Building 20 - Federal Center
Denver 25, Colorado

August 18, 1960

Memorandum

To: George C. Belfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Hugh M. Connors, Acting Field Officer, OME, Region III

Subject: Report of Certified Project for the period
January 1, 1959 to December 31, 1959
DMEA Docket No. 2603 (Lead-Zinc) Contract No. Idm 2428
Magna King Manganese Mining Company
(Ajax mine)
Pinal County, Arizona

The subject certified project was listed in your memorandum of August 12, 1960 as not having an annual report.

Our records show that we forwarded statement in lieu of interim report to your office on June 3, 1960. Attached are the original and two copies of that interim report.

Original signed by

Hugh M. Connors

Attachments
HMC/lm
cc: Semi Annual Report File Idm-2428
Chron

Building 20 - Federal Center
Denver 25, Colorado

June 3, 1960

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D.C.

From: Hugh M. Connors, Acting Field Officer, OME, Region III

Subject: Report of Certified Project for the period
January 1, 1959 to December 31, 1959

DMEA Docket No. 2603 Contract No. Idm-E428 (Lead-Zinc)
Magma King Manganese Mining Company
(Ajax mine)
Pinal County, Arizona

Inclosed are the original and one copy of the subject report.

Original signed by

Hugh M. Connors

Enclosure

HMC/lm
cc: Semiannual Report File Idm-E428
Chron

OFFICE OF MINERALS EXPLORATION

REGION III

Statement in Lieu of Interim Report
of Certified Project

Reporting Period January 1, 1959 to December 31, 1959

Docket and Contract Number DMEA-2603, Idm-E428

Operator Magma King Manganese Mining Company (Lead-Zinc)
(Ajax mine) Pinal County, Arizona

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [ ]

Remarks:

Letters sent to the Operator at various addresses were returned by the P.O. department marked "unclaimed".

On site inspection of property made by writer while in vicinity on other official business, 5/23/60. Findings during this and previous inspections indicate the property has been inactive since shortly after the contract was terminated.

Frank H. Allen, one of the owners of the property, said in a letter received by the OME 5/25/60 that: The property is still held by the Operator who can probably be contacted at Pomeroy Development Co., 421 East 4th Ave., Mesa, Arizona.

Signed M Monsalo Date 5/27/60

6/3/60 HMC/lm cc: E 428 Chron

224 New Customhouse
Denver 2, Colorado
April 2, 1959

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Certified projects inactive duringreporting period July 1, 1958 through December 31, 1958

Enclosed is a list of certified projects whose status has not changed since the previous semiannual report.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Enclosure

HMC/rf

cc: SAR file Idm-E33, E254, E102~~7~~, E522, E315, E571, E257, E428, E67, E419, E479, E460, E632, E655

Harshman
Romsle
Chron.

OME, REGION III

Statement in Lieu of Semiannual Report

Reporting Period July 1, 1958 - December 31, 1958
Docket and Contract Number DMEA 2605 - Idm-2420 (Pb-Zn)
Operator Magma King Mengonack Co.

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [X]

Remarks:

No DMEA ore stockpiled.

Original signed by

Signed T. M. Romolo

Date April 2, 1959

DMEA, REGION III

SEMIANNUAL REPORT ON CERTIFIED PROJECTS

INACTIVE SINCE LAST REPORT

Reporting Period: January 1, 1958 - June 30, 1958

Commodity	Docket	Contract	Name
Copper	2698	X 33	Banner Mining Company
Copper	2314	X 254	American Expl. & Min. Co.
Cu-Zn	2746	X 522	Coronado Copper & Zinc Co.
Cu-Pb-Zn	2234	X 317	Sam Knight Mining Company
Cu-Pb-Zn	1802	X 315	Reed and Reed
Pb-Zn	1303X	X 371	Yuma Metals, Inc.
Pb-Zn	1385X	X 237	U.S. Smelt., Ref. & Min. Co.
Pb-Zn	2603	X 488	Magma King Manganese Company
Pb-Zn-Cu	371X	X 67	Peru Mining Company
Zinc	2711	X 478	Globe-Miami Copper-Zinc Corp.
Mercury	2445	X 460	Ord Mercury Mines
Tungsten	2356	X 370	Nihan Mining Company
Tungsten	2957	X 632	Carl Hovgard
Tungsten	3448	X 763	Hillside Min. and Milling Co.
Uranium	3044	X 655	Uranium Development Company

Original signed by

T. M. Rumalo

September 12, 1958

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

April 1, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1957 through December 31, 1957

DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428
Magma King Manganese Mining Co. (Ajax Lead-Zinc Mine)
Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

Original signed by
E. N. HARSHMAN

Acting Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM:dp

cc: Semiannual Report File E 428
Emerick
DMEA/TUC.
Ciron.

DMEA, REGION III

Statement in Lieu of Semiannual Report

Reporting Period July 1 to Dec. 30, 1957
Docket and Contract Number DMEA-2603 - Idn-6429
Operator Magna King Manganese Mining Co.

The project has been inactive during the reporting period ☒

Pertinent data relative to the subject contract has remained unchanged since the last report ☐

Remarks: I inspected the property March 20, 1953.

R. W. Nichols, caretaker, said the project had been idle during the reporting period. I found no evidence to the contrary at the mine workings.

Original signed by
T. M. Romslo

Signed _____ Date March 24, 1953

T. M. Romslo

CC W. H. King Cert. file
DMEA-2603 DF
TMRomslo:fr

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

August 21, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1957 through June 30, 1957
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428, Magma King Manganese Mining Co.
(Ajax Lead-Zinc Mine), Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

Original signed by
J. W. TOWNSEND

Alternate Acting Executive Officer
DMEA Field Team, Region III

Enclosures

MHM/vj

cc: Semiannual Report File E 428
DMEA/TUC
Harshman
Emerick
Chron.

DMEA
ARTMENT OF THE INTERIOR
AUG 19 1957
REGION III
DENVER, COLORADO

DMEA, REGION III

STATEMENT IN LIEU OF SEMIANNUAL REPORT

Reporting Period — Jan. 1 to June 30, 1957
Docket and Contract Number — DMEA-2603, Idm-E428
Operator — Magma King Manganese Mining Co.

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [ ]

Remarks: Property visited August 6, 1957.

The only person present, R. W. Nicholes, watchman, said no work had been done on the property. He also said that the owner of the property had told him that the operator's lease and option probably would be cancelled in the near future.

The last $\frac{1}{4}$ mile of road to the mine remains impassable.

CC W. H. King (Orig. & 9)
DMEA-2603
DF

Signed T. M. Romslo
T. M. Romslo

Date August 15, 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: February 12, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1956 through December 31, 1956
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428, Magma King Manganese Mining Company (Ajax Mine), Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office and Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
MHM/vj
cc: Semiannual Report File E 428
W. R. Storms
Horshman
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
DEPARTMENT OF THE INTERIOR
FEB 7 1957
REGION IV
DENVER, COLORADO

February 4, 1957

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report of Certified Project, July 1 - December 31, 1956, Docket DMEA-2603 (Lead-Zinc), Contract Idm-E428, Magma King Manganese Mining Co. (Ajax Mine), Pinal County, Ariz.

Enclosed are original and 8 copies of the above report by T. M. Romslo of the Bureau of Mines.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
DMEA-2603
Cert. File
DF

WRStorms:frj

Special minutes....
Orig + Brown
Harshman
Storms
Carson

DMEA, REGION XII

STATEMENT IN LIEU OF SEMIANNUAL REPORT

Reporting Period	July 1 to December 31, 1956
Docket and Contract Number	DMEA-2661, Id-2428
Operator	Magna King Manganese Mining Co.

	"X" one
The project has been inactive during the reporting period	X

Pertinent data relative to the subject contract has remained unchanged since the last report.

Remarks: I visited the project on January 29, 1957 and found that: (1) The last ½ mile of road to the mine had again been washed out; (2) conditions at the mine indicated no recent activities; and (3) R. V. Nicholes is still acting as watchman for the operator. Mr. Nicholes said that no work had been done on the mine during the period of this report and that R. J. Pomeroy, President of the company, had last visited the mine about 3 months ago.

Signed

Original signed
T. M. Romalo

T. M. Romalo

Date

February 4, 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: July 31, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1956 through June 30, 1956
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428 Magma King Manganese Mining Company (Ajax Mine), Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, and Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
MEM/vj

cc: Semiannual Report File E 428
Royalty File E428
W. R. Storms
E. N. Harshman
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
Date Rec'd.
JUL 30 1956
BUREAU OF MINES
Denver, Colorado

July 26, 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report, January 1-June 30, 1956, Docket DMEA-2603, Contract Idm-E428 (Lead-Zinc), Magma King Manganese Mining Co. (Ajax Mine), Pinal County, Ariz.

Enclosed are original and 8 copies of the above semi-annual report as per your recent memorandum.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
DMEA-2603
Cert File
DF

WRStorms:frj

Semi-Annual Report of Certified Projects

Reporting Period	January 1, to June 30, 1956
Docket and Contract Number	Docket DMA-2603, Contract 18-1423
Operator	Magma Mining Manganese Mining Co.
Commodity	Lead-Zinc
Mine Name	Ajax Mine
County and State	Pinal County, Ariz.

Date of Examination for this Report July 9, 1956

Change in status since previous report:

Data - None

Activities - Confined to road repairs. The road work, according to R. W. Nicholas, watchman, was completed late in June under the supervision of R. J. Pomeroy, President of the Magma Mining Manganese Co.

T. M. Romalo, Mining Engineer
U. S. Bureau of Mines

cc: W. R. Trever (Orig. + 8)
DMA-2603
Cert. file
MC

T:Romalo:fr

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: February 24, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1955 through December 31, 1955.
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428 , Magma King Manganese Company,
Ajax Lead-Zinc Mine, Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office. and Memorandum 29.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
vj
cc: Semiannual Report File E 428
Royalty File E428
W. R. Storms
E. N. Harshman
~~Chrono~~
J. N. Faick
Chron.

DMEA
Date Rec'd.

JAN 30 1956

BUREAU OF MINES
Denver, Colorado

Box 4097
Tucson 8, Arizona

January 27, 1956

Memorandum

To : W. M. Trevor, Executive Officer, DMEA Field Team, Region XII

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report of Certified Project, July 1 - December 31, 1955, Docket DMEA-2503, Contract Nm-2438, Magma King Manganese Mining Co.'s Ajax Lead-Zinc Mine, Pinal County, Ariz.

Enclosed are original and 3 copies of the above report by T. M. Rosalie of the Bureau of Mines.

Walter R. Storms

Walter R. Storms

CC W. M. Trevor
DMEA-2503
Cert. File
SF

WRStorms:frj

Semi-Annual Report of Certified Projects

Reporting period	July 1, 1955 to January 1, 1956
Docket and Contract Number	DMEA-2603, Idm-E428
Operator	Magma King Manganese Mining Co.
Commodity	Lead-Zinc
Mine Name	Ajax
County and State	Pinal County, Arizona
Date of Contract	October 23, 1952
Date of certification	June 30, 1954
Expiration date of Royalty Payments	October 23, 1962
Date of Examination of this Report	January 26, 1956
Total Amount of Contract	$23,100.00
Total Expenditures under Contract	$6,790.00
Amount of Government Participation at 50%	$3,395.00
Royalty Payments this Perioe	$0.00
Previous Royalty Payments	$0.00
Total Royalty Payments to Date	$0.00
% Loan Repayment completed	$0.00
Amount of Royalty Due	None
Royalty Remarks	"

Original Estimate of Reserves
(from Final Engr. Report. Final
Geol. Report in preparation.)

No measurable reserves. Approximately 10,000 tons of 10 percent combined lead and zinc indicated in old workings and principal target that was not reached by project. A few hundred tons containing 2.2 percent zinc, 0.73 percent lead and 0.22 percent copper was penetrated by drift driven under subject contract. Inferred reserves remain at a few tens of thousand tons containing about 1 percent lead and 8 percent zinc.

Increase of Reserves by Work performed subsequent to expiration or termination of contract:	None
Revised estimate of Reserves	—
Production this Period	None
Amount of Previous Production (since date of Contract)	None
Total RMEA Production to Date	None
% of Revised Reserves Mined	0.0

Other Remarks. During my visit to the mine I found the last half mile of road was still impassable by automobile. No one was at the mine and all equipment had been removed from the surface buildings. In talking to Mr. R. M. Michelet, a prospector who resides at the Ajax camp at about 3/4 mile from the mine, I obtained the

following information. About a year ago, R. J. Pomeroy, president of Subject company, gave Mr. Nicholas permission to occupy one of the houses. As a result, Mr. Nicholas has acted as unofficial caretaker of the property. Pomeroy, who presently is in Utah or Colorado, last visited the mine in October 1955. He was accompanied by 2 geologists who examined the property and presented unfavorable findings to their client.

At Florence, county seat of Pinal County, I learned that most of the 1955 taxes on the patented claims had been paid by the owners. Mr. W. C. Smith, one of the owners, was contacted via telephone by W. R. Storms. Smith said the Magna King Manganese Mining Co. lease on Ajax is still in force but that the lease probably would be cancelled because of lack of work on the property.

T. M. Romalo

T. M. Romalo
Mining Engineer
Southwest Experiment Station

224 New Customhouse
Denver 2, Colorado

January 25, 1955

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Semi-annual Report - Docket No. DMEA 2603, Contract No. Idm-B428 (Lead-Zinc), Magma King Manganese Mining Co., Pinal County, Arizona

Enclosed are four copies of the Semi-annual Report on Contract No. Idm-B428.

W. M. Craver

W. M. Craver

Enclosures

cc: Semi-annual Report File
Harshman w/Encl.
Chron
Storms

January 14, 1955

Memorandum

Exploration

To : Executive Officer, Defense Minerals Administration

From : Superintendent, Spokane Experiment Station

Subject : Interim Report, DMEA Contract Ida-2432, Docket DMEA-2603, Meadow Kind Manganese Mining Co.'s Ajax Lead-Zinc Mine, Pinal County, Ariz.

Enclosed are original and 8 copies of a short memorandum report on the above property by W. R. Hardwick of the Bureau of Mines. Hardwick visited this property while checking DMEA certified project in that part of the state.

Walter R. Storms

Walter R. Storms

CC Admin. Off. (8)
DMEA-2603
BF

WRStorms:frj

January 14, 1955

Memorandum

To : Walter K. Stamm, Superintendent, Southwest Exploration Section

From : William R. Hardwick, Mining Engineer, Tucson, Ariz.

Subject : Interim Report, Docket DMEA-2603, Contract IdA-2488, Alpha Lead Maintenance Mining Co.'s Ajax Lead-Zinc Mine, Pinal County, Ariz.

The Ajax mine was visited on January 7, 1955. There was no one at the mine. The road was badly washed out and the last half mile was impassible by automobile. The same condition existed when the mine was last visited on September 16, 1954. There has been no ore sold since the contract was approved.

This short term contract was approved on October 21, 1954. The operator drove 194 feet of drift at a total cost of $6,720.00, then stopped work before it reached the objective. Some low-grade ore was discovered. The operator was not able to finance the completion of the project, so termination with "Certification of Discovery or Development" has been recommended. A termination agreement has been sent to the operator, but so far as we know, has not been signed by him and returned to the DMEA Executive Officer.

