to 15 feet wide and cheaply mined.

On present prices of gold and copper the total value of the average ores we were smelting would be approximately \$18.00 per ton.

The mine was closed account of ore reserves being mined and development not carried on. More work was carried on in the mine after I left there but do not know what developed.

I have had a lot of copper experience with Phelps Dodge Corporation at their Nacosari and Bisbee copper mines and believe the formation at the Black Diamond mine favorable to developing more copper ore bodies with additional work by people that understand copper geology and formations.

Copper and gold being of much better prices than when I operated the Black Diamond property adds to its value in case of developing new ore bodies.

2-Mitchell

Yours truly

C W Mitchell✓

Box 908

(copy)

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

Date; July 22, 1940

Mine; Black Diamond

Location: 8 miles S.W. of Pearce; Secs. 28 & 29, T 18S R 24E

(See map attached)

Mining District & County; Turquoise, Cochise County.

Former Name; Same (Incorporated in 1898)

Owner; Mrs. Ethel Boulter.

Address; 1325 W. Latham St., Phoenix, Arizona.

Operator; Same.

Address; Same.

President, Owning Co.; No corporation

President, Operating Co.; None

General Manager; None

Mine Supt.; None

Mill Supt.; None

Men Employees; None

Principal Minerals; Copper, silver, gold.

Production Rate; Old operation 200 tons. None at present.

Mill, Type & Cap.; None

Power, Amount & Type; None

Operations, present; None.

Operations, planned; None. Open for leasing or purchase.

Number Claims, Title etc.; Three patented claims, Procrastination, Black Diamond, England, 6 unpatented claims, Gracey, Hearne, Uncle Sam #3, Scofield, Tom Cat, Orphan. No claims or indebtedness against property. (See plat attached)

Description, Topography & Geography: On crest and slopes of east ridge of Dragoon Mountains. On steep slope. Elevation of mine about 6500ft. Ground open. No precipitous canyons.

Mine Workings, Amt. & Condition: See map attached. Some additions have been made to these workings but this map covers main features. workings open and accessible. Dry mine. Large & complete map of mine workings in possession of owner. (See report on Black Diamond mines, by Fred A. Mattox, attached)

Geology & Mineralization: In the center of this group of claims an iron dyle protrudes for a distance of approx. 300ft in length by 50ft in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts, in well defined fissure veins and large deposits. Ore in veins is of shipping grade, while deposits are low grade and suitable for milling or smelting. They are self-fluxing and due to about 45% iron, smelting charges very low. Ore shoots 1ft to 20ft in width. Surface ores are carbonates changing with depth to Bismite and chalcopyrites averaging 5% copper with good values in silver and some gold.

2-Mine Owner's Report- Bureau of Mineral Resources.

Ore, Positive & Probable, Ore Dumps, Tailings: Numerous faces of ore inside mine, but very little, or no ore, blocked out. There are several thousand tons of low grade ore ($2\frac{1}{2}\%$ copper, 6 oz silver) on old dumps. (See list of assays attached, taken from various parts of the mine by O.G. Mattox, who had lease on the property about 1937). Slag dump, 10,000 tons, contains 1% copper and some silver. Milling grade ore in sight in mine, average \$12.00 per ton.

Dimensions & Value of Orebody: Main orebody about the size of the iron deposit, 300 x 50 ft. with fissure veins of good ore branching off in various directions through the porphyry and limestone. There is also an upper and parallel iron dyke about 50 ft from the lower and main one. The surface along this gave ores 7 oz silver and 4% copper.

Mine, Mill Equipment & Flowsheet: Smelter was shut down about 1905 and it has been scraped and nothing left. While operating, from 1903 to 1905 the mill shipped \$216,000.00 worth of matte.

Road Conditions, Route: Reached from Pearce over natural road in fair condition. Elevation at Pearce 4375 ft. at Orphan Claim, Old Smelter site, $1\frac{1}{2}$ miles from main tunnel, 5205 ft. at Bagge tunnel (main tunnel) about 6500 ft. Low clearance cars can negotiate. Passable year around. (See map attached).

Water Supply: Small gravity flow of water from lower, or Bagge, tunnel. Volume can be increased by cleaning out. This water can be used for all purposes. At extreme end of Bagge tunnel good seepage of water filters away but can be piped to surface. There is a 300 ft winz and 40 ft drift in Bagge tunnel full of water. Claimed good ore encountered in this drift. Mine on the whole a dry mine but enough water to operate proper sized mill. Quite a volume of water on Tom Cat but a distance to pipe.

Brief History: See Copper Handbook for 1903 for early history. Incorporated in 1898 for \$2,000,000.00. Closed down in 1907 or 8. Not much work done after 1905 with the closing of the smelter although still retained a good sized mine payroll. Since original operations terminated the property has been worked intermittently by leasers. Shut-down of property apparently due to mismanagement. \$99,000.00 invested in smelter and tramway and shortage of water compelled putting in pumping plant and pipe line from Pearce, distance of 8 miles, raising water 800 ft into a 350,000 gal. tank. \$30,000.00 invested in buildings and equipment. In 1905 average of 100 men working in mine and 50 men at smelter. Balance sheet for April 1, 1907 shows the following.

Profit and Loss	158,018.54	Matte Sales	\$216,177.16
Pearce Merc. Co.	448.63	Syndicate	16,500.00
First N. Bank, Tombstone	499.11	Bond Sales	55,602.50
Machinery & Buildings	30,197.59		
Smelter & Tram	99,076.89		
E.D. Kennedy	38.90		

3--Mine Owner's Report, Bureau of Mineral Resources.

Special Problems, Reports Filed; Hand books carry some information.
No reports available.

Remarks; A few thousand dollars wisely and economically spent should put property in shape for profitable operations, whether by milling, or smelting, or shipping. If the ores are shipped operator should own own trucks and mine economically. Road from mine to railroad shipping point, Cochise, all down grade with good base Mine to Pearce, and highway Pearce to Cochise, distance about 23 miles from mine. Shaft at entrance to Bagge tunnel, depth 293 ft, about half filled with water. Old claims say in good ore several places on way down and at bottom. A small mill should work satisfactorily. Could be handled by experienced leasers with some capital. Mine is equipped with air pipe, mine rail, and cars.

If Property For Sale, Price, Terms, and Address to Negotiate; Property for sale or lease, on attractive terms. Address Mrs. Ethel Boulter, 1325 West Latham Street, Phoenix, Arizona for terms and inspection of the large mine map pending the time when a copy can be furnished with this report.



HOWARD BOULTER (husband)

MINE OWNERS REPORT

Black Diamond Mine

Turquoise Mining District, Cochise County

Brief History (continued from Page 1)

\$99,000.00 invested in smelter and tramway and shortage of water compelled putting in pumping plant and pipe line from Pearce, distance of 8 miles, raising water 800 ft. into a 350,000 gallon tank. \$30,000.00 invested in buildings and equipment. In 1905 average of 100 men working in mine and 50 men at smelter. Balance sheet for April 1, 1907 shows the following:

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Special Problems, Reports Filed

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Remarks

A few thousand dollars wisely and economically spent should put property in shape for profitable operations, whether by milling or smelting or shipping. If the ores are shipped operator should own own trucks and mine economically, Road from mine to railroad shipping point, Cochise, all down grade with good base, mine to Pearce, and highway Pearce to Cochise, distance about 23 miles from mine. Shaft at entrance to Bagge tunnel, depth 293 feet, about half filled with water. Old claims say in good ore several places on way down and at bottom. A small mill should work satisfactorily. Could be handled by experienced leasers with some capital. Mine is equipped with air pipe, mine rail and cars.

Hilltop, Arizona, Via Rodeo, N.M.,
January 21, 1938.

Eagle-Picher Mining & Smelting Co.,
Tucson, Arizona.

Memo.
Black Diamond Mine, near
Pearce, Cochise County, Arizona.

Visited the Black Diamond mine, under lease to Mattox Brothers, near Pearce, Arizona, January 19th, and spent about 4 hours on the property, covering part of the surface and underground on the lower- and middle-tunnel levels.