William R. Hardwick
William R. Hardwick
Mining Engineer
Tucson, Arizona

CC Exec. Off. (Orig. & 2)
DMEA-2603
RF

WRHarmon:fvj

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR

NOV 16 1962
REGION III
DENVER COLORADO

Magma King Manganese Mining Co.
581 North Colorado Street
Chandler, Arizona

NOV 13 1962

Re: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Pinal County, Arizona
Contract Idm-2428

Gentlemen:

By the terms of the subject Exploration Project Contract, as amended, and the royalty agreement in Paragraph 4.c., Amendment 7, dated June 30, 1954, all minerals mined or produced from October 23, 1952, to October 23, 1962, were subject to the Government's percentage royalty as set forth in said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

George Fumich, Jr.

Director

cc: Director's Reading
CA&A Division
Region III (2)
Docket
Mr. Frank H. Allen
Mrs. Gladys Allen, 775 West Toledo St., Chandler, Ariz.
WRGriswold/mm
11-8-62

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
NOV 16 1962
REGION III
DENVER COLORADO

Magma King Manganese Mining Co.
381 North Colorado Street
Chandler, Arizona

NOV 13 1962

Re: DMMA-3603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Final County, Arizona
Contract Ida-2428

Gentlemen:

By the terms of the subject Exploration Project Contract, as amended, and the royalty agreement in Paragraph 4.c., Amendment 7, dated June 30, 1954, all minerals mined or produced from October 23, 1952, to October 23, 1962, were subject to the Government's percentage royalty as set forth in said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

George Fumich, Jr.

Director

cc: Director's Reading
CA&A Division
Region III (2)
Docket
Mr. Frank H. Allen
Mrs. Gladys Allen, 775 West Toledo St., Chandler, Ariz.
WRGriswold/mm
11-8-62

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
NOV 16 1962
REGION III
DENVER, COLORADO

Mr. Walter C. Smith
Coolidge
Arizona

Re: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Pinal County, Arizona
Contract Idm-E428

Dear Mr. Smith:

Enclosed is a self-explanatory letter of today to Magma King Manganese Mining Co. under the subject contract.

This correspondence relates to the Owner's Consent to Lien signed by you on October 6, 1952, for yourself and as attorney-in-fact for other landowners, under the Defense Minerals Exploration Administration program which has been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George Fumich, Jr.

Director

Enclosure
WRG:rwed/mm
11-9-62
cc: Director's reading file
Region III (2)
Docket
Code 500

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
MENT OF THE INTERIOR
NOV 1 6 1962
EGION III
DENVER, COLORADO

Mr. Walter C. Smith
Coolidge
Arizona

NOV 1 3 1962

Re: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Pinal County, Arizona
Contract Idm-E428

Dear Mr. Smith:

Enclosed is a self-explanatory letter of today to Magma King Manganese Mining Co. under the subject contract.

This correspondence relates to the Owner's Consent to Lien signed by you on October 6, 1952, for yourself and as attorney-in-fact for other landowners, under the Defense Minerals Exploration Administration program which has been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George Fumich, Jr.

Director

Enclosure
WRGriswold/mm
11-9-62
cc: Director's reading file
Region III (2)
Docket
Code 500

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
NOV 16 1962
REGION III
DENVER, COLORADO

NOV 13 1962

Mr. Frank H. Allen
Mrs. Gladys Allen
775 West Toledo Street
Chandler, Arizona

Re: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Pinal County, Arizona
Contract Idm-E428

Dear Mr. and Mrs. Allen:

Enclosed is a self-explanatory letter of today to Magma King Manganese Mining Co. under the subject contract.

This correspondence relates to the Owner's Consent to Lien signed by you on October 6, 1952, under the Defense Minerals Exploration Administration program which has been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George Fumich, Jr.

Director

Enclosure

WRGriswold/mm
11-8-62
cc: Director's Reading File
Docket
Region III
Code 500

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
NOV 16 1962
REGION III
DENVER, COLORADO

NOV 13 1962

Mr. Frank H. Allen
Mrs. Gladys Allen
775 West Toledo Street
Chandler, Arizona

Re: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Co.
Ajax Lead-Zinc Mine
Pinal County, Arizona
Contract Idm-E428

Dear Mr. and Mrs. Allen:

Enclosed is a self-explanatory letter of today to Magma King Manganese Mining Co. under the subject contract.

This correspondence relates to the Owner's Consent to Lien signed by you on October 6, 1952, under the Defense Minerals Exploration Administration program which has been succeeded by the Office of Minerals Exploration program.

Sincerely yours,

George Fumich, Jr.

Director

Enclosure

WRGriswold/mm
11-8-62
cc: Director's Reading File
Docket
✓Region III
Code 500

Building 20 - Federal Center
Denver 25, Colorado

October 23, 1962

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OMK
Washington 25, D. C.

From: T. W. Romelo, Mining Engineer

Subject: DMEA-2603 (Lead-Zinc)
Contract IDm-2028
Magna King Manganese Mining Co.
(Ajax Mine)
Pinal County, Arizona
FINAL INSPECTION OF CERTIFIED PROJECT

A final inspection of the subject property was made by me October 8, 1962. Information obtained during this inspection and previous inspections indicates that no ore has been produced from the property since October 23, 1952, the starting date of the Royalty Payment Agreement. My findings on October 8, 1962 also indicate that no ore could be produced from the property by October 23, 1962, the termination date of the Royalty Payment Agreement. Therefore, it is recommended that this account be closed.

Detailed information obtained during the final inspection follows. A "No Lien Notice" is posted on Ajax shaft headframe. It states that Roy V. Waughtel acquired the property from the owners by a Bond and Lease Agreement dated June 16, 1962. The owners of the property were listed as Walter Smith, Theodore Holmes Smith, Frank Allen and Gladys Allen. No one was on the property, and there was no equipment of any kind in the shaft area. However, new roads had been built to the mine and to several small mine dumps located within a radius of four or five miles of the Ajax claims. At about 300 yards south of the Ajax shaft, foundations for a mill had been completed, ore bins had been erected, and water storage dams had been built.

Mr. Roy V. Waughtel, lessee, who was contacted at a near-by mining property, furnished information concerning the Lease and Option

agreement and the work done on the Ajax property. The agreement did not provide for royalty payments to the Government on any ore produced to October 23, 1962, because the owner had not informed him that such a lien existed. The work on the Ajax and adjoining claims was started in January 1962, and stopped for financial reasons during June 1962. Also, that the mill will be completed and mining and milling operations will be started in 1963, if the project can be refinanced.

Mr. Connors in a letter dated September 17, 1962 to Mr. Frank H. Allen, one of the owners of the Ajax property, requested information concerning any recent production and any change in ownership of the property. Mr. Allen's wife told me over the telephone in Chandler, Arizona, October 10, 1962 that Mr. Connors' letter had been received, and that her husband's reply would be made without further delay. A copy of Mr. Smith's letter is attached.

Original signed by

T. M. Romslo

Attachment

cc Royalty Corres Idm-E428
Chron
TMR/lm

Contract

October 10, 1962

OME
DEPARTMENT OF THE INTERIOR
OCT 12 1962
REGION III
DENVER, COLORADO

United States Dept.
of the Interior
Bldg. 20 Federal Center
Denver 25, Colorado

Gentlemen:

Mr. Pomroy's address is 581 North Colorado Street Chandler, Arizona. Phone number 963-3183.

I am not familair with the captioned property. I own half interest in the Ajax, Ajax 1 and Raven. There has been no production of ore from the three mines that I know of. The property is not in operation at this time. Mr. Roy V. Waughtell of Florence Junction, Arizona has a lease and option to purchase. There has been no money paid to me.

Yours truly,

Frank H. Allen

Frank H. Allen
775 West Toledo Street
Chandler, Arizona

Re: your letter of Sept 17, 1962 to Mr. Allen
DMEA 2603 (Lead-Zinc)
Contract Idm-E 428
Magma King Manganese Mining Co.
(Ajax Mine)
Pinal County, Ariz.

Building 20 - Federal Center
Denver 25, Colorado

September 17, 1962

Mr. Frank H. Allen
775 West Toledo
Chandler, Arizona

Re: DMEA-2603 (Lead-Zinc)
Contract Idm-2428
Magna King Manganese Mining Company
(Ajax Mine
Pinal County, Arizona

Dear Mr. Allen:

We have been unable to make any contact with Mr. R. J. Pomeroy or the Magna King Manganese Mining Company regarding the capticned contract.

Could you furnish us the present address of Mr. Pomeroy?

Also, we would like to know if there has been any production of ore from the capticned property since January 1960?

Is the property now in operation?

Have there been any changes in ownership, lease, or sublease?

Any information regarding the property will be greatly appreciated.

Yours very truly,

Original signed by

Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Idm-2428
Chron
HMC/lm

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
SEP 1 1962
SEP 1 1962 REGION III
DENVER, COLORADO

Memorandum

To: Acting Field Officer, Region III

From: ACTING Chief, Division of Field Operations

Subject: DMEA-2603 (Lead-Zinc)
Magma King Manganese Mining Company
Ajax Mine
Pinal County, Arizona
Contract Idm-E428

We have been unable to make any contact with the Operator under the referenced project or to effect delivery of our Form MME 63. We infer that your office met with the same lack of success. Do you have any recent information? If not, possibly the Arizona State mine inspector might be kind enough to advise you if there has been any recent activity on the property. Possibly one of the landowners might be of help.

W R Grunsky

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
WASHINGTON 25, D. C.

OME
DEPARTMENT OF THE INTERIOR
SEP 12
DENVER COLORADO

Memorandum

To: Acting Field Officer, Region III

From: ACTING Chief, Division of Field Operations

Subject: DMRA-2603 (Lead-Zinc)
Magma King Manganese Mining Company
Ajax Mine
Pinal County, Arizona
Contract Idm-E428

We have been unable to make any contact with the Operator under the referenced project or to effect delivery of our Form MME 63. We infer that your office met with the same lack of success. Do you have any recent information? If not, possibly the Arizona State mine inspector might be kind enough to advise you if there has been any recent activity on the property. Possibly one of the landowners might be of help.

W. R. Griswold

Ame
TMR

OME
DEPARTMENT OF THE INTERIOR
MAY 25 1960
REGION III
DENVER, COLORADO

Chandler Ariz
May 19-1960.

Dear Sir:

I am not sure if Mr. Pomeroy sold any ore from the Ajax mine or not. However he did not pay me any Royalty. I did hear that he had sold stock in the mine.

Here is where he can be contacted I believe.

Pomeroy Development Co.
421 East 4th ave.
Mesa, Arizona.

Yours truly.
Frank H. Allen

Anc

TMR

OME
DEPARTMENT OF THE INTERIOR

MAY 25 1960
REGION III
DENVER, COLORADO

Building 20 - Federal Center
Denver 25, Colorado
January 29, 1960

Mr. R. J. Pomeroy
Magma King Manganese Mining Company
547 North Arizona Avenue
Chandler, Arizona

Re: Docket No. DMEA 2603 (Lead-Zinc)
Contract No. Idm-E428
(Ajax mine)
Pinal County, Arizona

Dear Mr. Pomeroy:

In reference to Item 4(c) of Amendment No. 7 to the captioned contract wherein the Government's right to a percentage royalty on any minerals mined or produced from the land is established, please indicate your answer to the following questions and return one copy of the questionnaire immediately to this office.

Very truly yours,

original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

1. Has the property been sub-leased or any change made in ownership other than this office has been notified in writing? Yes___ No___. If yes, please furnish details of the transaction on a separate sheet and include a true or signed copy of any instrument that was executed in conjunction with the matter.

2. Has there been production from the land subordinated under the referenced contract since January 1, 1959? Yes___ No Ans. If yes, and shipments made, who was the purchaser? _____

3. Is any of the following material stockpiled? Yes___ No Ans.

(a) Ore, Tons _____ Estimated grade _____
(b) Concentrates, lbs. _____ Estimated grade _____
(c) Low grade ore, tons _____ Estimated grade _____
Place stockpiled _____

Signed Frank H. Allen

Title _____ Date 19 May

TMR:ltm cc: Chron. Op. Comm. Roy. Corres. E428 Chron.

Building 20 - Federal Center
Denver 25, Colorado

May 11, 1960

Mr. Frank H. Allen
775 West Toledo
Chandler, Arizona

Re: DMEA Docket DMEA-2603
Contract Idm-E428 (Lead-Zinc)
(Ajax Mine)
Pinal County, Arizona

Dear Mr. Allen:

Attached are two prints of a questionnaire which was sent by Certified Mail to Mr. Pomeroy and returned by the Postal Department marked "unclaimed."

In order that our records may be brought up-to-date, we are asking you as one of the owners of the property to complete and immediately return to this office one of the two questionnaires. A self-addressed envelope is enclosed for that purpose.

Very truly yours,

Hugh M. Connors
Acting Field Officer, OME
Region III

Enclosure - 2

cc: Royalty Corres.
Chron

TMRomslo/mf

Building 20 - Federal Center
Denver 25, Colorado

April 12, 1960

CERTIFIED MAIL

Mr. R. J. Pomeroy
Magma King Manganese Mining Co.
547 North Arizona Avenue
Chandler, Arizona

Re: Docket No. DMEA 2603 (Lead-zinc)
Contract No. Idm-E428
(Ajax mine)
Pinal County, Arizona

Dear Mr. Pomeroy:

It is a requirement of the contract that you furnish information such as that requested in the questionnaire mailed to you January 20, 1960.

In event you did not receive the questionnaire or have mislaid it, you will be expected to complete and immediately return to this office one of the two attached prints of the questionnaire.

Yours very truly,

Original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

Rtd 5/2/60 by P.O. marked unclaimed.

Enclosure

TMR/bjo

cc: Chmn. Op. Comm. (2)
Royalty file Idm-E428
Chron.

Building 20 - Federal Center
Denver 25, Colorado
January 29, 1960

Mr. R. J. Pomeroy
Magna King Manganese Mining Company
547 North Arizona Avenue
Chandler, Arizona

Re: Docket No. DMEA 2603 (Lead-Zinc)
Contract No. Idm-E428
(Ajax mine)
Pinal County, Arizona

Dear Mr. Pomeroy:

In reference to Item 4(c) of Amendment No. 7 to the captioned contract wherein the Government's right to a percentage royalty on any minerals mined or produced from the land is established, please indicate your answer to the following questions and return one copy of the questionnaire immediately to this office.

Very truly yours,

Original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

1. Has the property been sub-leased or any change made in ownership other than this office has been notified in writing? Yes___ No___. If yes, please furnish details of the transaction on a separate sheet and include a true or signed copy of any instrument that was executed in conjunction with the matter.

2. Has there been production from the land subordinated under the referenced contract since January 1, 1959? Yes___ No___. If yes, and shipments made, who was the purchaser?_____

3. Is any of the following material stockpiled? Yes___ No___.

(a) Ore, Tons_____ Estimated grade_____
(b) Concentrates, lbs._____ Estimated grade_____
(c) Low grade ore, tons_____ Estimated grade_____
Place stockpiled_____

Signed_____

Title_____ Date_____

TMR:ltm cc: Chmn. Op. Comm. Roy. Corres. E428 Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado

June 29, 1959

Memorandum

TO: J. W. Townsend, Executive Officer, OME Field Team, Region III

From: Donald T. Finch, OME Auditor, Region III

Subject: Docket No. DMEA 2603 (Lead-Zinc) Contract No. Idm-E428, Magma King Manganese Mining Company (Ajax Mine) Pinal County, Arizona

Enclosed is your copy of Report of Royalty Review covering subject contract for the period October 23, 1952 to June 10, 1959

Donald T. Finch

Donald T. Finch

Enclosure

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Executive Officer, OME Field Team, Region III, Denver, Colorado pertaining to Contract Idm-Eh8, Docket No. IMEA 2605, dated October 23, 1952, with

Magma King Manganese Mining Company
547 North Arizona Avenue
Chandler, Arizona

for the purpose of determining the amount of royalties due the U. S. Government on the sales of Lead-Zinc, from property referred to as Ajax Mine, located in Pinal County, Arizona, during the period October 23, 1952 to June 10, 1959.

Pseudo Certification was effected by Amendment No. 7 to the contract and accordingly royalty is payable on all production from the land described in Article 2 of the contract for a maximum period of 10 years from the date of the contract. A Report of Review in lieu of Final Cost Audit indicated accepted costs under the exploration contract amounting to $6,790.00, with the Government's contribution on a 50 percent basis being $3,395.00.

No royalty has been paid to the Government to date in connection with this contract.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(a) According to the Field Team's Semi-Annual Report of certified project for the period July 1, 1955 to January 1, 1956, operation ceased about March 31, 1953; no ore has been shipped since October 23, 1952, (The date of the exploration contract). Subsequent semi-annual reports of Field Team for the period January 1, 1956 to December 31, 1958, indicate property inactive and no operations or ore shipments are anticipated in 1959.

(b) The administrative costs to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible royalty which might be disclosed.

June 18, 1959

Donald T. Finch
Donald T. Finch
OME Auditor

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: July 31, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1956 through June 30, 1956
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 423 Wayne King Manganese Mining Company (Ajax Mine), Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, and Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
WMT/vj

cc: Semiannual Report File E 423
Royalty File E423
W. R. Storms
S. W. Harshman
Chron.

Semi-Annual Report of Certified Projects

Reporting Period	January 1, to June 30, 1956
Docket and Contract Number	Docket DMA-2603, Contract 18-[illegible]
Operator	Magma King Manganese Mining Co.
Commodity	Lead-Zinc
Mine Name	Ajax Mine
County and State	Pinal County, Ariz.

Date of Examination for this Report July 9, 1956

Change in status since previous report:

Data - None

Activities - Confined to road repairs. The road work, according to R. W. Nicholas, watchman, was completed late in June under the supervision of R. J. Pengrey, President of the Magma King Manganese Co.

M. Romslo

I. H. Romslo, Mining Engineer
U. S. Bureau of Mines

M. M. Kramer (Orig. + 8)
DMA-2603
Cert. File
DS

Romslo:rr

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
Date Rec'd.
JUN 15 1956
BUREAU OF MINES
Denver, Colorado

June 13, 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team

From : Superintendent, Southwest Experiment Station

Subject : Docket DMEA-2603 (Lead-Zinc), Contract Idm-E428, Magma King Manganese Mining Co. (Ajax Mine), Pinal County, Ariz.

In regard to your memorandum of May 10, concerning the lease of the above company, we wrote to one of the owners, Mr. W. C. Smith, on May 15 and asked him whether or not Magma King's lease had been cancelled, but we never heard from Smith. Therefore, on June 4, we wrote to Mr. Frank H. Allen, another of the owners, and asked him the same question. Today we received the attached answer from Allen.

Walter R. Storms

Walter R. Storms

CC W. M. Traver
DMEA-2603
DF

WRStorms:frj

ROYALTY FILE-E 428

DMEA
Date Rec'd.
JUN 15 1956
BUREAU OF MINES
Denver, Colorado

Chandler, Ariz.
June 11, 1956

Dear Mr. Storms:

Regarding the Ajax mine southwest of Superior, I am one of the owners.

Ralph Pomeroy's contract was broken by not paying the taxes on the mine, but I have never served any notice on him.

In the contract we have to give him three months to clear the property.

If at any time you are going to Phoenix I would appreciate having a talk with you about the mines. I am only home in the evenings. My telephone No. is YO-3-3740.

Sincerely yours,

/s/ Frank Allen

C O P Y

ROYALTY FILE-E 428

M+M

DMEA
Date Rec'd
JUN 6 1956
BUREAU OF MINES
Denver, Colorado

June 4, 1956

Mr. Frank H. Allen
775 West Toledo
Chandler, Ariz.

Re: DMEA Docket DMEA-2603
Contract Ldm-2428, Ajax
Lead-Zinc Mine, Pinal
County, Ariz.

My dear Mr. Allen:

Regarding the Ajax lead-zinc mine in the Mineral Hill Mining District southwest of Superior, I believe you are one of the owners. As you know, the Magna King Manganese Mining Co., Ralph Pomeroy, president, which is or was the lessee of this property, recently obtained Government aid to explore this deposit, but terminated the DMEA exploration contract before completion of the work.

In order that our Washington office can keep its records up-to-date, will you tell me if the Magna King Manganese Mining Co. still has a lease on your property? Last January when I talked to Mr. W. C. Smith, he seemed to think that the lease would be cancelled.

I wrote to Mr. Smith on May 15, but have never heard from him regarding this lease.

Sincerely yours,

Signed by Walter R. Storms

Walter R. Storms
Superintendent
Southwest Experiment Station

CC W. M. Traver
DMEA-2603
DF

WRStorms:frj

ROYALTY FILE 428

DMEA
Date Rec'd.
MAY 17 1956
BUREAU OF MINES
Denver, Colorado

May 15, 1956

Re: Docket DMEA-2603, Contract
Ida-E428, Magna King Manganese
Mining Co., Ajax Lead-Zinc
Mine, Pinal County, Ariz.

Mr. W. C. Smith
P. O. Box 546
Coolidge, Ariz.

My dear Mr. Smith:

In January, I talked to you about your Ajax lead-zinc mine in the Mineral Hill Mining District of Pinal County, Arizona and you told me that the Magna King Manganese Mining Company, Ralph Pomeroy, president, still had a lease on your property, but that this lease might be cancelled because no work was being done by the lessee. In order to keep our DMEA records up to date, will you please let me know whether or not this lease still is held by the Magna King Manganese Mining Company?

Sincerely yours,

Signed by Walter R. Storms

Walter R. Storms
Superintendent
Southwest Experiment Station

CC W. M. Traver
DMEA-2603
DF

WRStorms:frj

Royalty File E428

Berk

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

224 New Customhouse
Denver 2, Colorado

Date: May 24, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, Docket DMEA 2603, (Lead-Zinc), Contract Idm-2428, Magma King Manganese Mining Company (Ajax Lead-Zinc mine), Pinal County, Arizona

Period: March, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
			(NONE)			

Totals:

Past Due Royalties Collected	None
Total Dry Tons (Ore or Cons.) Shipped to Date	None
Expiration Date of Royalty Repayment	October 23, 1962
Amount of Government Participation	$3,395.00
Total Royalty Payments to Date	None
Percent of Loan Repayment	----

for W. M. Traver

vj

cc Royalty File E 428 w/Settlement Sheets
Monthly Royalty Payment File
W. R. Storms
Chron.

224 New Customhouse
Denver 2, Colorado

May 10, 1956

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2603 (Lead-Zinc) Contract Idm-E428, Magma King Manganese Mining Co. (Ajax mine) Pinal County, Arizona

Reference is made to the Semiannual Report for the period July 1, 1955 through December 31, 1955 for Contract Idm-E428. T. M. Romslo states that Magma King Manganese Mining Company's lease to the Ajax property probably would be cancelled because of lack of work on the property. Please have an engineer from your office check to see if this lease was actually cancelled. This type of information is of value to us in keeping our records of the ownership status of DMEA properties current.

This is not a priority request. It can be handled the next time you have an engineer in the vicinity of the Ajax mine.

W. M. Traver

RDB:jy

cc: Royalty File E428
Corresp. File E428
Sec. Op. Comm. (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: February 24, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1955 through December 31, 1955.
DMEA Docket 2603 (Lead-Zinc)
Contract Idm-E 428 , Magma King Manganese Company,
Ajax Lead-Zinc Mine, Pinal County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office. and Memorandum 29.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

vj

cc: Semiannual Report File E 428
Royalty File E428
W. R. Storms
E. N. Harshman
~~XXXXXX~~
J. N. Faick
Chron.

DMEA
Date Rec'd.

JAN 30 1956

BUREAU OF MINES
Denver, Colorado

Box 4097
Tucson 5, Arizona

January 27, 1956

Memorandum

To : W. M. Trumpy, Executive Officer, DMEA Field Team, Region XIV

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report of Certified Project, July 1 - December 31, 1955, Docket DMEA-2603, Contract Dm-2603, Hogan King Manganese Mining Co.'s Ajax Lead-Zinc Mine, Pinal County, Ariz.

Enclosed are original and 2 copies of the above report by T. M. Rumble of the Bureau of Mines.

Walter R. Storms

Walter R. Storms

CC W. M. Trumpy
DMEA-2603
Cert. File
RF

WRStorms:fr:j

Semi-Annual Report of Certified Projects

Reporting period	July 1, 1955 to January 1, 1956
Docket and Contract Number	DMEA-2603, Dm-E428
Operator	Magma King Manganese Mining Co.
Commodity	Lead-Zinc
Mine Name	Ajax
County and State	Pinal County, Arizona

Date of Contract	October 23, 1952
Date of certification	June 30, 1954
Expiration date of Royalty Payments	October 23, 1962
Date of Examination of this Report	January 26, 1956

Total Amount of Contract	$23,100.00
Total Expenditures under Contract	$6,790.00
Amount of Government Participation at 50%	$3,395.00

Royalty Payments this Period	$0.00
Previous Royalty Payments	$0.00
Total Royalty Payments to Date	$0.00
% Loan Repayment completed	$0.00

Amount of Royalty Due	None
Royalty Remarks	"

Original Estimate of Reserves
(from Final Engr. Report. Final Geol. Report in preparation.)

No measurable reserves. Approximately 10,000 tons of 10 percent combined lead and zinc indicated in old workings and principal target that was not reached by project. A few hundred tons containing 2.2 percent zinc, 0.73 percent lead and 0.22 percent copper was penetrated by drift driven under subject contract. Inferred reserves remain at a few tens of thousand tons containing about 1 percent lead and 8 percent zinc.

Increase of Reserves by work performed subsequent to exploration or termination of contract:	None
Revised estimate of Reserves	—
Production this Period	None
Amount of Previous Production (since date of Contract)	None
Total DMEA Production to Date	None
% of Revised Reserves Mined	0.0

Other Remarks. During my visit to the mine I found the last half mile of road was still impassible by automobile. No one was at the mine and all equipment had been removed from the surface buildings. In talking to Mr. R. V. Blakeley, a prospector who resides at the Ajax camp at about 3/4 mile from the mine, I obtained the

following information. About a year ago, R. J. Pomeroy, president of Subject company, gave Mr. Nicholas permission to occupy one of the houses. As a result, Mr. Nicholas has acted as unofficial caretaker of the property. Pomeroy, who presently is in Utah or Colorado, last visited the mine in October 1955. He was accompanied by 2 geologists who examined the property and presented unfavorable findings to their client.

At Florence, county seat of Pinal County, I learned that most of the 1955 taxes on the patented claims had been paid by the owners. Mr. W. C. Smith, one of the owners, was contacted via telephone by W. R. Stearns. Smith said the Magma King Manganese Mining Co. lease on Ajax is still in force but that the lease probably would be cancelled because of lack of work on the property.

T. M. Romalo
Mining Engineer
Southwest Experiment Station

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM Walter R. Storms

BUREAU of Mines

CHG. APPROPRIATION GSA teletype

Tucson 5, Arizona, January 26, 1955

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Phoned 1.20 p.m. frj

DMEA
Date Rec'd.
JAN 30 1956
BUREAU OF MINES
Denver, Colorado

Mr. W. M. Traver
U. S. Bureau of Mines
224 New Customhouse
Denver, Colorado

Retel Docket DMEA 2603, Contract Idm-E428, Magma King Manganese Mining Co., Romslo visited Ajax mine this morning but no work being done. Ralph Pomeroy evidently is in Utah or Colorado. Magma King lease on Ajax still in force, but W. C. Smith, one of owners, told me that it probably would be cancelled because of lack of work on property.

Walter R. Storms

CC Confirmation
DMEA-2603
DF

WRStorms:frj

Royalty File E 428
Berk

Contract expires ~~October 23, 1953.~~

July 23, 1954

Short Form Contract

400 ft. Drifting at $35.00 per ft.
200 ft. Raising at $33.00 per ft.
500 ft. DD at $5.00 per ft.

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2603

COMMODITY Lead-Zinc

Idm-E428

547 North Arizona Ave.
Chandler, Ariz.

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 23rd day of October, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Magma King Manganese Mining Co., an Arizona Corporation
532 Security Bldg.
Phoenix, Arizona

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Pinal, described as follows:[3] Ajax and Ajax No. 1, Survey No. 3919

the Operator represents and undertakes:[4]

(a) [redacted] only to the fo[redacted] of which the subordination agreement of the holder is attached:

(b) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Lead & Zinc

Amend #3 - 18 months

in or upon the described land; and shall bring the project to completion within a period of 12 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay fifty (50) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $11,550, which is 50 percent of $23,100, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

MAGMA KING MANGANESE MINING CO.
(Operator)

By Ralph J. Pomeroy

By W. H. King
Executive Officer, DMEA
Field Ops., Region IV

I, Lillie Fraser, certify that I am the Assistant secretary of the corporation named as Operator herein; that Ralph J. Pomeroy President and Director, who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Lillie Fraser [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Arizona, County of Pinal, described as follows:1/

Ajax and Ajax No. 1 Mining Claims U. S. Survey No. 3910

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Vegas King Tungsten Mining Co.

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 11,550.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 6th day of October, 195 5.

Rae L. Fraser

Frank H. Allen [Seal] Lillie Smith Atty in fact

Gladys Allen [Seal] Andrew Hemes Smith

Lillie Smith [Seal] Lillie Smith Atty in fact

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

EXHIBIT A

Description of the Work

Drift 400 feet northerly from the present north breast of the 176-foot level.

Drive 200 feet of raises at favorable sites disclosed by the drifting. The locations of the raises will be determined after part or all of the drifting is completed and must be acceptable to the DMEA representative.