Open stopes, from which large tonnages have been removed -- most of which I was told was smelted on the property -- show remnants of ore shoots, and a possibility of further large tonnages that can be developed. Ore very base and quite low grade. Complexity of ore indicates a tough mechanical separation of value minerals, and suggests smelting (matting) as most feasible process for concentration of gold, silver, copper values.

209.68 tons of ore shipped by lessees (selective mining) in past year (not the total shipped) gave average of:

Gold, 0.015 Ozs. per ton.
Silver 13.16 " " "
Lead, 0.005 %
Zinc, 3.09 %
Copper, 3.10%

Deposits occur in limestone near contact with porphyry. Veins heavily capped with hematite and magnetite, and show on surface up to 100-ft in width.

an - ag - pt - zn - cu -

I to-day mailed to Ruby three samples from the Black Diamond:

Tr - 23.2 - 0.30 - 14.1 - 8.88

- #1. Chip samples from highest grade ore being mined by lessees, -taken underground.
.02 - 17.6 - - - - 7.91
- #2. Pieces knocked off outcrop (oxidized) at several places.
.02 - 3.06 - 0.40 - 4.1 - 1.29 - 27.5 - 32.9 - 3.02
- #3. 30-lb sample of broken ore (probably about 200 tons) dumped out of ore bin at old 200-ton smelter (blast furnaces, one round and one rectangular). This sample should represent the "mine run" of ore being smelted during last campaign.

As it is reported the smelter shipped matte with about 65% copper content evidently one furnace was used for smelting to a low-grade matte probably (18% to 20% copper content) and the other for concentrating, further to the 65% copper matte.

I will write further after receipt of the assay results of samples, and further examination of the property if assay results are "favorable"

Yours truly,


F. H. Lerchen.

BLACK DIAMOND MINES
OF ARIZONA

P. O. BOX 4 PEARCE, ARIZONA

Dec. 29, 1937.

Mr. E. D. Morton,
73 North Court Street,
Tucson, Arizona.

Dear Mr. Morton:

There are a few things which have come to mind since my conversation with you last Monday: Am still in hopes that Mr. Lerchen will return soon and you will be able to get over to the Hilltop without much delay. There are plenty of beds and mattresses at Hilltop but if convenient bring some blankets or covering with you. In case it should turn cold you might need them. You need not bother about bringing anything to eat as my brother and his wife can take care of you in regards to "eats." I think your best route will be from Tucson to Benson and thence across to Cochise and Wilcox and on to San Simon. From Cochise to Pearce ~~is~~ is 17 miles and from Pearce to the Black Diamond mines it is about six miles over a good road. If you could spare the time you might make this side trip on your way over and spend an hour or two here in taking a general view of this property and then I can go with you to Hilltop. If these suggestions meet with your convenience please advise me at my Pearce address.

I have heard nothing further from the Hilltop Company and will probably not write to them until after the first of the year. The holiday season is a very good excuse for slow action but I presume they will be urging us for prompt action as soon as this is over.

I want to be in Douglas between the 6th and 8th of the month if possible and may have to go to El Paso for a few days from there.

There was a party here yesterday who had been at Hilltop the day before and reported that the snow had all melted and the road was in good condition. There is no snow whatever in the Dragoon mountains around the Black Diamond and if we have no storms in the meantime traveling should be comfortable.

You may have written to me to Douglas and if so will be forwarded by my son is resides there.

Best wishes for Happy New year.

Respectfully Yours.

O O Mattox

O. O. Mattox,
P. O. Box 4,
Pearce, Ariz.

ASSAYS
BLACK DIAMOND MINES

	Ozs. Silver	% copper
Fines from upper piles smelter,		2.17
Gen. sample 3 truck loads lower dump at smelter		2.86
Fines around Bagge schute.....	7.44	3.25
Fines under loading schute,	7.56	3.99
Course ore under Bagge schute,	3.23	.89
Surface vein entrance Bagge Tunnel,	1.64	2.76
First Landin in Big Stope,	3.78	4.44
Surface vein at entrance Bagge Tunnel	2.76	4.29
Pyrite seam in Bagge Tunnel,16	.69
Picked sample from Peacock stope vein,	14.32	5.12
Fines from old shoot below big stope,	4.8	1.05
Black Alemita in Big Stope, no green,	1.0	.10
Copper vein side tunnel in Bag. near shaft,	4.5	1.15
Shot down by Alve south of dividend tunnel,74	.98
Apex Vein top of hill, surface,	16.06	4.54
New front in drift of upper workings,	3.60	4.14
Apex Boulder with no green,	3.12	1.95
Apex first class with green and quartz,	15.92	6.20
Apex general without any green,	2.90	1.42
At head o ladder up from the Peacock st.....	4.24	1.95
Rock from deep shaft at end. Bagge Tunnel,96	.49
Peacock stope general across entire vein,	5.84	2.54
Queen Drift, high grade pyrites,	6.05	12.30
Queen Drift front,	19.88	9.27
Picked from Queen Dump.....	13.90	6.73
Soft cave down near top Queen workings.....		2.54
Under arch hill top vein, " ".....		9.64
Queen open working at surface,		6.03
Fines from Bagge back of schute,	5.5	2.48
Fines from smelter general upper dump,	3.9	2.12
Fines from all dumps near top of Hill,	3.7	2.04
Fines from cemented schute in Bagge,	6.9	1.85
Fines from slide upper workings, surface,	4.5	4.23
Picked, upper dump, sulphides,	26.9	
Fines from upper dump, shipped,	12.6	
General gransa from upper dump, shipped,	7.5	1.40
Pillar in Big Stope, Pascual,	6.3	
3 places in surface vein above Glory Hole,	6.5	6.08
Fines on dump near Glory Hole	4.9	
Fines under loading schute, down deep,	6.0	2.76
Course gransa in Big Stope,	11.8	3.6
Fines in Big Stope,	10.76	3.55
Oxidize with green in Big Stope,	12.22	7.89
Light gossan red and yellow Big Stope,	3.46	.99
General where dump sulphides,	40.35	6.5
	5.96	2.51
Various big boulders in arroyo,	8.9	3.52

ASSAYS
BLACK DIAMOND MINES

	ozs	%
	Silver	Copper
White iron pyrites on dump in arroyo	7.6	.80
Finest dump dividend T. north of track E.E.	4.8	2.14
Extreme upper old workings, green Alamite	8.9	1.55
" " " " tool shaft,	10.1	3.52
Pascuals last pile at mouth of B. Schute	6.6	4.31
First loads of ore cleaned in upper tun.	5.6	2.99
General from ore cleaned in Arroyo	8.4	2.22
Surface vein at mouth of upper tunnel	3.0	1.68
Surface Glory Hole by Pascula in schute,	5.7	1.64
North drift in Div. T. virgin ground abt.	6.00	3.00
Honeycombe quartz and Malachite old workings		
edge of big iron dyke, N.E. of apex vein,	21.	9.18
Brown, iron dirt above pile shipped from		
dump of upper tunnel	5.4	.12
Fines and gransa shipped from dump upper tunnel	8.0	1.73

Loose ores in Mine and on Dumps:

	Gold	Silver	Copper	App. Ton.
Fines around Bagge schute	.02	7.44	3.25	500
Fines under Loading Schute	.01	6.	3.2	30
Fines of loose ore in big stope	.01	5.	3.55	50
Fines at old smelter dump	.01	4.3	2.55	100
Course at " " "	.01	3.8	2.75	200
Fines cemented shute	.02	7.4	3.72	200
Fines from all dumps mine	.01	3.7	2.04	2000
Big boulders in arroyo	.01	8.9	3.52	500
Surface ores Glory Hole	.01	5.7	1.64	5000
Can be sorted from dumps	.01	5.	2.50	10000

There is an abundance of ore in sight in the various interior workings which can only be accurately estimated by a careful survey and expert calculation.

This property can easily be developed to produce from 50 to 100 tons of good milling ore per day.

Assays by Fred Mattox.

Blanchard ASSAYER.