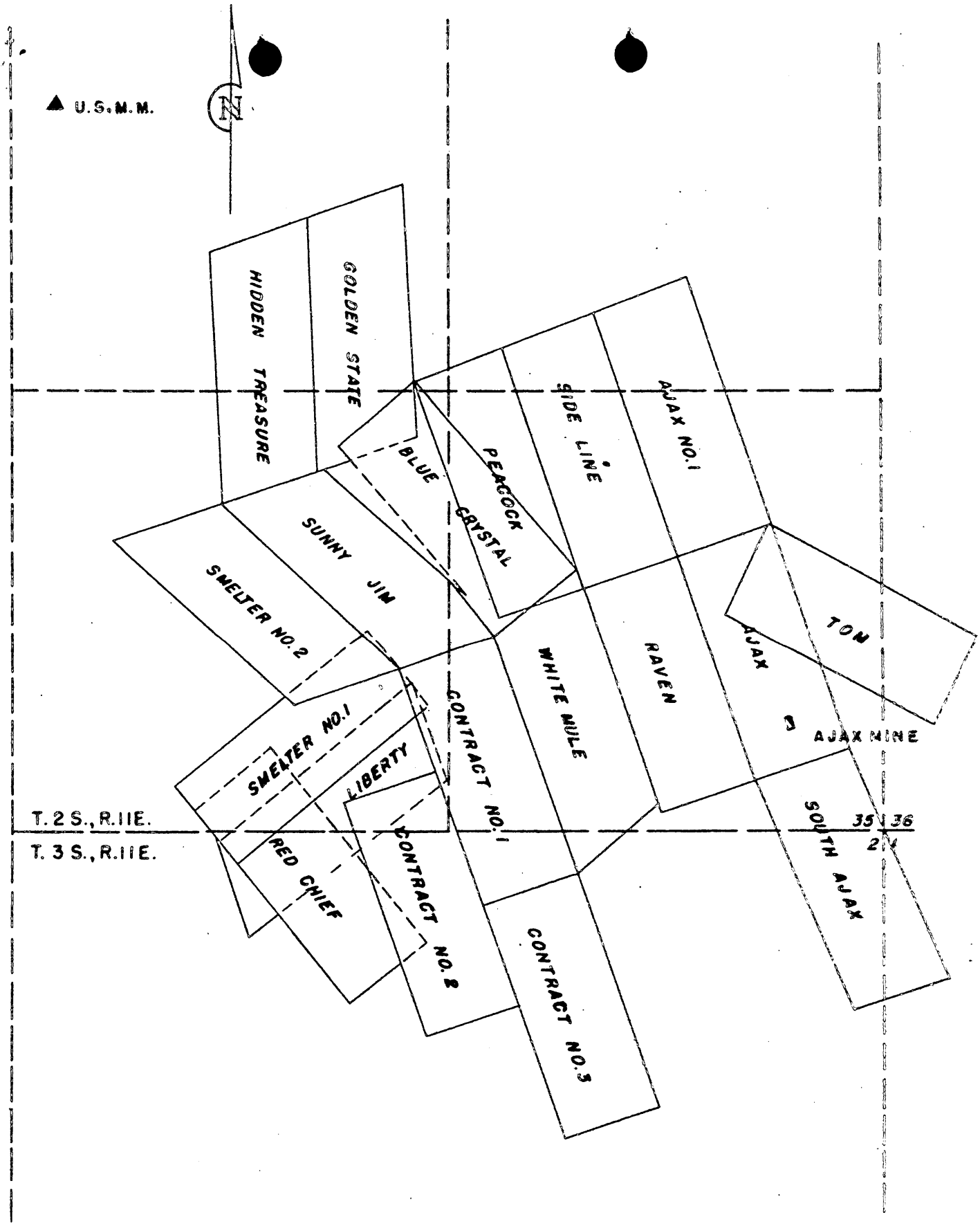
Diamond core drill a maximum of 500 feet of hole at locations to be determined after part or all of the drifting is completed. The locations, directions, inclinations and depths of the drill holes must be acceptable to the DMEA representative. A certified drill log must accompany each Monthly Progress Report. Reimbursement will be made only for diamond drill holes completed to the satisfaction of the DMEA representative. Drill cores must be properly stored in acceptable core boxes. Cores must be split and one-half retained for the use of the DMEA.

All the preliminary work will be completed by the operator at no expense to the Government.

The location of the proposed work is shown on Figures 2 and 3 which are attached and made a part of this exhibit.

Estimated Costs of the Project

Drifting, 400 feet @ $35.00 per foot	$14,000.00
Raising, 200 feet @ $33.00 per foot	6,600.00
Diamond Drilling, 500 feet @ $5.00 per foot	2,500.00
Total Cost of Project -	$23,100.00
Government participation at 50%	$11,550.00



SCALE: 1" = 800' (APPROX.)

DMEA 2603

CLAIM MAP

Fig. 2 MAGMA KING MANGANESE CO.'S AJAX MINE, PINAL CO., ARIZ.

Field Team copy

DMEA
Date Rec'd
AUG 22 1955
BUREAU OF MINES
Denver, Colorado

U. S. BUREAU OF MINES
MINING DIVISION
AUG 10 1954
TUCSON, ARIZONA

EXPLORATION PROJECT CONTRACT
MAGMA KING MANGANESE MINING COMPANY
DOCKET NO. DMEA-2603

AMENDMENT NO. 7

It is agreed this 30th day of June, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Magma King Manganese Mining Company, hereinafter called the "Operator," that Exploration Project Contract No. Idm-E428 (Docket No. DMEA-2603), dated October 23, 1952, as amended, hereinafter called the "Contract," is further amended effective May 1, 1953, as follows:

1. a. Work under the Contract has been suspended since May 1, 1953, under the provisions of Amendments Nos. 1 through 6, the latter amendment authorizing continuation of the suspension of work to June 1, 1954. Continuation of the suspension of work is further authorized to not later than September 1, 1954.

b. No costs incurred by the Operator during the suspension of work beginning May 1, 1953, shall be allowable for contribution by the Government, and the Government shall not contribute to any costs of rehabilitation or repair which, in its opinion, would not have occurred if there had been no suspension of work.

c. The Operator, at its own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work.

2. Annex I attached to Amendment No. 5 is cancelled, and Annex II attached hereto and made a part hereof is substituted for Article 6 of the Contract form.

3. The time fixed for the completion of the work in Article 3 of the Contract form is changed from "21 months," as provided in Amendment No. 5, to "24 months."

4. It is of the essence of this Contract that work be resumed not later than September 1, 1954, and if work is not so resumed in the manner required by the Contract, the following provisions shall apply:

No. 7

a. Any work or operations prosecuted or costs incurred by the Operator beginning with September 1, 1954, shall be for the sole account of the Operator without contribution by the Government.

b. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

c. The total net amount contributed by the Government shall be repayable in the form of a percentage royalty on any minerals mined or produced from the land described in Article 2 of the Contract, in the manner and amount provided in the Contract, as amended herein, certification of discovery or development being hereby waived.

d. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this amendment.

This agreement shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Meadors
Administrator, Defense Minerals
Exploration Administration

MAGMA KING MANGANESE MINING COMPANY

By Ralph Jameson

EXPLORATION PROJECT CONTRACT
MAGMA KING MANGANESE MINING COMPANY
DOCKET NO. DMEA-2603

ANNEX II

The following provisions are in lieu of Article 6 :

Repayment by Operator.--a. Certification.--If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Royalty on production.--The Operator, as principal, if the Operator is the producer, or as surety, if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

c. Basis for computation.--The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight paid by the buyer to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the

Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the raw ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

d. Unsold production.--If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

e. Percentages of royalty.--The percentages of the Government's royalty shall be as follows:

> One and one-half ($1\frac{1}{2}$) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half ($\frac{1}{2}$) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.
>
> (For instance: the royalty on an amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) percent; on an amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

f. Lien for payment.--To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

g. Notice to purchasers.--The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

h. No obligation to produce.--Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

i. Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

58694

No. 6

AMENDMENT OF CONTRACT: No. Idm-E423

Contract Docket No. DMEA 2603, dated October 23, 1952, between the United States of America and Magna King Manganese Mining Co., is hereby amended as follows, effective May 1, 1954:

> Referring to Amendment No. 5, dated February 17, 1954, first paragraph, which amended Amendment No. 4 changing the date of "February 1, 1954" to read "May 1, 1954", said Amendment No. 5 and Amendment No. 4 as amended are further amended to change the date of "May 1, 1954" to read "June 1, 1954".

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated MAY 12 1954

MAGNA KING MANGANESE MINING CO.

By Ralph J. Pomeroy
Ralph J. Pomeroy, President

UNITED STATES OF AMERICA

By W. H. King
W. H. King, Executive Officer
DMEA Field Team, Region IV

Seal

No. 6

No. 5

AMENDMENT OF CONTRACT: No. Idm-1428

Contract Docket No. DMA 2603, dated October 23, 1952, between the United States of America and Page Ling Manganese Mining Co., is hereby amended as follows, effective February 1, 1954:

Referring to Amendment No. 4, dated November 24, 1953, which in turn amended Amendment No. 3, dated June 26, 1953, further referring to Amendment No. 4, change the ending date of "February 1, 1954" to read "~~May 1, 1954~~".

Referring to "Article 3. Exploration Project" of Exploration Project Contract Form MM-200(A) (February 1952) as amended by Amendment No. 3, dated June 26, 1953, following the words "and shall bring the project to completion within a period of", delete "18 months" and in lieu thereof substitute "twenty-one (21) months".

Referring to "Article 6. Payment by Operator" of Exploration Project Contract Form MM-200(A) (February 1952), the provisions under said "Article 6" are deleted and in lieu thereof the provisions of Annex I, attached hereto and made a part hereof, are substituted.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated FEB 17 1954

PAGE KING MANGANESE MINING CO.

By Ralph J. Pomeroy, President

UNITED STATES OF AMERICA

By W. H. King, Executive Officer
DMA Field Team, Region IV

ABA

No. 5

The following provisions are in lieu of Article 6:

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe briefly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by this contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts, plus one-half ($\frac{1}{2}$) per cent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) per cent.)

c. Definitions.--As here used, "net smelter returns","net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce. This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

AMENDMENT TO CONTRACT No. IDM-1.26

Contract Project No. DMA 2603, dated October 23, 1952, between the United States of America and Magna King Manganese Mining Co., is hereby amended as follows, effective October 1, 1953:

> Referring to Amendment No. 3, dated June 26, 1953, which amended "Article 3. Exploration project" of Exploration Project Contract Form AF-200(A) and authorized a recess of operation under Contract IDM-1.26, further referring to said Amendment No. 3, second paragraph, change the date of "October 1, 1953" to read "February 1, 1954."

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum."

Dated November 24, 1953

MAGNA KING MANGANESE MINING CO.

By [signature]
Ralph J. Amaroy

UNITED STATES OF AMERICA

By W. H. King
W. H. King, Executive Officer
DMEA Field Team, Region IV

(SEAL)

No. 3

AMENDMENT OF CONTRACT: No. Idm-2428

Contract Docket No. DMEA-2603, dated October 23, 1952, between the United States of America and Magma King Manganese Mining Co., is hereby amended as follows, effective June 1, 1953.

> Referring to "Article 3. Exploration Project" of Exploration Project Contract Form MF-200(A), delete "12 months" and in lieu thereof insert "18 months".
>
> Furthermore, execution of this Amendment constitutes authority to recess operations under Contract Idm-2428. The operator hereby agrees to resume operations on or before October 1, 1953, contingent on the following conditions:
>
> 1. The operator hereby releases and agrees to save harmless the Government from all claims and demands arising out of conditions or circumstances that may develop at the site of the DMEA project during the period operations are recessed.
>
> 2. The operator agrees to preserve and protect the Government's interest in the work performed to date from any cause resulting from the recess of operations, without cost to the DMEA project.
>
> 3. Interim payment for the percentage of the Government's participation in the costs of work performed during the month of March 1953 will be held in deferment pending receipt of the first Form MF-104, Operator's Monthly Report and Voucher, after resumption of normal operations under the contract.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated June 26 1953

MAGMA KING MANGANESE MINING CO.

By Ralph Pomeroy

(Seal)

UNITED STATES OF AMERICA

By W. H. King

W.H. King, Executive Officer,
DMEA Field Team, Region IV

No. 3

No. 2

AMENDMENT OF CONTRACT: No. Idm-E428

Contract Docket No. DMEA 2603, dated October 23, 1952, between the United States of America and Magma King Manganese Mining Co., is hereby amended as follows, effective May 1, 1953:

> Execution of this document verifies the authorization to recess work under the contract for a period of one month; further, said authority for recess is given and accepted under the conditions that work will be resumed on or before June 1, 1953. Interim payment for the percentage of Government participation in the costs of work performed during the month of March 1953 will be held in deferment pending receipt of the Form MF-104 Operator's Monthly Report and Voucher in claim for reimbursement for work accomplished during the month of June 1953.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated MAY 20 1953 1953

MAGMA KING MANGANESE MINING CO.

By Ralph J. Pomeroy
Ralph J. Pomeroy, President and Director

UNITED STATES OF AMERICA

By W. H. King
W.H. King, Executive Officer, DMEA Field Team, Region IV

Seal

No. 2

No. 1

AMENDMENT OF CONTRACT: No. Iam-2428

Contract Docket No. DMEA 2603, dated October 23, 1952, between the United States of America and Magma King Manganese Mining Company is hereby amended as follows, effective April 1, 1953:

> Execution of this document verified the authority to recess work under the contract for a period of 30 (thirty) days, further, said authority is given and accepted under the conditions that work will be resumed on or before May 1, 1953. Interim payments for the percentage of Government participation in the costs of the project for the month of March 1953 will be held in deferment pending receipt of advice that work has been resumed.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum."

Dated: APR 17 1953

Magma King Manganese Mining Co.

By Ralph J. Pembroy
Ralph J. Pembroy, President and Director

UNITED STATES OF AMERICA

By W. H. King
W. H. King, Executive Officer
DMEA Field Team, Region IV

No. 1

224 New Customhouse
Denver 2, Colorado

February 6, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2605 (Lead-Zinc), Contract I4m-5436, Magma King Manganese Mining Company, Ajax Lead-Zinc mine, Pinal County, Arizona

In conjunction with the Field Team's final report of January 26, 1956, pertaining to work completed under the subject contract, we are enclosing the original and three copies of final geologic report by the U. S. Geological Survey.

W. M. Traver

W. M. Traver

Enclosures

JWT:prl
cc: Harshman) w/copy of geologic report
Storms)
Faick)
Final Report File
Townsend
Chron.

MINERAL DEPOSITS
RECEIVED
FEB 3 1956
U.S.
GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

February 1, 1956

DMEA
Date Rec'd.
FEB 3 1956
BUREAU OF MINES
Denver, Colorado

MEMORANDUM

To: E. N. Harshman

From: John N. Faick

Subject: Final Geological Report, DMEA 2603, Contract Idm-E428, (Lead-Zinc) - Magma King Manganese Mining Company's Ajax Mine, Pinal County, Arizona

Enclosed are the original and 8 copies of the final geological report on the exploration project on the Ajax mine. Unfortunately the project was terminated before completion because the operator failed to do the work provided by the contract. A 194 ft. long drift was completed and this did not modify in any way our understanding of the Ajax deposit. I believe the deposit merits additional exploration; however, it is unlikely that the Ajax will ever make a large mine. The low-grade ore reported along the DMEA drift is encouraging, and might lead to the discovery of minable ore at other places in the vein.