Black Diamond Mine

	Oz silver	% copper
Fines around Bagge chute	7.44	3.25
Fines under loading chute	7.56	3.99
Coarse ore under Bagge chute	3.23	.89
Surface vein entrance Bagge tunnel	1.64	2.76
First landing in big stope	3.78	4.44
Surface vein entrance Bagge tunnel	2.76	4.29
Pyrite seam in Bagge tunnel	.16	.69
Picked sample from Peacock stope vein	15.64	10.16
Alamite with sulphides and green stain	14.32	5.12
Fines from old chute below big stope	4.80	1.05
Black alamite in big stope, no green	1.00	.10
Copper vein side tunnel in Bagge near shaft	4.05	1.15
Shot down by Alve south of Dividend tunnel	.74	.98
New front in drift of upper workings	3.60	4.14
Apex vein, top of hill, surface	16.06	4.54
Apex boulder with no green	3.12	1.95
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Queen open workings at surface	"	6.03
Fines from Bagge back of chute	5.50	2.48
Fines from smelter general upper dump	3.90	2.12
Fines from all dumps near top of hill	3.70	2.04
Fines from cemented chute in Bagge	6.00	1.85
Fines from slide upper workings surface	4.50	4.23
Picked, upper dump, sulphides	26.90	
Fine from upper dump, shipped	12.60	
General gansa from upper dump, shipped	7.50	1.40
Pillar in big stope Pascual	6.03	
3 places in surface vein above Glory hole	6.55	6.08
Fines on dump near Glory hole	4.90	
Fines under loading chute, down deep	6.00	2.76
Course gansa in big stope	11.80	3.60
Fines in Big stope	10.76	3.55
Oxidize with green in Big stope	12.22	7.89
Light gossan red and yellow Big stope	3.46	.99
General of lump sulphides " "	40.35	6.50
Vein where drill is stuck " "	5.96	2.51
Various big boulders in arroyo	8.90	3.52
White iron pyrites on dump in arroyo	7.60	.80
Fines dump Dividend tunnel north of track EE	4.80	2.15
Extreme upper old workings, green alamite	8.90	1.55
" " " " " tool shaft	10.16	3.52
Pascuals last pile at mouth of Bagge chute	6.60	4.31

REPORT ON BLACK DIAMOND MINES

December 15, 1936

The group of mining claims, known as the Black Diamond Mines, consists of three patented mining claims and six unpatented mining claims, and is located in the Dragoon Mountains, Turquoise Mining District, Cochise County, State of Arizona. Additional contiguous claims are available to the original number of twenty one, but the strike of the vein is fully covered by the present holdings, and the acquisition of additional claims is not recommended. Because of the formation of the ore bearing bodies (which will be described later) future mine operations should fall within the present bounds of the property.

The formation consists of stratified beds of the Palmozodic era, traversed by igneous dykes which are parallel to the bedding. The strike of the ledges follows a northwest-southeast course, North 60 west by magnetic needle. The hanging wall is formed by a large porphyry dyke, and the footwall is quartzite. The ore bearing ledge is a true fissure vein imbedded in blue limestone of great width. In this connection I would like to quote from a paper, "All the important Arizona deposits seem to be true fissure veins, in the sense that they are bodies or masses of ore deposited in the rocks that now contain them subsequent to the deposition or formation of these rocks". And, "The productiveness and permanency of most of the Arizona copper districts seem to stand in close relation to the thickness of the ore bearing limestone".

The outcroppings extend along the claims ~~nearly~~ for nearly 5,000 ft. They stand out bodily and are, in places, 30 ft in height and 100 ft in width on the surface. The vein has a heavy gossan capping 150 ft wide in some places.

Present development consists of four tunnels, connected by winzes and chutes to facilitate handling of the ore, and several shafts. The ore occurs as contact deposits between the limestone and porphyry. The ore bodies succeed one another along the strike of the vein, and underly one another so that the dip is almost vertical. Several stopes have been mined in the upper workings. Two of the larger ore bodies have been stoped to the second level, and one has been stoped from the surface to the lower level, indicating the continuation of these bodies downward. (May I interpolate at this point that the Shattuck mine in Bisbee, in similar formation and in the plane of the same mineralized zone, has just announced the blocking out of extensive ore bodies at a depth of 2600 feet?) An appreciation of the size of the ore bodies in the Black Diamond can be had only by seeing the extensive stoping that has been done in the mine as the work proceeded to lower levels. From the tunnels, numerous drifts following contact, and crosscuts have been made, cutting decisive indications of further ore bodies which remain to be opened and developed.

One shaft has been sunk to a depth of 293 feet from the lower tunnel. Verbal reports from former workers state that this shaft cut several ore bodies, and that drifting in ore had started in two directions at the depth of 293 feet. However, the records regarding this shaft have been lost or removed, and, as the shaft at present is filled with water, I can make no definite statement regarding such reports. The shaft underlies extensive stoping in the upper levels, and geologically the presence of the reported ore bodies is quite probable.

There is a large deposit of low grade carbonate ore on the surface as yet unmined, but in the present workings the ore is almost exclusively sulphide

the minerals being Bornite (Peacock copper) and Chalcopyrite, in a gangue of iron and silica. This ore is self fluxing, is easily smelted, and should bring a consideration in treatment rates if shipped to a custom smelter. As you will know, however, sulphide ores are most amenable to treatment by flotation. Furthermore, the minerals in this deposit break cleanly, and hence a flotation treatment is to be recommended as it should be most successful. Water is available at the mine for all necessary purposes.

Present operations consist of marking out places in the drifts and crosscuts, and of preparatory mining in the continuation of the present stopes. Our assays show in the smaller of these 8.20% copper and 4.20 oz. silver, and in the larger 16.84% copper and 23.06 oz. silver.

Due to the fact that we have been in possession of this mine but a short time, our own examination of it has not been complete. Therefore, some of the facts above given have been taken from the reports of the former resident engineer, and some from the report on this mine in the Copper Handbook of 1911. However, such examination as we have made confirms this information.

#

As made by
Fred A. Mattox,
Hilltop, Arizona.

(THIS IS A COPY OF SUCH REPORT)

2-assays

First loads of ore cleaned in upper tunnel	5.60	2.99
General from ore cleaned in arroyo	8.40	2.22
Surface vein at mouth of upper tunnel	3.00	1.68
Surface Glory hole by Pascual in chute	5.70	1.64
North drift in Dividend tunnel virgin ground abt.	8.00	3.00
Heneycomb quartz and Malachite old workings edge of big dyke iron dyke NE of Apex vein	21.00	9.18

(copy)

assays taken by O O Mattox

November 11, 1913

... Mr Jonathan Gordon, a mining engineer living in Tombstone, Arizona, was here at Black Diamond on the 6th and 7th of this month; he asked me for permission to look over the property and desired that I should assist him. I granted the permission thinking that I might gain some additional information as I think this man has some considerable ability in his line, as he has the reputation of being a good metallurgist and mining engineer.

We spent a part of two days looking thru the Dividend and Bagge tunnels, carefully examining everything opening excepting of course the winzes, also taking measurements of ore in the Dividend Tunnel and bringing out samples for inspection.

After he made some calculations on the measurements taken of the ore, I asked him for his opinion as to the tonnage of ore that he thought was in the mine; he stated that it was his opinion without making any assays that he thought 150,000 to 175,000 tons of ore that it would pay to smelt. He also told me that in justice to the property, that all the places where he found indications of ore as well as the ore we found ought to be sampled and classified

(The above is extract from letter dated November 11, 1913, to Hon. J.G. Hearne, President, Wheeling, West Virginia, from W H Wilking, Manager, Black Diamond Mine, Pearce, Arizona, Jonathan Gordon is still living in Tombstone, Arizona.)