Because of the low-grade ore reported in the DMEA drift, and because available evidence indicates that higher grade ores might exist in the project area, it is recommended that the project be certified as a discovery.

John N. Faick

John N. Faick

JNF:ms

cc. Harshman (8)
Storms

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM III

GEOLOGY

FINAL REPORT

DMEA 2603, Contract Idm-E428

MAGMA KING MANGANESE MINING CO., AJAX MINE

PINAL COUNTY, ARIZONA

(Lead-Zinc)

By
Leonid Bryner
Geologist
U. S. Geological Survey

January 31, 1956

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

FINAL REPORT

DMEA 2603, Contract Idm-E428

MAGMA KING MANGANESE MINING CO., AJAX MINE

PINAL COUNTY, ARIZONA

(Lead-Zinc)

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Fig. 3 - Plan map - veins and workings	Following page 14
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INTRODUCTION

The Ajax mine is in section 35, T. 2 S., R. 11 E., Pinal County, Arizona. It is reached from the town of Superior by traveling 11 miles west on U. S. Highway 60-70, then 9 miles southeast on a graded dirt road.

On July 3, 1952 a DMEA application totaling $59,727 was made by the Magma King Manganese Mining Co. to explore for lead and zinc at the Ajax Mine. On August 25, 26, and 27, 1952, J. N. Faick of the U. S. Geological Survey, and T. M. Romslo of the U. S. Bureau of Mines, examined the property. The examiners recommended DMEA assistance in a revised program totaling $23,100. A contract (Idm-E428) for this amount was granted and exploratory work started on November 14, 1952. Exploration continued through March, 1953. The applicant obtained permission to recess the project during the month of April, 1953. Following further requests from the applicant, this recess period was extended time after time, until on September 1, 1954, failure to renew operations resulted in cancellation of the contract. Amendment No. 7, dated June 30, 1954, providing for cancellation of the contract if work was not resumed by September 1, 1954, also provides for repayment of the government by "a percentage royalty on any minerals mined or produced" from the property, "certification of discovery or development being hereby waived." The final payment due the applicant was not made until November 10, 1955, because Ralph J. Pomeroy, president of the applicant company, did not submit his final report until October, 1955.

The mine was allowed to flood during the recess of exploration. No interim geologic inspections of the mine had been made, and as the mine was never dewatered, a final geologic inspection was not possible.

T. M. Romslo of the U. S. Bureau of Mines, however, examined the workings on April 1, 1953, when the maximum advance under the DMEA contract had been reached. Regarding this inspection, and previous monthly inspections, Romslo states that the narrative reports by Frank L. Metler, superintendent, correctly describe the findings in the exploratory drift that was being driven under the DMEA contract. In view of this fact and the lack of firsthand geologic information, the results of exploration given in the present report are based on Metler's periodic reports to DMEA. Much of the present report is abstracted from Faick's examination report, and the writer consulted with Faick and Romslo. The figure numbers used in Faick's report remain the same. The Ajax Mine, as far as the writer can determine, is not described in the literature.

GEOLOGY

The Ajax mine is in the Mineral Hill Mining District near the head of Cottonwood Creek, a dry wash draining relatively rough mountainous desert terrain between the valleys of the Gila River on the south and Queen Creek on the north. Maximum relief in this area is about 500 feet.

The country rock is a fine-grained, greenish-gray, rather uniform chlorite schist of probable Precambrian age. The schistosity, which is vague and poorly developed, is gently folded into small easterly-trending anticlines and synclines that have dips ranging from 10° to 30° on the flanks.

Within the Mineral Hill district there are many small mines and prospects of which the Ajax appears to be one of the most promising. The mine explores part of a conjugate vein system by means of a 180 foot shaft

inclined westward about 65° and by two drifts (Fig. 5). The upper drift, or 50 level, extends 50 feet north of the shaft and 60 feet south of it. The 176 level before DMEA exploration consisted of a 30 foot crosscut to the vein, with drifts extending about 80 feet north and 50 feet south of the crosscut. Eight diamond drill holes have been drilled in the area (Figs. 3 and 4).

The Ajax vein system occupies a fault zone in the schist and the veins are exposed at the surface more-or-less continuously for a distance of about 1800 feet north of the Ajax shaft and about 200 feet south of it (Fig. 3). Two prominent branches of the vein system converge at the Ajax shaft, and the mine workings have explored the western or Hanging Wall branch vein. This vein strikes approximately N. 20° W. but south of the shaft where the two veins converge the strike is nearly south. The Foot Wall or east vein strikes nearly north for a distance of about 500 feet north of the Ajax shaft, then appears to change its strike to N. 20° W. or approximately parallel to the Hanging Wall vein. Although the mine workings are mostly in the Hanging Wall vein, the Foot Wall vein forms the more prominent outcrop and shows more leaching effects at the outcrop than does the Hanging Wall vein. The dip of both veins at the surface is about 65° west but flattens with increasing depth and on the 176 level the dip of the hanging wall vein ranges from 40° to 45°. Where the veins cross Cottonwood Wash there is a zone in which the veins appear to be structurally deformed, suggesting that they may have been folded or faulted. Some brecciation of the enclosing schist was noted but the cause of the brecciation was

not apparent nor could the geology be satisfactorily interpreted. It is possible that the two main veins may merge in this zone, or another branch vein may intersect the footwall vein.

The vein material consists of two distinct types which have been deposited under distinctly different conditions. One type of vein filling consists of specularite in massive, glassy quartz. The other type consists of milky quartz, amethystine quartz, and white calcite, accompanied by sphalerite, galena and trace amounts of chalcopyrite. This type of vein material is prominently banded, and many comb structures and drusy cavities are present in it. It also contains all of the observed sulfide minerals, and locally these are sufficiently abundant to constitute low-grade ore. Galena and sphalerite occur as coarse grains from about one-eighth of an inch to about one inch in maximum dimension. Galena predominates on the 50 level and sphalerite predominates on the 176 level. Otherwise these minerals are dispersed erratically throughout the vein and in many places constitute from 10 to 20 percent of the vein filling; however, in some places the vein is barren. Masses of galena and sphalerite from 1 to 4 inches wide and from a few inches to about 2 feet long are present in many places within the vein. Ore minerals are also present in some of the brecciated wall rock, as for example about 50 feet north of the shaft on the 176 level. Here a lenticular mass of brecciated schist (Fig. 5) is thoroughly impregnated with calcite, quartz, sphalerite, and galena. These occur in small seams and masses cementing part of the breccia. The breccia mass is over 50 feet long, and about 15 feet wide but the sulfides are confined

to an area about 30 feet long and about 10 feet wide. This mineralized breccia is exposed only on the 176 level but it is assumed that the breccia extends at least a short distance above and below the level.

Deformation along the vein zone has disrupted some of the rocks and locally they have been weakened by what appears to be late-ore or post-ore movement. It is probable that deformation and hydrothermal alteration have weakened the wall rocks to such an extent that underground support will be required in some zones if the vein is mined.

PRODUCTION AND GRADE

Little ore has been produced from the mine. Shipments that are thought to represent the total production are as follows:

Date	Tons	Percent Lead	Percent Zinc	Percent Copper	Ounces Silver
12-10-47	0.75	19.00	Trace	0.12	1.50
12-10-47	3.02	60.8	--	Trace	3.9
12-16-47	35.17	7.35	5.4	0.12	1.05
1-22-48	34.85	7.2	3.2	0.12	1.05
2- 5-48	1.53	60.0	--	--	4.0
2- 9-48	16.40	10.3	2.8	0.20	1.45
Total	91.72				

These shipments are products of selective mining of some of the higher grade portions of the vein and are probably also upgraded by hand sorting. The largest shipments, containing relatively low values, are probably not much higher grade than many parts of the vein.

As a result of extending the 176 level with DMEA aid a small amount of low grade material was stockpiled on the property. About 20 tons of this is hand-sorted material, a sample of which assayed 0.34% copper, 0.52% lead, 1.8% zinc, 0.02 oz. gold, and 0.4 oz. silver. The remainder of the stockpiled material is in a pile amounting to about 100 tons. Two samples of the pile assayed 0.23 and 0.095% copper, 0.58 and 1.10% lead, 1.3 and 3.4% zinc, and trace and 0.02 oz. gold, and 0.1 and 0.4 oz. silver.

Many samples (Fig. 6) have been taken of the vein. Most of the samples were taken before the applicant acquired the property. Several were taken by the applicant, and the DMEA examiners took 5 samples as a means of checking and verifying the others. The samples taken by DMEA provide a fair check on the others but are slightly lower grade. It was noted by examination of the mine workings that the sample widths previously reported are exaggerated, and could not be substantiated. Because of these erroneous widths it is not possible to properly weigh the samples and accurately compute the lead and zinc content of the vein. The lead content is greater than the zinc content in the upper part of the mine and the zinc content is greater than that of the lead in the lower part of the mine. The copper content of the ore is small, but it is probable that both copper and silver values will be recovered with the lead and zinc if the ore is beneficiated.

EXPLORATION

Prior to DMEA contract

In addition to the mine workings an attempt has been made to explore the vein by 8 diamond drill holes, two of which encountered sufficient ore to be of possible commercial value. Hole No. S-6 about 200 feet north of the shaft penetrated about 5 feet of ore estimated at 4 percent lead and 6 percent zinc, and hole No. S-2 about 400 feet north of the shaft penetrated about 11 feet of 18 to 25 percent zinc ore (Figs. 3 and 4). At present there is insufficient information to interpret the significance of these penetrations but it appears possible that the holes discovered additional ore shoots. Hole No. S-2 appears especially significant because it may have penetrated the hanging wall vein zone beneath an iron-stained brecciated schist that could be interpreted as being the outcrop of a mineralized zone. The breccia is exposed in a small elliptical area about 20 feet in maximum dimension near the place where the veins cross the floor of Cottonwood Wash.

Holes S-1, S-3, S-4, and S-5 (Fig. 4) were drilled to explore outlying or deep parts of the vein. These penetrated considerable mineralized material having very low values but veins of minable width and grade were not encountered. Available data are insufficient to correctly interpret the significance of these holes, but the veins probably change character by splitting into many small veinlets. It appears as if veins of a size large enough to mine do not exist at depths greater than a few hundred feet.

The underground holes, Nos. 1 and 2 (fig. 6), were apparently drilled to ascertain that the drift was on the main vein and had not bypassed any ore.

DMEA Exploration

The work authorized by the DMEA contract was as follows:

(1) A 400-foot extension in a northerly direction of the 176 level to explore the ore penetrated by holes S-2 and S-6.

(2) Four 50-foot raises to test whatever ore is found along the 176 level.

(3) 500 feet of diamond drilling from the 176 level to test the Foot Wall vein and to delineate ore.

Of this planned work only 194 feet of the drifting was completed. The geologic findings in this drift are shown in figure 5.

The following information is based on Metler's monthly reports. From the starting point, 77.5 feet north of the crosscut to the shaft, 15 feet of drift were driven before the drift got back on the vein; 30 feet from the starting point the vein had widened to 26 inches and showed sphalerite and galena. At 35 feet "mineralization is well scattered across the vein . . . . but is not of commercial value." The meager scattering of galena and sphalerite continues in the drift to 111 feet. In the interval from 35 to 111 feet this mineralization is in a fault breccia. There is evidence of vertical movement in the hanging wall of the drift and much of the ore shows evidence of drag movement. A little beyond the 111-foot point, a "watercourse" one

foot to three-and-a-half feet in width was encountered and the level was temporarily flooded. Sulphide mineralization appears to have been confined to the watercourse and consisted mainly of chalcopyrite. After a 23-foot advance along the watercourse, an additional 34 feet of advance was made through "a good showing of lead, zinc and copper ore" in a 2½-foot wide quartz vein, bringing the total footage to 168 feet beyond the starting point. In this last 34 feet more water was encountered, and timbering was necessary as was also the case in the previous 23 feet. During the advance of 34 feet some of the rock removed was stockpiled as it seemed to be of milling grade. This is undoubtedly some of the stockpiled material mentioned on page 6 of this report. The last monthly advance of 26 feet just before the project closed down was in low grade lead-zinc material. Small stringers of chalcopyrite were noted. The mineralized rock was confined to the floor and near the floor of the drift.

Although Metler in his progress reports did not indicate the presence of an ore shoot in the drift, his progress report maps (fig. 5) show a "copper-lead-zinc ore zone" from about 85 to about 170 feet from the starting point. Romslo says this is probably reliable information. It should be noted, however, that the grade of all the material encountered in the DMEA exploratory drift is very low. No reliable samples were taken in the drift (even though Romslo repeatedly requested Metler to submit samples), but stockpiled material from the drift is, at best, of milling grade. Yet some of this stockpiled

material (perhaps much of it) is hand sorted. The 40-foot, horizontal diamond drill hole No. 3 (fig. 5), drilled during the DMEA project at company expense, to test the hanging wall of the Hanging Wall vein, encountered "nothing of value", according to Metler. The most promising target of exploration, namely the 11-foot, 18 to 25 percent zinc zone in hole S-2, was never reached. The DMEA drift is about 110 feet short of the downdip extension of this zone.

Another target of exploration was the 5-foot, 4 percent lead and 6 percent zinc zone in hole S-6. The downdip extension of this zone would be opposite a point in the drift about 90 feet from the starting point of DMEA work. In figure 5 this would be about at the south edge of the 90-foot "copper-lead-zinc zone" as defined by Metler. However, section H-1 (figs. 3 and 4) shows that the downdip extension of the vein corresponding to the mineralized zone in S-6 is about 30 feet east of the 176 level drift. Consequently it seems possible that the target was missed by the DMEA drift. This very real possibility raises the question of whether the drift does on the whole stay on the main mineralized zone.

ORE RESERVES

Ore reserve estimates submitted by the applicant amount to about 25,000 tons of developed and probable ore. This estimate appears to be too high because it is based on exaggerated vein widths rather than the actual vein widths. The applicant's grade estimates are also somewhat greater than those of the examiners, being about 2 percent higher in combined lead and zinc. DMEA exploration has not substantially changed the reserve picture.

The following reserve estimates, except for discoveries due to DMEA work, are taken from the examination report. The oreshoot developed by the Ajax shaft and levels is sufficiently well explored and sampled to be classed as indicated ore. Vein material containing significant amounts of galena and sphalerite is exposed along both the 50 foot and 176 foot levels, The vein material in the south end of the 50 level drift probably cannot be recovered because it is so thoroughly oxidized that it is not amenable to concentration and is probably too low-grade to constitute shipping ore. It is assumed that similar oxidation has taken place in all the ore within about 30 feet of the surface; therefore minable ore is thought to extend only 20 feet above the 50 level. The vein widths at the 50 level are from 5 to 12 feet, but average about 7 feet, and ore is exposed along the level for a distance of about 70 feet. The block of ore above 50 level is estimated to contain about 800 tons of indicated ore. The grade of the ore is about 9 percent lead, and 3 percent zinc as estimated from several samples and 3 small shipments.

The main ore shoot is also explored by the 176 level where sphalerite and galena are present in the vein for a strike distance of about 110 feet. The oreshoot is exposed in part of the Ajax shaft and the ore is assumed to be continuous between the 176 level and the 50 level and the vein thickness will average about 7 feet. It is conservatively estimated that about 5700 tons of ore are present in the oreshoot, between the 50 and 176 levels. By evaluating many samples (Fig. 6) taken along the shaft and on the 176 level it is estimated that the

average grade of the ore is about 1 percent lead and 8 percent zinc. The ratio of lead to zinc decreases gradually with depth from the 50 level to the 176 level.

The average grade of all the ore in the presently developed oreshoots at the Ajax mine is estimated at 4.4 percent lead and 5.9 percent zinc.

Reserves above the 176 foot level are estimated at 47 tons per foot of depth along the dip of the vein and it is presumed that the ore may be safely projected 150 feet below the 176 level. The ore in the first 50 feet of this projected depth is classified as indicated ore and the remaining 100 feet is considered as inferred ore. About 2300 tons of ore is indicated, and about 4700 tons is inferred to be present. The grade is assumed to be the same as on the 176 level, or about one percent lead and 8 percent zinc.

Ore penetrations were made by diamond drill holes S-6 and S-2 (Figs. 3 and 4) and at each of these locations it is hoped that other oreshoots are present that may contain as much ore as is present in the main shoot. About 1000 tons of indicated ore is assumed to be present at each drill hole penetration. Assays on the core of the hole S-2 yield from 18 to 25 percent zinc but it is believed that the hole accidentally penetrates a rich portion of the vein and this block of ore should not be expected to be much higher grade than developed parts of the vein. The core from hole S-6 has not been assayed but inspection reveals it to be similar in grade to the ore in the developed portion of the mine, and by comparison is estimated to contain about 4 percent lead and 6 percent zinc.

In addition to the above reserve estimates an evaluation of reserves in the ground opened by the DMEA work is needed to complete the reserve picture at the Ajax mine. Because the basic geologic data in this case lacks the reliability of firsthand information, the reserves based on it are considered to be inferred in category. The material in the DMEA drift that most nearly measures up to the definition of ore probably is that in the "copper-lead-zinc ore zone" shown by Metler near the end of the drift. Using dimensions of 90 feet for the strike length as exposed along the drift, a thickness of 3 feet, and updip and downdip extensions of 50 feet in each direction, gives 27,000 cubic feet. Applying a tonnage factor of 11 cubic feet per ton gives about 2,500 tons. The only information upon which to base the grade of this rock is from the three samples of stockpiled material from the drift. These samples average 2.2 percent zinc, 0.73 percent lead, 0.13 oz. gold, and 0.3 oz. silver.

The ore reserve estimates are summarized as follows:

Location	Tons	Percent Lead	Percent Zinc
Indicated Ore			
Above 50 level	800	9	1
Between 50 and 176 levels	5700	1	8
From 176 level to 50 ft. below it	2300	1	8
At drill hole S-2	1000		10-15
At drill hole S-6	1000	4	6
Inferred Ore			
From 50 to 150 ft. below 176 level	4700	1	8
In "oreshoot" discovered by DMEA drifting on 176 level	2500	0.7	2.2
Total	18000		

Potential reserves, based on possible though undiscovered oreshoots in both veins may amount to at least several times the above indicated reserves.

CONCLUSIONS AND RECOMMENDATIONS

Examination of the Ajax vein system reveals that important amounts of galena and sphalerite are present in a quartz-calcite gangue. About 14,000 tons of ore, containing about 10 percent combined lead and zinc, are reasonably assured in the old mine workings. Inferred ore may amount to several times this amount in unexplored or incompletely explored parts of the veins. DMEA work showed only an additional 2500 tons of inferred reserves containing about 3 percent combined lead and zinc. The exploration program, however, was less than half completed when the operator shut down. The most important target area had not been reached, and the second most important target, though not found, had not been disproven, as the drift may have missed this target. The potentialities of the property therefore remain about the same as before exploration was undertaken. It is recommended that government interest in the property be continued as the work done with government aid has provided much better access for future exploration than was possible before the project was undertaken.

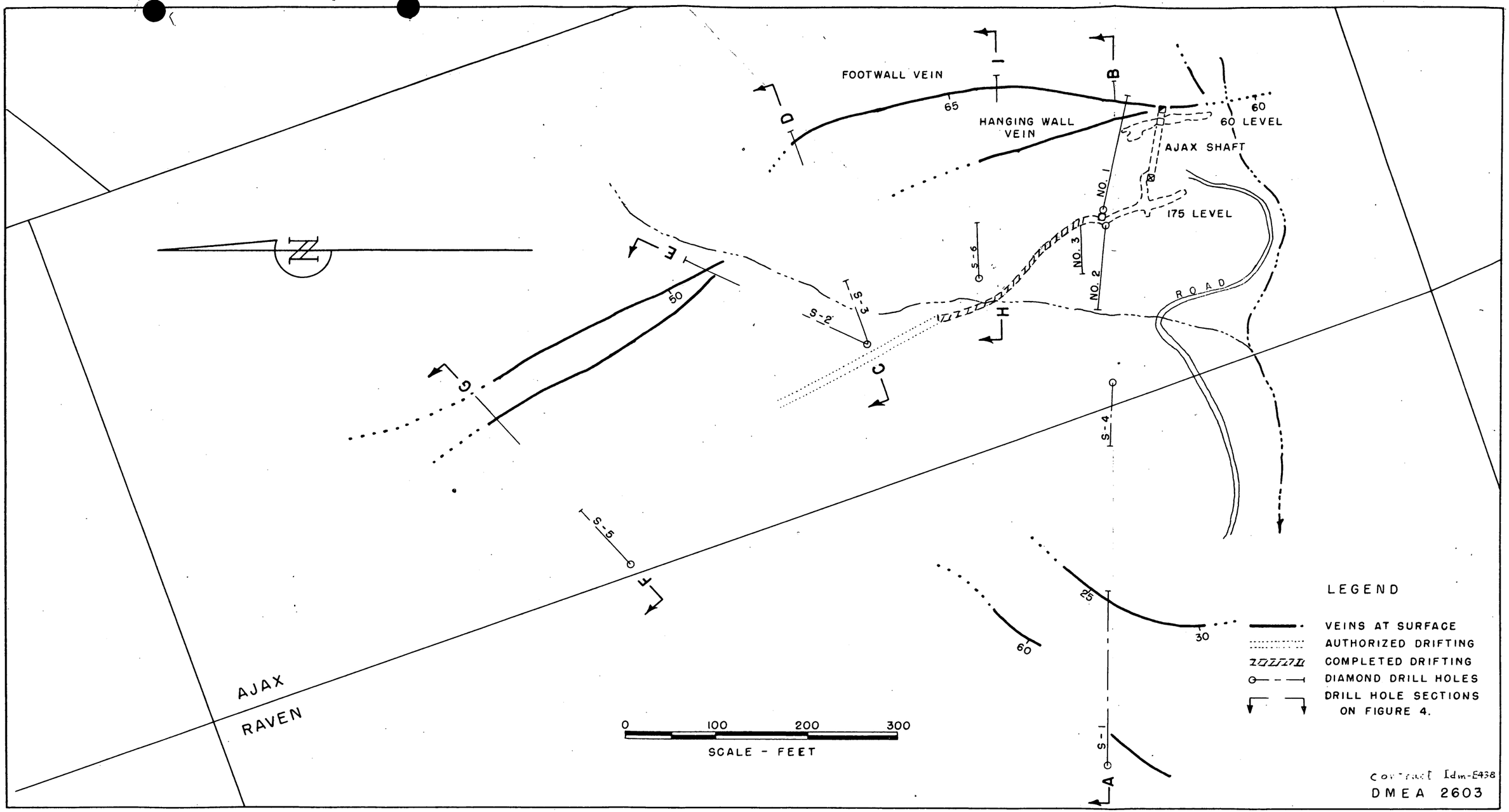
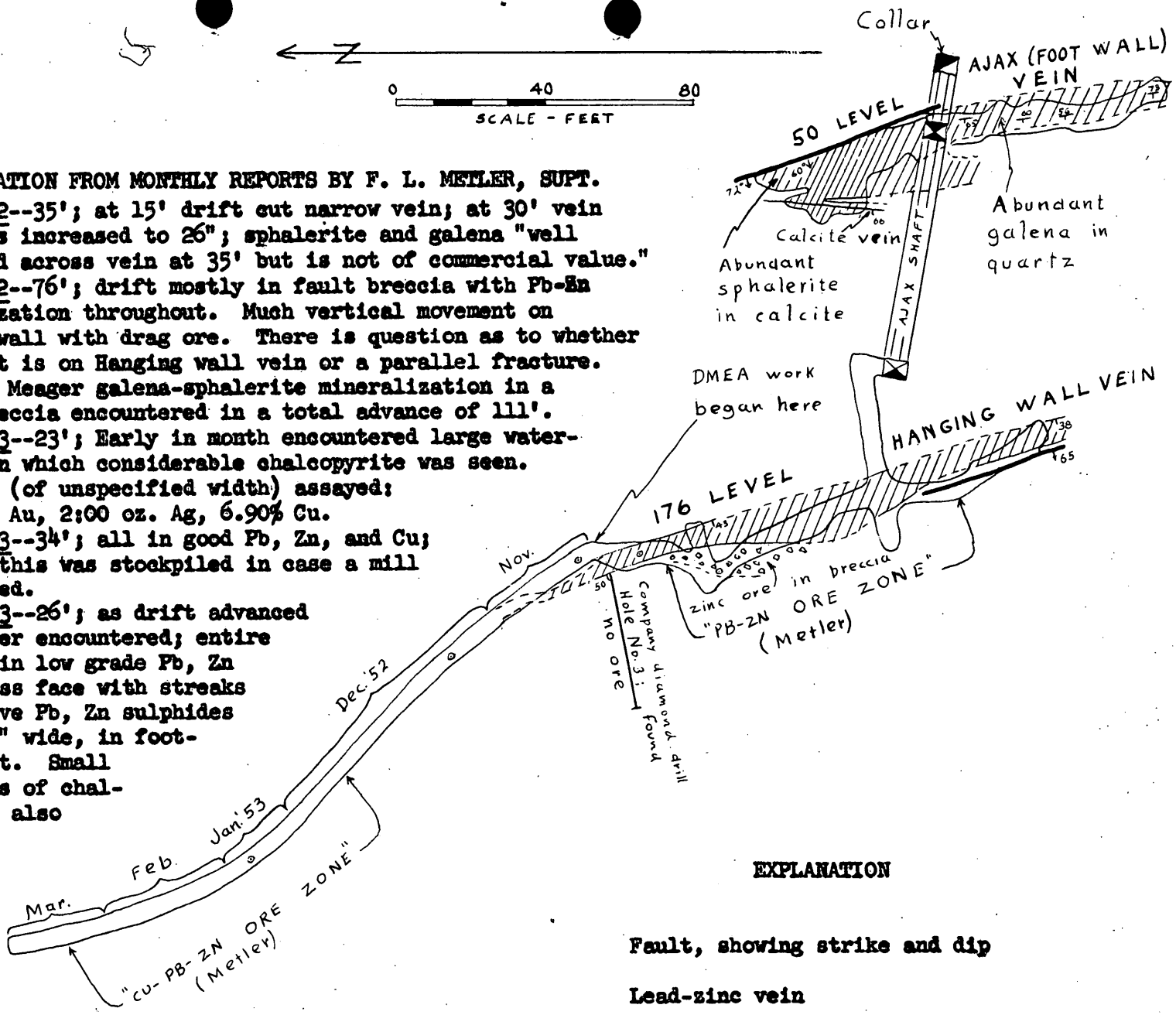


FIGURE 3. - PLAN MAP - AJAX MINE - MAGMA KING MANGANESE MINING COMPANY - PINAL COUNTY, ARIZONA



INFORMATION FROM MONTHLY REPORTS BY F. L. METLER, SUPT.

Nov.'52--35'; at 15' drift cut narrow vein; at 30' vein width has increased to 26"; sphalerite and galena "well scattered across vein at 35' but is not of commercial value."

Dec.'52--76'; drift mostly in fault breccia with Pb-Zn mineralization throughout. Much vertical movement on hanging wall with drag ore. There is question as to whether the drift is on Hanging wall vein or a parallel fracture. Romslo: Meager galena-sphalerite mineralization in a fault breccia encountered in a total advance of 111'.

Jan.'53--23'; Early in month encountered large water-course in which considerable chalcopyrite was seen. A sample (of unspecified width) assayed: 0.02 oz. Au, 2:00 oz. Ag, 6.90% Cu.

Feb.'53--34'; all in good Pb, Zn, and Cu; some of this was stockpiled in case a mill is erected.

Mar.'53--26'; as drift advanced more water encountered; entire advance in low grade Pb, Zn ore across face with streaks of massive Pb, Zn sulphides up to 11" wide, in foot-wall part. Small stringers of chal-copyrite also present.

EXPLANATION

Fault, showing strike and dip

Lead-zinc vein

Strike and dip of vein

Country rock is Precambrian (?) chlorite schist. Map is compiled from field mapping of J. N. Faick and monthly progress reports for applicant by F. L. Metler.

FIGURE 5 - GEOLOGIC MAP, AJAX MINE WORKINGS, PINAL COUNTY, ARIZONA.

DMEA 2603, Contract Idm-E428

224 New Customhouse
Denver 2, Colorado

January 26, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 2603 (Lead-Zinc), Contract Idm-2428, Magma King Manganese Mining Company, Ajax Lead-Zinc mine, Pinal County, Arizona

Enclosed are the following final reports pertaining to work completed under the subject contract:

1. The original and one copy of the Operator's final report.

2. The original and three copies of the final engineering report by the U. S. Bureau of Mines.

The final geologic report by the U. S. Geological Survey is in process of preparation and will be forwarded when made available to this office.

Final payment to the Operator was processed by this office October 25, 1955, in conformance with the Report of Review by the Contract Administration and Audit Division, dated August 31, 1955.

The exploration work consisted of 194 feet of drifting at a total accepted cost of $6,790.00, in which the Government participated to the extent of 50%, or an amount of $3,395.00.

The exploration work resulted in a discovery or development of lead-zinc ore for which a pseudo certification was effected by the provisions of item 4(c) of Amendment No. 7, dated June 30, 1954.

W. M. Traver
W. M. Traver

E. H. Harshman
E. H. Harshman

JWT:prl
cc: Harshman) w/copy of each
Storms) report
Faick - w/copy of Engineering Report
Enclosures
Townsend
Final Report file, Reg.III
Chron.

Burke

Part III
Final Report File

FINAL REPORT

United States Department of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 2603 (Lead, Zinc)
Contract Idm-E428

PROGRESS REPORT

Work under the joint-finance arrangement with the company, Magma King Manganese Mining Company, and Defense Minerals Exploration Administration began on November 1, 1952. Previous to that time the company had, at its own expense, installed a track and skip in the 176-foot shaft. The head-frame was reconstructed and a dump arrangement was installed. Additional pump facilities and pipe lines were installed and a new track was laid in the north drift face.

Under the contract, the cost of drift per foot was set at $35.00. One-half of this cost was to be borne by DMEA, and the company received for the month of November payment from DMEA for its share, amounting to $612.50.