1947

✓ BLACK DIAMOND COPPER MINING COMPANY - ARIZONA

Office; 99 John St New York. Mine office, Pearce, Cochise County, Ariz. Organized 1898 under the Laws of West Virginia with capitalization of \$2,000,000, shares \$5.00 per share par; E D Kennedy, President and General Manager; Dr T M Sabin, Secretary. Lands 35 claims area about 500 acres 6 miles from Pearce in the Dragoon mountains. Ores occur as contact veins between limestone and porphyry, with parallel dykes of sandstone and quartzite, having a heavy gossan capping in places 150' wide. Ores are almost exclusively sulphide, being mainly chalcopyrite and bornite, with iron and silica gangue, estimated to average better than 6 % copper 10 oz silver and \$1.40 gold per ton with 38% of silica. Property was opened originally for silver. Development is by 4 tunnels lowest 600' below crest of hill, tunnels being connected by winzes. Mine is connected with smelter by a 1½ mile Leschen aerial tramway having a drop of 800' with 600 tons daily capacity. Has a pumping plant with 4" pipeline installed at Pearce, this having capacity to raise 180,000 gallons daily against a head of 804' in 6 miles, with a 350,000 gallon storage reservoir at the mine. Property has a good steam equipment including two air compressors with 15 drill capacity, petroleum being used for fuel. Miscellaneous improvements include a 20 room hotel, store schoolhouse and a considerable number of dwellings. A 200 ton smelter built 1902 has a 44 x 120" Allis Chalmers rectangular water-jacket blast furnace, a 38" auxiliary cupola and a 24 x 36' circular roaster and made a matte carrying about 65% copper and 150 to 300 oz silver per ton with small gold values. Ores are self-fluxing and easily smelted and furnace is claimed to have shown slag losses of only 0.3% copper. Company apparently bankrupt and mine and smelter idle.

DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX 7, ARIZONA



December 22, 1961

Mr. W. B. Gordon
7018 Leader
Houston 36, Texas

Dear Mr. Gordon:

The Black Diamond Mine originally covered 45 or more claims but by 1940 3 patented and 4 unpatented claims were being held. The mine was operated during the early 1900s by the Black Diamond Mining Co. which built a smelter and did most of the development work. It ceased operations early in 1908. It is reported to have produced and sold copper matte valued at about \$220,000 by late 1907. During 1929 and 1930 A.Y. Smith et al of Pearce shipped a few thousand tons of ore to Douglas smelters for flux. The ore carried several ounces of silver, 3.5 percent copper and a little gold and bismuth. No notable production has been reported since. In 1957 the mine was owned by Charles Phillips, Yuma, Arizona and was leased to Sam Westman and G. Perrerrill of Dragoon. The Utah Construction Company of Salt Lake City, examined the iron gossans during 1959, but did not exercise their option.

The mine mainly lies in Sections 19-20, 28-30, T. 18 S., R. 24 E., Turquoise Mining District, Cochise Co. It is about 10 miles from Pearce and 25 miles from Cochise, the nearest railhead. The dirt road from Pearce has been used for many years, but now is rough. From Pearce to Cochise is along paved highway 666.

The mine was originally developed by four crosscut tunnels connected by chutes and winzes (or raises) and two 293 foot shafts. The shaft collars are at both ends of the lower or Bagge tunnel adit. Much stoping was done, but it failed to reach the Bagge tunnel in depth. Extensive exploration of the stope walls and other workings by the company revealed little ore laterally and the extension of the ore in depth was very questionable. Some few thousands of tons of low grade ore remain in dumps and as thin layers on stope walls.

The ore deposit is a typical contact-metamorphic type and is largely limited to the late Paleozoic limestones adjacent to at least two rhyolite porphyry dikes. The tactite or contact metamorphic zone occupies two parallel areas. The first, the lower one topographically, is 300 feet long and up to 50 feet wide. The second is about 50 feet higher. These zones contain nearly all

C
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Mr. W. B. Gorden

12-22-61

the commercial ore mined to date. The material that comprises these consists of iron (red hematite, limonite and specularite) copper carbonates (near the surface) bornite, chalcopyrite, bismuthinite, pyroxene, epidote, quartz, calcite, chlorite and some gold and silver. Some fissures extending out from these main contact zones contain limited values. The two main stope areas, about 500 feet apart, could be isolated by shatter zones which cross the main contact zone. The main zone strikes about N 60 degrees W. The iron content of these zones ranges from 25 to 45 percent. The ore smelted up to 1908, came from the stopes within these areas. The hangingwall of the contact zones is composed of rhyolite porphyry (as a dike) and the footwall is composed of limestone and quartzite. The veins and contact zone stand up 10-15 feet in strong relief because they contain considerable silica in excess of that contained within the wall rocks. Some indications of the contact zone has been intermittently traced for 5000 feet but thus far little of a commercial nature has been disclosed except in the two previously mentioned stope areas.

The property was sampled and otherwise tested by RFG engineers during 1943 and generally they felt that the mine had little chance of downward development and a loan was adversed. The samples taken from stope, drift and other faces ran 3-5 percent copper, with a proportion of silver and a little gold and zinc. Some scattered samples ran up to 9-10 percent copper while others ran as low as 0.88%. A composite showed 2.6 percent zinc and 28 percent iron. Other samples taken by A.Y. Smith indicated $1\frac{1}{2}$ to 2 ounces of silver per percent of copper. Mr. Smith stated that the ore at stope faces was erratic in grade. It is possible that other areas along the strike might be uncovered by lateral exploration. Samples of the iron range from 28 to 45 percent along with high silica.

Trusting that this may help, I remain

Very truly yours,

LEWIS A. SMITH
Field Engineer

LAS/H

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date July 22, 1940

1. Mine Black Diamond
2. Mining District & County Turquoise Mining Dist.
3. Former name Same (Incorporated in 1898)
4. Location 8 miles southwest of Pearce;
Secs. 28 and 29, T 18 S
R 24 E. Cochise County.
5. Owner Mrs. Ethel Boulter
6. Address (Owner) 1325 West Latham St.
Phoenix, Arizona
7. Operator Same
8. Address (Operator)
9. President No Corporation Now
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Copper, Silver, and Gold
14. Men Employed
15. Production Rate Old operation 200 tons. None
at present.
16. Mill: Type & Cap. None
17. Power: Amt. & Type None
18. Operations: Present None
19. Operations Planned None. Open for leasing or purchase.
20. Number Claims, Title, etc. Three patented claims; Procrastination, Black Diamond, England.
Six unpatented claims; Gracey, Hearne, Uncle Sam #3, Scofield,
Tom Cat, and Orphan. No claims or indebtedness against property.
(See attached plat)
21. Description: Topography & Geography On crest and slopes of east ridge of Dragoon Mountains.
On steep slope. Elevation of mine about 6500 feet
above sea level. Ground open. No precipitous canyons.
22. Mine Workings: Amt. & Condition See map attached. Some additions have been made to these
workings but this map covers main features. Workings
open and accessible. Dry mine. Large and complete map
of mine workings in possession of owner. (See report on
Black Diamond Mine, by Fred A. Mattox, attached)

- In the center of this group of claims an iron dyke protrudes for distance of 300 ft. in length, 50 ft. in width. There are also intrusions of porphyry. Ore occurs in the iron and between the contacts in well defined fissure veins and large deposits. Ore in veins is of shipping grade, while deposits are low grade and suitable for milling or smelting. They are self-fluxing and due to ~~the~~ about 45% iron, smelting charges very low. Ore shoots 1 ft. to 20 ft. in width. Surface ores are carbonates changing with depth to bornite and chalcopyrite averaging 5% copper
23. Geology & Mineralization
24. Ore: Positive & Probable, Ore Dumps, Tailings (with good values in silver and some gold).

Numerous faces of ore inside mine, but very little or no ore blocked out. There are several thousand tons of low grade ore ($2\frac{1}{2}\%$ copper, 6 oz. silver) on old dumps. (see list of assays attached taken from various parts of the mine by O. O. Mattox, who had lease on the property about 1937) Slag dump, 10,000 tons, contains 1% copper and some silver. Milling grade ore in sight in mine, average \$12.00 per ton.

24-A Vein Width, Length, Value, etc.

Main ore body about the size of the iron deposit, 300 x 50 ft. with fissure veins of good ore branching off in various directions through the porphyry and limestone. There is also an upper and parallel iron dyke about 50 feet from the lower and main one. The surface along this gave ores 7 oz. silver and 4% copper.

25. Mine, Mill Equipment & Flow Sheet Smelter was shut down about 1905 and it has been scrapped and nothing left. While operating from 1903 to 1905 the mill shipped \$216,000.00 worth of matte.

26. Road Conditions, Route Reached from Pearce over natural road in fair condition. Elevation at Pearce 4375 ft. at Orphan claim, old smelter site $1\frac{1}{2}$ miles from main tunnel, 5205 ft. at Bagge tunnel (main tunnel) about 6500 ft. Low clearance cars can negotiate. Passable all year around. (see map attached)

27. Water Supply Small gravity flow of water from lower or Bagge tunnel. Volume can be increased by cleaning out. This water can be used for all purposes. At extreme end of Bagge tunnel good seepage of water filters away but can be piped to surface. There is a 300 ft. Winze and 40 foot drift in Bagge tunnel full of water. Claimed good ore encountered in this drift. Mine on the whole dry but enough water to operate proper sized mill, Quite a volume of water on Tom Cat but a distance for pipe line.

28. Brief History See Copper Handbook for 1903 for early history. Incorporated in 1898 for \$2,000,000.00. Closed down in 1907 or 1908. Not much work done after 1905 with the closing of the smelter although still retained a good sized mine payroll. Since original operations terminated the property has been worked intermittently by leasers. Shut down of property apparently due to mismanagement. (see appended sheet for further details.

29. Special Problems, Reports Filed

(See appended sheet)

30. Remarks

(See appended sheet)

31. If property for sale: Price, terms and address to negotiate. Property for sale or lease, on attractive terms. Address Mrs. Ethel Boulter, 1325 West Latham Street, Phoenix, Arizona, for terms and inspection of the large mine map pending the time when a copy can be furnished with this report.

32. Signed.....(Signed) Howard Boulter..(husband).....

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date June 7, 1939.

Mine Black Diamond

District Turquoise, Cochise Co

Location 9 mi Westerly from Pearce.

Former name Same (Incorporated 1898)

Owner A[✓]dam Dodd

Address

Operator Same

Address

President No corporation.

Gen. Mgr.

Mine Supt. None

Mill Supt.

Principal Metals Copper gold silver.

Men Employed

Production Rate (Old operation 200 tons)

Mill: Type & Cap.

Power: Amt. & Type None

Operations: Present Idle

Operations Planned Depend on financing. Property now under option and lease, but no work has been done and option will terminate July 1, 1939.

Number Claims, Title, etc. 3 patented and 6 unpatented lode claims.

No claims or indebtedness against property.

Description: Topog. & Geog. On crest and slopes of east ridge of Dragoon Mountains. On steep slope. Original operation had $1\frac{1}{2}$ mile aerial tramway from Bagge tunnel to smelter.

Mine Workings: Amt. & Condition Opened mainly by tunnels. Two miles of underground workings. Greatest depth below surface about 250 feet.

Workings are open and for the most part accessible.

Geology & Mineralization Ores occur as contact veins between limestone and porphyry Vein widths 100 ft or more, ore shoots 1 ft to 20 ft in width. Surface ores are carbonates changing in depth to Bornite and Chalcopyrite averaging about 5% copper with good values in silver and a little gold.

Ore: Positive & Probable, Ore Dumps, Tailings

All of the shipping grade ore in sight has been removed and faces will have to be advanced to open up more. Milling grade ore (\$12 per ton) in sight much of it broken. Slag dump (10,000 tons) contains 1% copper.

Mine, Mill Equipment & Flow Sheet

No equipment left on ground.

Road Conditions, Route

Reached from Pearce over natural road in fair condition to the smelter site 8 miles, maximum grade 5%. Rises about 500 feet Pearce to smelter site. Rises about 500 feet more between smelter site and tunnel mouth. Road easily maintained and now being put in good condition.

Water Supply

Domestic water only. Water for original operation by pipe line from Commonwealth. Believed commercial water can be developed by churn drilling for \$2000.00.

Brief History

See Copper Handbook 1903 for early history. Since original operation terminated, the property has been worked intermittently by leasers. Smelter was closed about 1907 and never reopened. Shut down due to drop in price of copper and not to lack of ore.

Special Problems, Reports Filed

Hand Books carry some information. No reports available.

Remarks

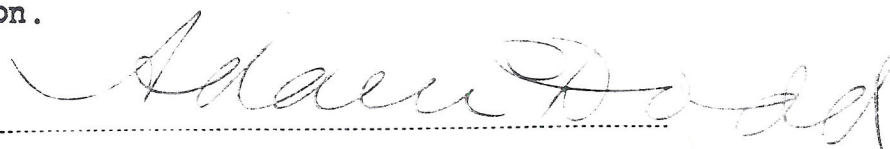
A practical and experienced mining man well acquainted with this property (*) states that the property is worthy of consideration. Could be handled by experienced leasers with a capital of \$10,000 or could be reopened as a regular mining operation for \$60,000.

If property for sale: Price, terms and address to negotiate.

If present existing option is not exercised on July 1, 1939, the property will be for sale or lease and attractive price and terms will be offered.

Owner is 88 years of age and has no children to carry on.

Signed.....



Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date May 19th, 1947

1. Mine: Black Diamond Copper Mining Company
2. Location: Sec 30 Twp 18 S Range 24 E Nearest Town Pearce
Distance 8 miles Direction SE Road Condition Fair; easily and
inexpensively put in shape
3. Mining District & County: Turquoise, Cochise
4. Former Name of Mine: Same
5. Owner: Ethel Boulter
Address: Box 31 Pearce Arizona
6. Operator: None
Address:
7. Principal Minerals: Copper; silver, gold
8. Number of Claims: 7 Lode 7 Placer -
Patented 3 Unpatented 4
9. Type of Surrounding Terrain Rugged and steep; elevation of main tunnel about
6200 feet; expanses broad and gradual; approx. high 7250 ft; low
5200 ft. claims located along ridge and east side of range; terrain
cut by several washes; grade from Pearce (Highway US 666) to mine,
approx 1800 ft.
10. Geology & Mineralization: In the center of this group of claims an iron dyke
protrudes through limestone for a distance of approx 300 ft in length &
50 ft in width. There are also intrusions of porphyry. Ore occurs in the
iron and between the contacts in well defined fissure veins and large
deposits. The ore encountered in the veins is of a shippable grade
while the deposits are of low grade and suitable for milling or smelting.
They are self-fluxing and about 40% iron content and 38% silica (See
report on mine by Fred A Mattox, also list of assays taken by O O Mattox
both attached)
11. Dimension & Value of Ore Body: The main orebody can be said to be about the
size of the iron deposit - 300 X 50 feet with fissure veins of good ore
branching off in various directions thru the porphyry and limestone.
There is also an upper and parallel iron dyke about 50 ft from the lower
and main one. The surface along this gave ores, by some sorting, 7 oz
silver, 4 % copper.

12. Ore "Blocked Out" or "In Sight": There are numerous faces of ore inside the mine but there is very little or no ore which can be said to be blocked out. However, Jonathan Gordon, metallurgist of Tombstone, in 1913, estimated 150,000 to 175,000 tons of ore in sight. (See excerpt of letter re this, attached). There are several thousand tons of low grade, but shippable ore, in the old dumps which can be sorted and shipped. From one of the large upper dumps ore can be cleaned to assay 6 oz silver, 3% copper. Slag dump at old smelter assays $\frac{1}{2}$ % copper and couple oz silver.

Ore Probable: The probable orebody is below the present workings. Mr. Gordon before quoted, says there is a big mine there and that it should be diamond drilled. The mine was never developed by the original company when they put in their mill in 1902. Tom Saunderson, a hard rock miner of Tombstone, who was one of the first on the property in 1898 and one of the last to go in 1908, says that the shaft should be unwatered.

13. Mine Workings—Amount and Condition

No.	Feet	Condition
Shafts.....	See	Everything in very good condition. All
Raizes.....	Map	parts of the mine open. Mine clear of debris
Tunnels.....	Attached	and the air exceptionally good. Walls
Crosscuts.....		strong and very little timbering.
Stopes.....		

14. Water Supply: There is a small gravity flow of water from the lower Bagge tunnel. This is good pure water for domestic purposes and the volume can be considerably increased. At the extreme end of the Bagge tunnel there is a good seepage of water which filters away, but could be piped out to the surface. Plant could be placed at Pearce where there is unlimited water in the Commonwealth. This would occasion an 8 mile haul for the ore.