About 15 feet of drifting was necessary to get the drift back into the hanging wall vein. At this point there was about 26 inches of mineralization, consisting of chalcopyrite, galena, and sphalerite.

For the month of December 76 feet of drifting was completed, the greater part of which passed through fault breccia, with lead, zinc, mineralization throughout. The hanging wall of the drift indicated much movement of a vertical nature, and the mineralization appeared to be drag ore.

During January 26 feet of drifting was done. During the first part of the month a large water course was blasted into, which flooded the entire drift and even up to within a few feet of the pump station in the shaft. This water course appeared to be about 25 feet in length and from one to three feet in width. The mud which washed out of the water course had manganese and specular hematite in it. It was necessary to install timber at the face of the drift. A considerable amount of chalcopyrite was observed in the face of the water course.

Progress for the month of February totalled 34 feet of drifting, all of which contained good showing of lead, zinc and copper. A portion of the material removed in drifting was of sufficient mineralization to stock pile, in the event of future milling operations. Much water was encountered this month and additional pumping was necessary throughout the entire month. Also, during this month, a diamond drill hole was drilled to a length of 40 feet in the hanging wall at a point opposite the starting point under the DMEA contract. This hole was drilled entirely at company expense. Nothing of value was observed in the core recovered.

Progress for the month of March was 26 feet of drifting, in ore most of the way for the full width of the drift. A fairly strong copper lens appeared on the foot wall side of the vein. A 14-inch sample cut across this lens assayed 9.78% copper. A 4-foot cut across the face went 2.2 copper, 4.20 lead, and 4.75 zinc. The face of the drift at the termination of the operation appeared to be partially in ore.

CONCLUSION

From the progress report, it would appear that a discovery has been made in the Ajax drift to the north, and while the project was not completed, the company is encouraged by the findings and contemplates completing the exploration program. However, due to financial reasons for the present we wish to terminate this contract with DMEA and as soon as new operations are possible, we will inform whatever Government Agency necessary in the event an operation is begun.

The writer wishes to express appreciation and satisfaction to Mr. W. W. King and others of that department, and Mr. Storm of the Bureau of Mines office at Tucson, whose responsibility it was to process the work program and also the others of that department who rendered assistance to our joint efforts.

For the month of March the DMEA has refused to make payment for its portion of the operation as the contract called for. Request is hereby made that this sum be paid to the company as soon as possible.

Respectfully submitted,

Magma King Manganese Mining Company

By Ralph Bruce
President

DMEA
FEB 4 1955

February 2, 1955

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station, Region III

Subject : Final engineering report, DMEA Contract Idm-E428, Docket DMEA-2603, Magna King Manganese Mining Co.'s Ajax Lead-Zinc Mine, Mineral Hill Mining District, Pinal County, Ariz.

Enclosed are original and 8 copies of a final engineering report on the above property by T. M. Remale and W. R. Hardwick of the Bureau of Mines. Although this contract probably hasn't been actually terminated, no work has been done on it since March 1953 and termination papers have been sent to the company's president for signature.

Some time ago we recommended that a "Certification of Discovery or Development" be issued.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
J. N. Faick
DMEA-2603
DF

WRStorms:frj

9mEa

FEB 4 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

FINAL ENGINEERING REPORT

DMEA-2503, Contract Idm-E428

Maynes King Manganese Mining Company's Ajax Lead-Zinc Mine

Mineral Hill Mining District

Pinal County, Arizona

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

William R. Hardwick, Mining Engineer
U. S. Bureau of Mines

February 1954

DMSA-2603, CONTRACT Idm-E428
MAGMA KING MANGANESE MINING COMPANY'S AJAX LEAD-ZINC MINE
MINERAL HILL MINING DISTRICT
PINAL COUNTY, ARIZONA

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Early in 1952, the Magma King Manganese Mining Co. of Phoenix, Ariz. applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for Government assistance to explore the lead-zinc deposit at the Ajax mine in the Mineral Hill Mining District of Pinal County, Ariz. The original application was for an estimated $59,727.00 and was docketed as DMEA-2603. The applicant proposed to explore the deposit by diamond drill holes, and by drifting and crosscutting.

The Ajax property was examined on August 25, 26, and 27, 1952 by T. M. Romslo of the Bureau of Mines and J. N. Faick of the Geological Survey, accompanied by Ralph J. Pomeroy, president of the Magma King Manganese Mining Co. and Frank L. Metler, who was superintendent at that time for this company. After some discussion, the applicant revised its proposals and the DMEA examiners recommended that Government assistance be given the company for the total amount of $23,100.00 for driving 400 feet of drift and 200 feet of raises, and drilling 500 feet of diamond drill hole.

The Ajax mine is situated about 8 air-miles southwest of Superior, Ariz. in the Mineral Hill Mining District. Lead and zinc minerals occur in 2 large fissure veins in pre-Cambrian schist, these veins striking in a northerly direction and dipping from 45 to 65 degrees to the west. One vein had been explored

by a 176-foot shaft, inclined about 65 degrees to the west, with short levels at the 50- and 176-foot points at the time the DMEA application was submitted. The deposit (or deposits) also had been explored to some extent by several surface diamond drill holes.

Exploration Project Contract No. Idm-E428 was signed on October 23, 1952. It provided: (1) Drift 400 feet northerly on the 176-foot level; (2) drive 200 feet of raises at favorable sites disclosed by this drifting; and (3) diamond drill a maximum of 500 feet of core hole at locations which were to be determined after part or all of the drifting had been done. The estimated costs were to be: (1) 400 feet of drifting at $35.00 per foot; (2) 200 feet of raising at $33.00 per foot; and (3) 500 feet of drill hole at $5.00 per foot. The total cost was $23,100.00, or $11,550.00 as the Government's share.

Work under terms of the contract was started on November 14, 1952 after the shaft headframe had been reinforced, a dumping arrangement built, track and skip installed in the shaft, ventilation, pump, water and air lines installed, and track and pipe lines installed on the 176-foot level.

Up until April 1, 1953, the north drift on the 176-foot level had been advanced 194 feet. About that time, the price of lead and zinc declined, so the operator requested and received a recess of operations until May 1, 1953. Additional recess periods were granted to September 1, 1954 although no work under terms of the contract had

been done since March 1953. As no work had been started by September 1, 1954 and as the operator failed to ask for an additional recess period, DMEA representatives recommended that the contract be cancelled.

During the life of the DMEA contract, a small amount of low-grade lead-zinc material was discovered by the 176-foot level north drift. Although this material is not ore at the present time, it indicates the presence of lead and zinc in a zone that could be an extension of the ore found in old diamond drill hole S-6. The drift was driven 194 feet and lacked only about 90 feet of reaching the main objective, the downward projection of the ore indicated by diamond drill hole S-2. Because of these facts, it was recommended that a "Certification of Discovery or Development" be made.

INTRODUCTION

The Ajax mine in Pinal County, Ariz. was explored during 1952 and 1953 by the Magma King Manganese Mining Co. with Governmental assistance as authorized by the Defense Production Act of 1950, as amended. The company had made application to the Defense Minerals Exploration Administration for assistance in exploring and developing the mine at estimated cost of $59,727.00, with the object of indicating sufficient lead-zinc ore to justify a milling operation. The application was reviewed, docketed as DMEA-2603, and sent to the field for an examination of the property. The field examination,

made by J. N. Faick, Geological Survey and T. M. Romslo, Bureau of Mines, resulted in favorable findings and authorization for aid on a revised exploratory program.

Contract Ldn-5428 was executed and duly signed by both parties. It authorized underground exploratory work costing an estimated $23,100.00 and specified that the maximum Governmental participation would be 50 percent of the estimated costs, or $11,550.00. The exploratory work, started on November 14, 1952, continued through March 1953. It then was recessed to September 1, 1954, in accordance with the applicant's request. Failure to renew operations resulted in cancellation of the contract. Only a small portion of the authorized work was completed.

LOCATION AND ACCESSIBILITY

The Ajax mine is about 8 air-miles southwest of Superior, Ariz., the home of the Magma Copper Co. (figure 1). Superior is on U. S. Highway 70 and is the terminus of the Magma Arizona Railroad. The mine may be reached from Superior by traveling 11 miles westerly on U. S. Highway 70, thence 9 miles southeasterly over a graded desert road that contains no excessive grades. Short stretches of the desert road that cross or follow dry-washes are impassable for brief periods after heavy rainfalls.

The nearest railroad shipping point is Fries, about 12 miles south of the mine by desert road. The Ajax mine is at an altitude of about 3,000 feet. It is in an area of moderately rugged topography consisting of sharp mountain ridges and narrow valleys. On the property, the altitudes range from about 3,800 to 3,500 feet.

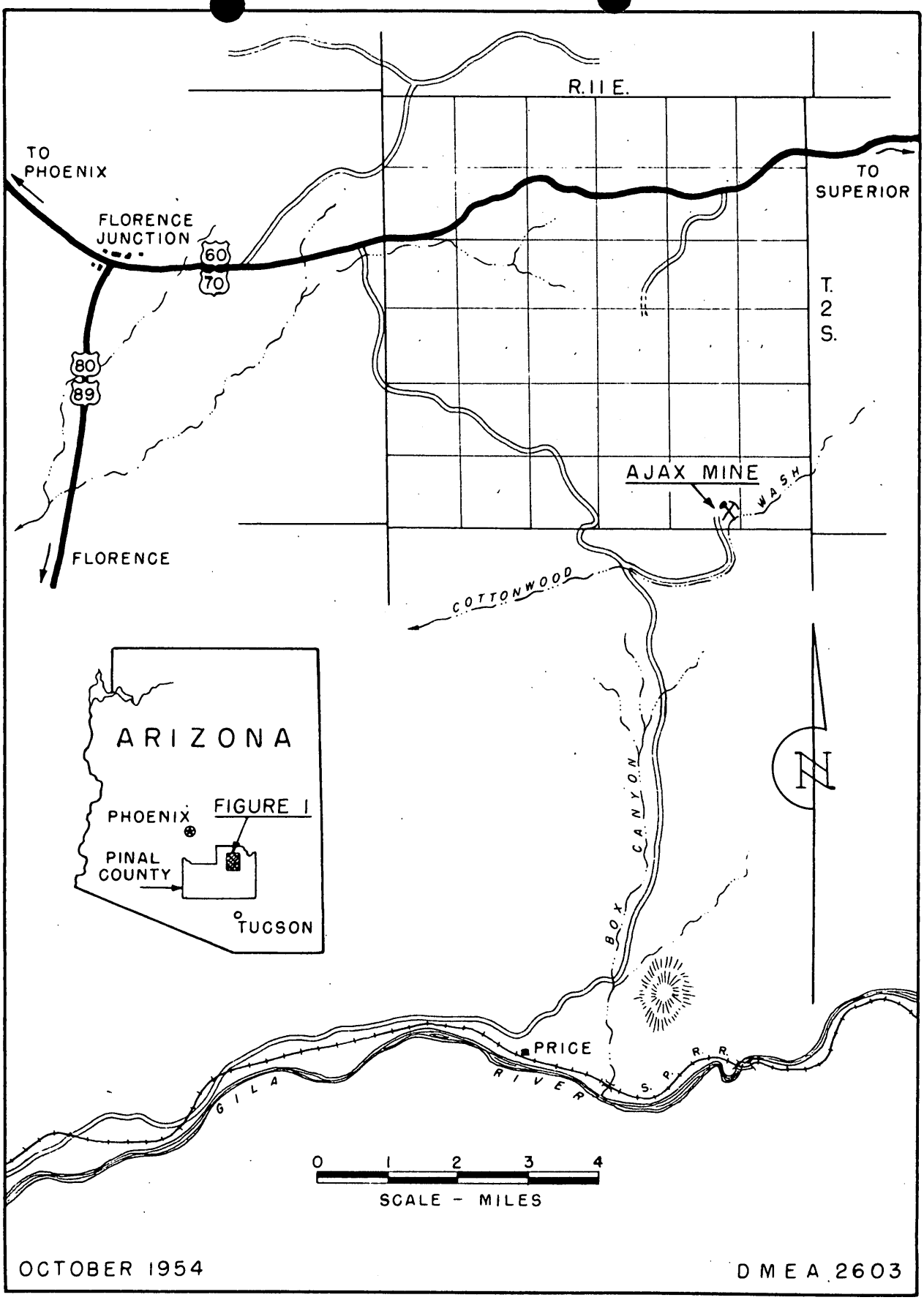


FIGURE 1. - LOCATION MAP - AJAX MINE
MAGMA KING MANGANESE MINING COMPANY PINAL COUNTY, ARIZONA

The mountain slopes support a sparse growth of desert vegetation, mainly cacti and catclaw. Palo Verde trees and mesquite occur in the valleys.

There are no permanent streams in the area that drains southerly to the Gila River.

The climate is typical of the lower altitude regions of southern Arizona. Annual temperatures at the mine probably range from a few tens of degrees below freezing to near 110 degrees. Precipitation, mainly as heavy rain storms during July and August, probably totals between 10 and 15 inches yearly. Light rainfalls and a few snow flurries are common in the winter.

HISTORY AND PRODUCTION 1/

The date of discovery of the Ajax deposit is unknown. Development of the deposit was started in 1906. During the following few years the deposit was developed to its present inclined depth of 180 feet. Probably little or no ore was shipped from this operation. The mine then was inactive until 1947. During 1947 and 1948, lessees shipped 5.25 tons of ore containing 56 percent lead and 4 ounces of silver per ton, and 3 carloads of ore averaging approximately 8 percent lead, 6 percent zinc, 0.14 percent copper, and 1.2 ounces silver a ton. The mine then was allowed to fill with water.