15. Brief History

Opened in the 1890's for silver. Incorporated in 1898 for \$2,000,000.00 and smelter built in 1902 and put in operation in 1903 and ran about a year. During operation made and shipped to New York about \$220,000.00 worth of matte. (See copy of Copper Handbook for the year 1905 attached). At height of activity 100 men working in the mine and 50 at the smelter. Ore reserves of value worked out and development not started in time and financial difficulties caused what was to be the final shutdown in 1908. Since that time no development work of moment has been done; the mine is practically as the original company left it. It was sold at sheriff's sale in 1913 to two of the bondholders and it underwent an intensive sales campaign for several years and no effort made to work it. Finally leasors allowed on the ground and they shipped the some 15,000 tons of ore mined and in the chutes and at the smelter. This consumed several years and various leasors. In the meantime the improvements on the property were being sold off and nothing remains. It was sold again at sheriff's sale to the watchman on a labor lease in 1932, and then by inheritance to the present owner.

16. Signature

Howard Boulter

Howard Boulter, (husband)

17. If Property for Sale, List Approximate Price and Terms: Approx sale price \$40,000.00 and terms to suit the contracting parties conforming to good business.

1938

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EAGLE-PICHER M. & S. CO.
ABBREVIATED REPORT

BLACK DIAMOND MINES
OF ARIZONA

COCHISE COUNTY

PEARCE

ARIZONA

The group of mining claims known as the Black Diamond Mines is located in the Dragoon mountains, in the Turquoise Mining District, County of Cochise, State of Arizona, about eight miles from the town of Pearce. The group consists of three patented and six unpatented mining claims. Additional contiguous claims are available.

The Black Diamond lies in the Dragoon copper belt of Arizona which is, in turn, part of the broad copper belt extending from Cananea in Mexico thru Bisbee and north to Miami and Globe. It is approximately ten miles from the historic properties at Courtland and Gleason. These mines are being reopened, and plan to resume production by the first of the year. It is eight miles from the Commonwealth mine at Pearce, one of the country's famous silver producers. Plans are also under way for the reopening of the Commonwealth property.

The Black Diamond formation consists of stratified beds of the Paleozoic period. These are traversed by igneous dikes which are parallel to the bedding. The strike of the ledges follows a northwesterly and southeasterly course, north 60 west by magnetic needle. The hanging wall is formed by a large porphyry dike. The footwall is quartzite. The ore bearing ledge is a true fissure vein imbedded in blue limestone of great width. Nearly all of the important Arizona copper deposits are true fissure veins in this sense, and their productivity and permanence stand in close relation to the thickness of the ore bearing limestone.

A heavy iron capping outcrops at an elevation of 5,240 feet. The outcroppings extend along the claims for a distance of nearly 5,000 feet, averaging from 100 to 150 feet in width, and standing out boldly. A second line of outcrop, paralleling the major one, shows assays of 20 ounces of silver, and 5½% copper on the surface. On the major outcrop there is a large surface body of low grade carbonate ore. Some pit mining has been done at this point, and several short tunnels have been driven in on high grade silver veins occurring within the low grade body. The walls of these tunnels are being covered with thick copper sulphate deposited from the weather leachings of the

surrounding ore.

So far, development work and mining have been confined to the northwesterly end of the deposit. At this point, four tunnels have been driven which are connected by winzes and ore chutes to facilitate the handling of the ore. The first and upper tunnel is about 100 feet in length. The fourth, and lowest, tunnel, some 500 feet below, has been driven a distance of 1,500 feet, and underlies the ore bodies that were opened and mined in the upper levels. A number of exceedingly large bodies of bornite and chalcopyrite carrying silver were encountered in this horizon. The ore bodies succeed one another along the strike of the vein, and underlie one another, the dip being almost vertical. Extensive stoping has been carried out, but the ore at these levels is by no means exhausted.

The lower tunnel opened a flow of water running 10,000 gallons a day. (This is now drained, only a small flow easily handled by a 2 inch pipe remaining). This tunnel was below the ground water level of this part of the deposit, and has apparently bottomed the rich secondary sulphide ores at this point. The primary ores continue solidly, however, and a large reserve of low grade milling ore has been blocked out. A winze 300 feet deep is sunk at the inner end of this lower tunnel. This winze is filled with water. Verbal reports available, however, indicate that this winze cut a number of low grade ore bodies and proved their continuity to depth.

At the mouth of this lower tunnel a shaft is down to a depth of 293 feet. This shaft is, in my estimation, extremely important in any examination of this property. This shaft, on the same level and to the same depth as the winze just described above, is a dry shaft. Reliable reports on the work carried out at this point show that a short drift on the 293 foot level of depth has opened a body of bornite ore running 32% copper. It is apparent that the ground water level on this southeasterly end of the deposit lies at a yet undetermined depth far below the ground water level of the deposit at the point of the first workings. This is adequately explained by an intervening impervious formation, and in some degree, by the topography of the country. It follows, in my opinion, that the bodies of rich secondary sulphides may be expected to continue in this direction, in approximately the same occurrence as can be traced in the older workings, and the reports indicate considerably better values here than in the ores previously encountered. It would be quite practicable to drive a tunnel to tap the ore bodies on this level.

as cable ladders or a rope. A windlass and an excellent headframe are in place over the shaft.

The Black Diamond is in a climate suitable for all year 'round mining. Oak and juniper trees grow on the ground and are available for mining purposes and for domestic fuel. There is a sufficient flow of water for all domestic purposes, and possibly for a small treatment plant. Although there are no figures available on the water reserve present on the property, there are wells and springs close by capable of being developed sufficiently to furnish the water needs of a mill installation.

There are four residence houses on the ground in fairly good condition, and several others that can be put into service at small expense. At the mine proper there is a machinery house equipped with two old Fairbanks-Morse distillate burning engines and compressors, and an air storage tank, all in serviceable shape. There are also a blacksmith shop, a small warehouse, and a powder cave. There is an ore chute and a loading bin of fifty tons capacity in good condition.

A good trucking road is maintained from the mine to the town of Pearce, a distance of eight miles. From that point it is seventeen miles over a state highway to the loading station on the railroad.

The ores are almost exclusively sulphides, the minerals being bornite and chalcopyrite in a gangue of iron and silica. These ores are self fluxing, and, for this reason, bring a consideration in treatment rates if shipped to a smelter. Smelter liquidations for ores shipped during the present year are available for examination.

For further information, or for arrangements for an examination of the property, write or see

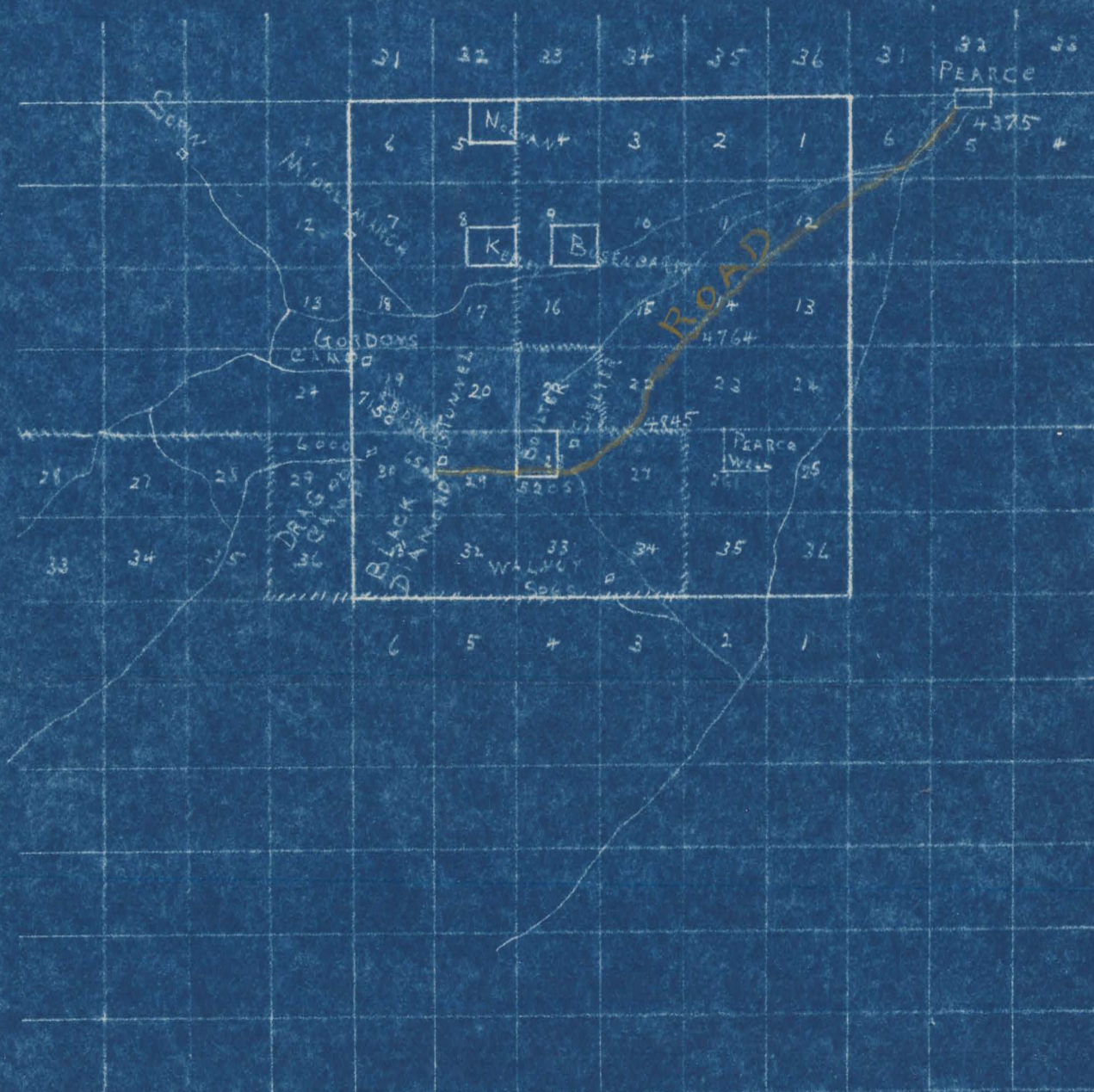
Fred A. Mattox
536 12th Street
Douglas, Arizona

or

O.O. Mattox,
P.O. Box 4,
Pearce, Arizona.

BLACK DIAMOND

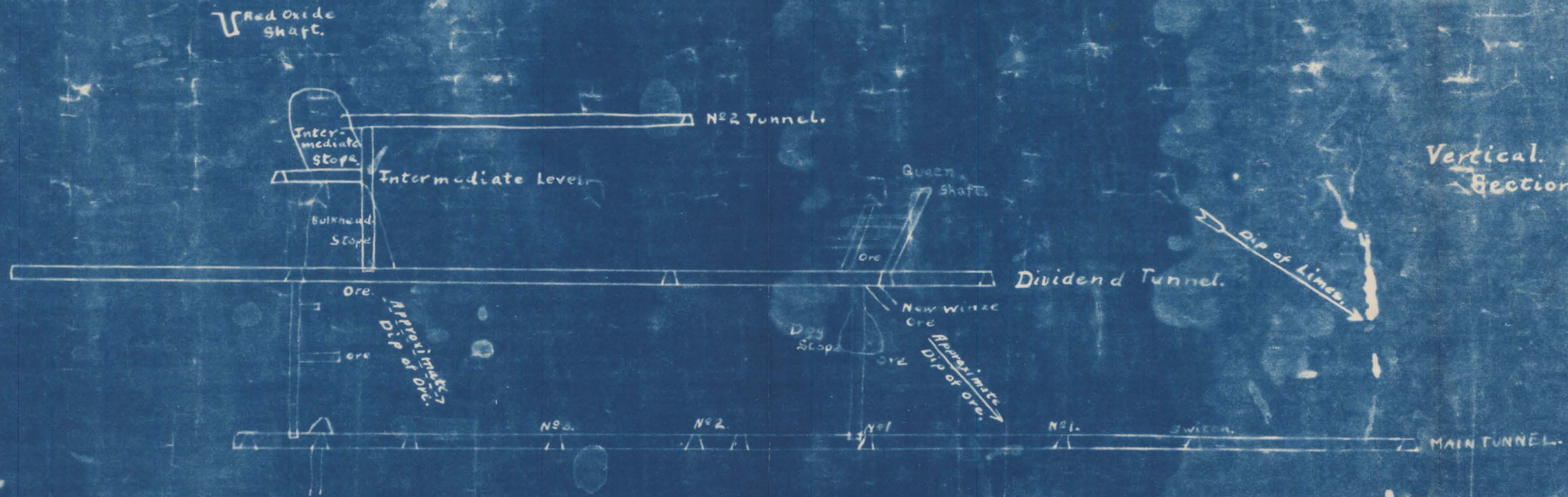
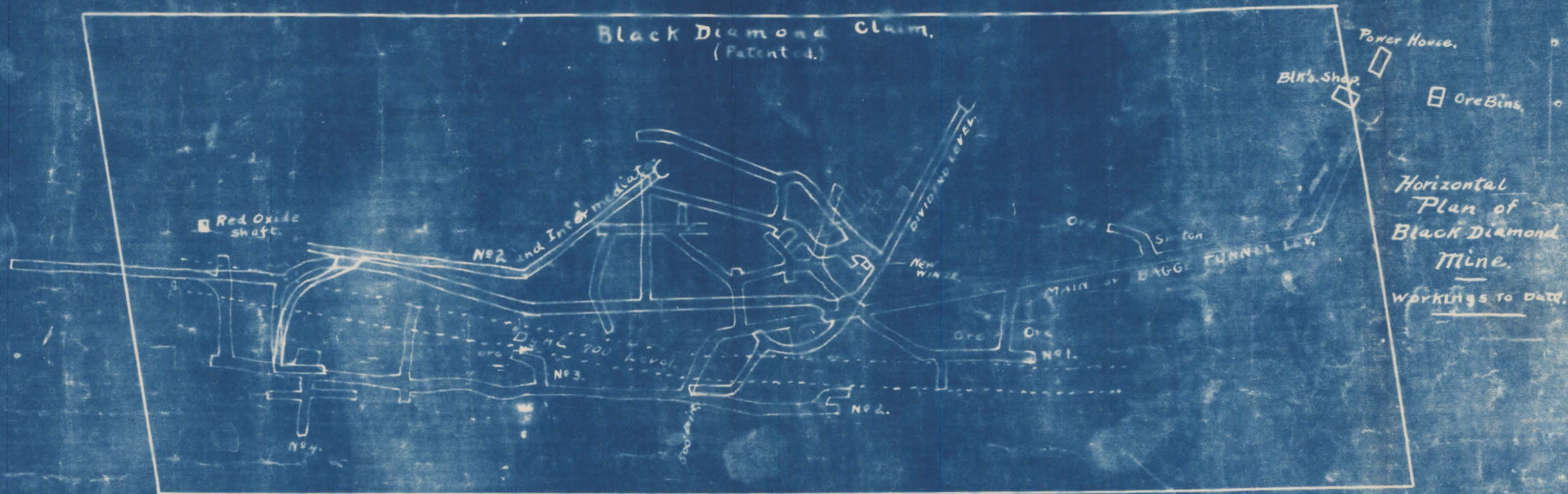
T 18 S R 24 E



Pearce to Smelter 6 miles
2 $\frac{1}{2}$ % grade

Smelter to mine 2 miles
12 $\frac{1}{2}$ % grade

W.G.B. Apl. 20. 1906.





LEGEND

- N°2 Cross Cut
- N°3 Cross Cut
- Intermediate
- Dividend Workings
- Bagge Tunnel
- Dog Slope
- Queen Drifts

UNDERGROUND MAP OF THE BLACK DIAMOND MINE

IN COCHISE COUNTY, A.T.

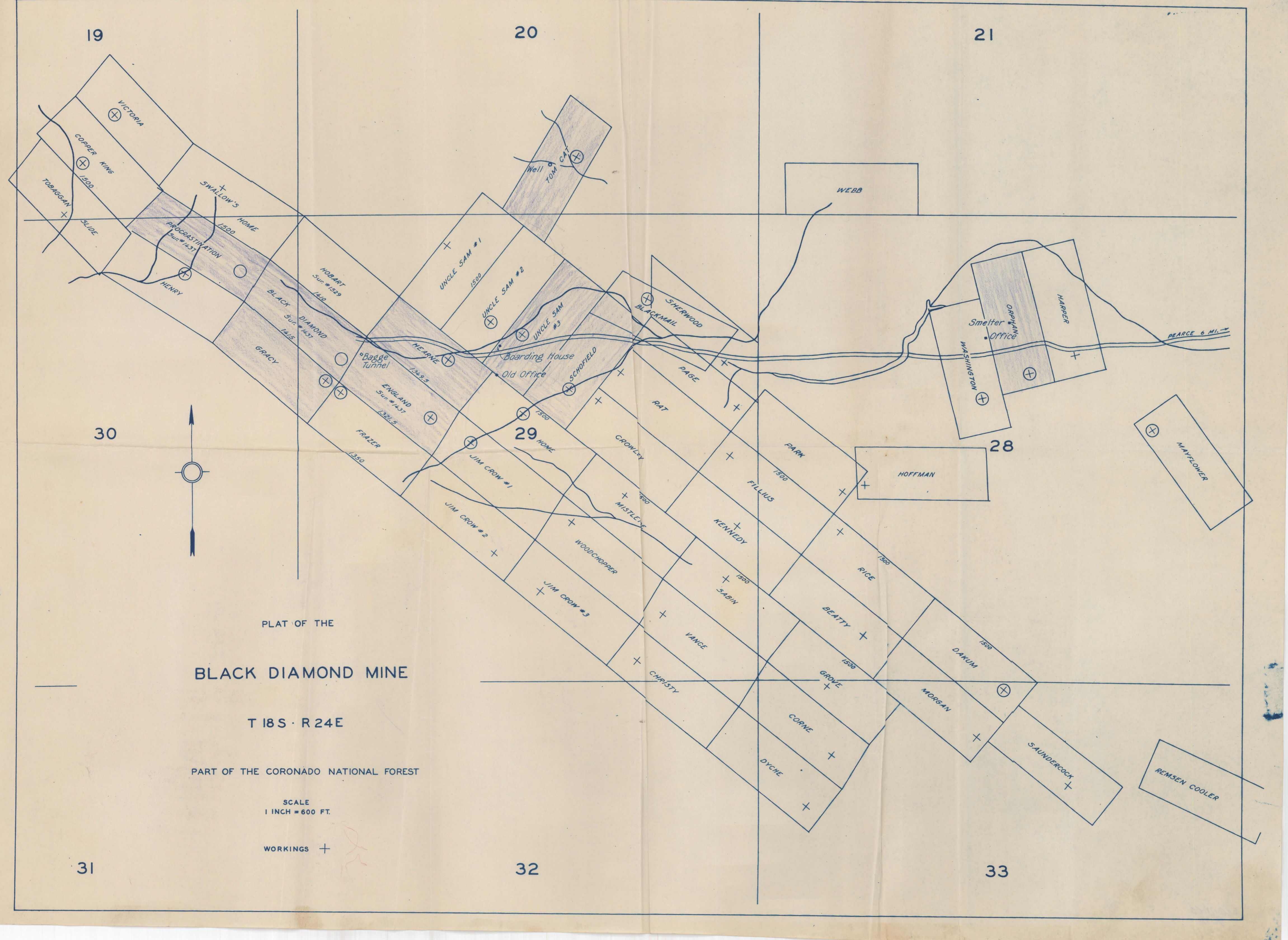
AS SURVEYED April 1907 BY J. S. Hammon.

SCALE, 50 ft. to 1 inch.

LEGEND

- | | |
|---|-----------------|
|  | BAGGE TUNNEL |
|  | DIVIDEND TUNNEL |
|  | QUEEN DRIFTS |
|  | Nº 2 CROSSCUT |
|  | Nº 3 CROSSCUT |
|  | FIRST LEVEL |

UNDERGROUND WORKINGS
OF THE
BLACK DIAMOND MINE
COCHISE COUNTY ARIZONA
SCALE 50'-1" OCT. 1901



19

20

21

30

29

28

PLAT OF THE
BLACK DIAMOND MINE

T 18S R 24E

PART OF THE CORONADO NATIONAL FOREST

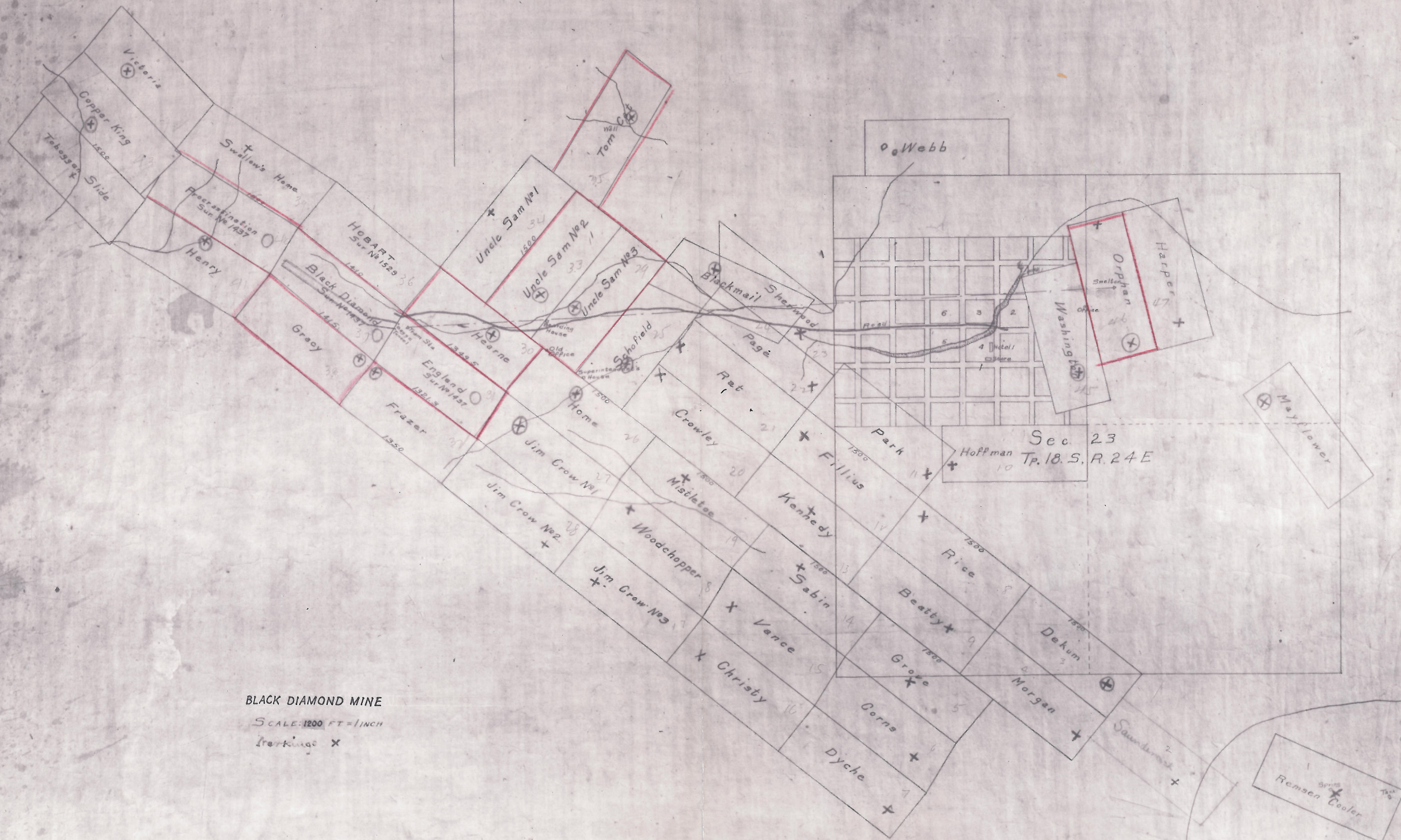
SCALE
1 INCH = 600 FT.

WORKINGS +

31

32

33



BLACK DIAMOND MINE
SCALE: 1200 FT = 1 INCH
Irreducible X