In 1949, the mine was dewatered and a small amount of drifting was done on the 176-foot level. In 1950, the Magma Copper Co. sampled the underground workings, and the Miami Copper Co. carried

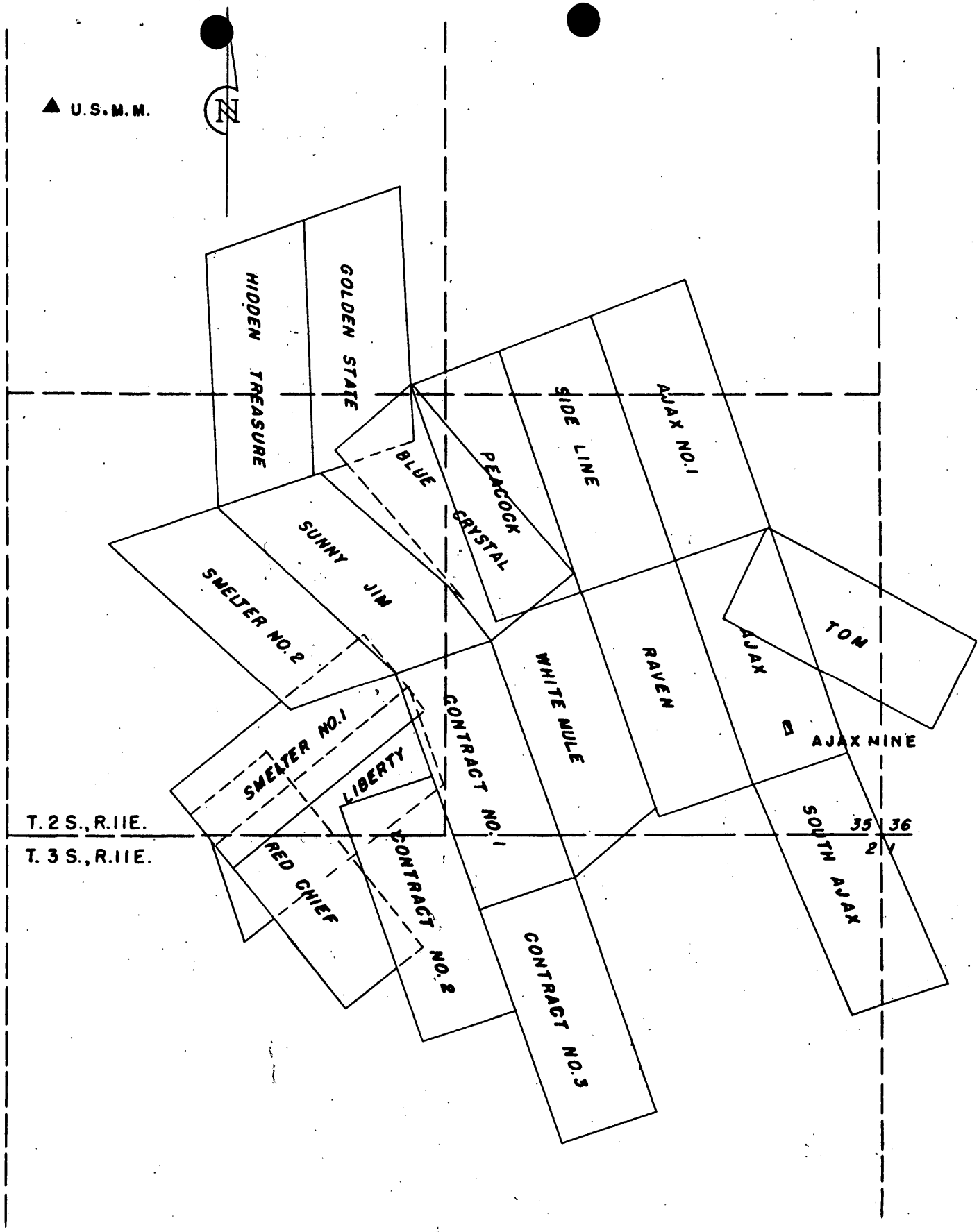
1/ Information supplied by Ralph J. Pomeroy and Frank L. Metler, president and former superintendent of the Magma King Manganese Mining Co., respectively.

out a diamond drilling program. The drilling consisted of 2 holes from the 176-foot level and 5 holes from the surface. The mine then was inactive to April 1952 when the Magma King Manganese Mining Co. reopened it. Prior to initiation of the work authorized by contract with the Government, the company had put down a diamond drill hole from the surface, check-sampled a portion of the underground workings, and started construction of a skip pocket.

PROPERTY AND OWNERSHIP

The property comprises a group of 3 patented and 16 unpatented lode mining claims in secs. 35 and 36, T. 2 S., R. 11 E., and secs. 1 and 2, T. 3 S., R. 11 E., Mineral Hill Mining District, Pinal County, Ariz. (figure 2).

The Magma King Manganese Mining Co. held all the above property under lease and option agreements with Apex Mines, Inc. The patented claims, the Ajax, Ajax No. 1 and Raven, are owned by Mr. and Mrs. Walter S. Smith and Rae L. Frazier, Coolidge, Ariz. The unpatented claims are owned by Mrs. G. O'Dell, Phoenix, Ariz. and Mr. and Mrs. Frank H. Allen, Gilbert, Ariz. The agreements that were transferred by the Apex Mines, Inc. were obtained directly from the owners of the Raven claim and through transfer of agreements on the remaining claims that were held by Louis Hennig and Robert F. Dannalley, Pinal County, Ariz. All of the agreements called for royalty payments to the owners of 10 percent of the net returns from ore produced. Net returns were defined as the gross amount paid by the purchaser of ore concentrates less charges for transportation, milling, concentration,



SCALE: 1" = 800' (APPROX.)

DMEA 2603

CLAIM MAP

Fig. 2 MAGMA KING MANGANESE CO.'S AJAX MINE, PINAL CO., ARIZ.

smelting, and trucking. Royalty payments in all cases were to be applied to purchase prices of $40,000.00 for the Ajax and Ajax No. 1 claims, $15,000.00 for the Raven claim, and $32,000.00 for the 16 unpatented claims.

The Magma King Manganese Mining Co., an Arizona Corporation, first maintained an office at 532 Security Building, Phoenix, Ariz., then later moved to 547 North Arizona Ave., Chandler, Ariz. The principal officers of the corporation were: Ralph J. Pomeroy, president, Chandler, Ariz.; Walter C. Smith, vice-president, Coolidge, Ariz.; Loran E. Skousen, sec. and treas., Springfield, N. J.

GEOLOGY AND ORE RESERVES

Geology

The country rocks in the vicinity of the Ajax mine are chlorite schists of probable pre-Cambrian age. The schist is fine-grained and greenish-grey in color, and is gently folded into small easterly trending anticlines and synclines that have dips on their flanks of 10 to 30 degrees. Schistosity is vague and poorly developed.

The Ajax mine explores part of a vein system by means of a 176-foot shaft inclined westward about 65°, and by drifts on the 50- and 176-foot levels (figure 3). The 50-foot level extends 50 feet to the north and 60 feet to the south of the shaft. On the 176-foot level, drifts have been driven 274 feet to the north and 50 feet to the south from a 30-foot crosscut from the shaft. Other underground exploration consists of 3 short diamond drill holes on the bottom level. Surface exploration includes a few shallow pits and 6 diamond drill holes.

A system of quartz veins at the Ajax mine occupies a fault zone in schist. It is exposed at the surface for a distance of about 1,800 feet to the south and 200 feet to the north of the Ajax shaft where two prominent branches of the system converge. The mine workings explore a portion of the western or hanging wall vein adjacent to its junction with the footwall vein. The hanging wall vein strikes from nearly north-south to N. 20° W. on the surface and averages about N. 3° W. on the 176-foot level. The strike of the footwall vein, exposed only on the surface, is about north of the shaft and then appears to change to N. 20° W. Both veins dip about 65° to the west at the surface. The hanging wall vein flattens with depth and had a dip ranging from 40 to 50 degrees on the 176-foot level. The veins, where they converge, appear to be structurally deformed, possibly by faulting or folding. Some brecciation of the enclosing schist was noted in this area.

Ore mineralization exposed by the underground workings is confined almost entirely to an ore shoot at the shaft. The deposit has a strike length of about 110 feet and extends from near the surface to an unknown depth below the 176 level. Galena and sphalerite, the observed sulfide ore minerals, occur in quartz and calcite as grains that range in size from about one eighth of an inch to approximately one inch in diameter. They are distributed erratically throughout much of the deposit and in many places constitute as much as 20 percent of the vein filling. Oxidation of the ore zone is believed to be almost complete to a depth of about 30 feet below the surface. A high percentage of the ore minerals occur as oxides on the 50 level.

Below the 50 level the degree of oxidation decreases rapidly to the bottom level where oxides form an insignificant portion of the ore minerals.

The only other zone of ore mineralization encountered in the mine occurs near the north end of the 176 level. Here, the drift driven with Government aid penetrated about 34 feet of highly fractured mineralized vein material containing minor amounts of galena, sphalerite, and chalcopyrite.

Significant ore mineralization encountered by diamond drill holes was confined to surface holes S-2 and S-6.

Ore Reserves

The Ajax mine contains no measureable ore.

The indicated reserves have been estimated at: (1) 10,000 tons containing about 10 percent combined lead and zinc and 1.0 ounce silver a ton; and (2) a few hundred tons containing 2.2 percent zinc, 0.73 percent lead, 0.22 percent copper, and 0.13 ounce gold and 0.3 ounce silver per ton. The 10,000 tons of high-grade material present in the partially developed deposit at the shaft and found by drill holes S-2 and S-6 had been indicated by work done before initiation of the DMEA exploratory program. The few hundred tons of low-grade material was penetrated near the end of the drift driven with Governmental assistance.

The inferred reserves are: (1) 4,700 tons containing 1.0 percent lead and 8 percent zinc in a depth extension of the deposit at the shaft; and (2) a few tens of thousand of tons of similar grade material in other deposits that may exist at drill hole S-2, at the mineralized zone encountered by the 176 north drift, and in other parts of both veins.

DESCRIPTION OF WORK COMPLETED

Contract Idm-E428 authorized 400 feet of drifting at $35.00 per foot, 200 feet of raises at $33.00 per foot, and 500 feet of diamond drilling at $5.00 per foot. It specified that: (1) the drifting was to be northerly from the north breast of the 176-foot level; (2) the locations of the raises and the locations, directions, inclinations, and depths of drill holes would have to be acceptable to the DMEA representative; and (3) all preliminary work would be completed by the operator at no expense to the Government.

The drifting authorized by the contract was started on November 14, 1952 after the operator had completed preliminary work, consisting of installation of a skip, removal of debris from the 176-foot level, and the laying of track and pipe lines. To the end of March 1953, work under the contract was confined to 194.0 feet of drifting (figure 3). During this period, the operator drilled diamond drill hole No. 3 at no expense to the Government.

On April 1, 1953, Amendment No. 1 to Contract Idm-E428 became effective, granting a recess of operations until May 1, 1953. No work was resumed at the end of this period and subsequent amendments finally extended this recess period until September 1, 1954. However, no work had been resumed on or before that date so it was recommended that the contract be terminated.

A small amount of low-grade ore was discovered by the drifting. About 20 tons of hand-sorted ore were mined, then placed in one pile on the surface, and possibly 100 tons of low-grade material was placed in another. A sample of the first pile assayed 0.34 percent copper, 0.52 percent lead, 1.8 percent zinc, 0.02 ounce of gold and 0.4 ounce of silver a ton; two samples from the second pile assayed 0.23 and 0.095 percent copper, 0.58 and 1.10 percent lead, 1.3 and 3.4 percent zinc, trace and 0.02 ounce of gold and 0.1 and 0.4 ounce of silver a ton.

EXPLORATION

Exploration Project Contract Idu-E428 estimated costs of the project as follows:

Drifting, 400 feet at $35 per foot	$14,000.00
Raising, 200 feet at $33 per foot	6,600.00
Diamond drilling, 500 feet at $5 per foot	2,500.00
Total estimated cost	$23,100.00

Actual expenditures were as follows:

194 feet of drifting at $35 per foot	$6,790.00
Government's share of actual cost	3,395.00

A small amount of low-grade ore was mined from the 176-foot level drift and stockpiled on the surface. None of this material has been sold, so no royalty has been paid to the Government.

EFFICIENCY OF OPERATIONS

The mining operations were conducted in a fairly efficient manner under the supervision of Frank L. Metler, mine superintendent. Installation of better ventilation and drainage systems would have

materially improved working conditions. Failure to make these improvements probably was due to lack of funds.

Cooperation with representatives of MMEA was not very good. A survey of the workings was made only after repeated requests, and requests for sampling and assaying resulted in no action.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

[illegible] New Customhouse
Denver 2, Colorado

September 30, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2603, (Lead-Zinc) Magma King Manganese Co., Ajax Mine, Pinal County, Arizona

The application for Government assistance in exploration work estimated to cost $23,000 has been approved by us and a contract is being prepared.

Government participation will be 50 percent, or $11,550.

Four copies of the Final Report will be forwarded when the contract is processed.

The original and one copy of Form 3b is attached.

John F. Shaw for
W. H. King

A. H. Koschmann

Enclosures

HHC:oc
cc: WHStorms w/copy of final report
CAAnderson w/copy of final report
AHKoschmann w/copy of final report
Mining Div. w/copy of final report
DMA Final Report

Subject
Chron.
AHKoschmann (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

September 30, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2603, (Lead-Zinc) Magma King Manganese Co., Ajax Mine, Pinal County, Arizona

Enclosed are nine copies of the final engineering report on DMEA-2603 by T. M. Romslo of the Bureau of Mines.

The applicant originally requested $59,727, but during the field examination he revised his proposal for exploration work in the amount of $23,100.

The examining engineer recommends approval of the revised proposal which consists of drifting, raising and diamond drilling.

We concur in this recommendation.

John F. Shaw

John F. Shaw for
W. H. King

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

200 New Customhouse
Denver 2, Colorado

September 29, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2603, Ajax Mine, Magma King Manganese Mining Company, Pinal County, Arizona. Lead-Zinc.

Enclosed are the original and 8 copies of the geologic report by J. N. Faick of the U. S. Geological Survey, covering the above docket.

It has been recommended that the loan be approved.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

September 26, 1952

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DMEA 2603, Ajax Mine, Magma King Manganese Mining Company, Pinal County, Arizona (Lead-Zinc)

Enclosed are the original and 8 copies of the above report by J. N. Faick of the Geological Survey.

From previous development work and favorable geologic conditions it is judged that a small exploration project for lead-zinc is warranted. The report and this conclusion have my approval.

for John N. Faick
A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 9

UNITED STATES
DEPARTMENT OF THE INTERIOR

Arizona-New Mexico Branch
Box 4097
UNIVERSITY STATION

BUREAU OF MINES
MINING DIVISION
REGION IV

TUCSON, ARIZONA

September 25, 1952

Memorandum

To : W. H. King, Denver, Colo.

From : Lincoln A. Stewart for Walter R. Storms, Chief
Arizona-New Mexico Branch, Mining Division, Region IV

Subject : Final Report, Magma King Manganese Co., Ajax Mine,
DMEA Docket 2603, Pinal County, Ariz.

Enclosed find original and 8 copies of the above report by T. M.Romslo of the Bureau of Mines. We are told that the geologic report is complete and will be mailed to Denver within a few days. The examiners agree on a recommendation of approval.

Five photastatic copies of Assignment of Lease are enclosed.

The president and superintendent of this company called at the Tucson office last week and said they would appreciate word from Denver, at the earliest possible date, as to whether project is recommended or denied. This for the reason that they are under considerable expense keeping the mine unwatered.

In the absence of Mr. Storms, I take it upon myself to concur with Romslo's recommendations.

Brochure is enclosed.

Lincoln A. Stewart

Lincoln A. Stewart, Mining
Engineer for Walter R. Storms,
Chief, Arizona-New Mexico Br.,
Mining Division, Region IV

CC: W. H. King (orig. & 8)
A. F. Shride
DMEA-2603
DF

FOR VICTORY
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2603, Magna King Manganese Company

Ajax Mine (Lead-Zinc), Pinal County, Arizona

J. N. Faick, Geologist
U. S. Geological Survey

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

September 1952

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By J. N. Faick[1] and T. M. Romslo[2]

The Ajax Lead-Zinc Mine, Pinal County, Ariz. was examined in connection with an application by the Magma King Manganese Co. for Governmental aid. The application, docketed as DMEA-2603, contained a proposal for exploring the mine at a cost of $59,727 with the object of developing sufficient ore to justify a milling operation. During the field investigations the applicant revised the proposal to a project that could be completed at a cost of $23,100.

The Ajax mine was first opened in 1906. The next period of operation was during 1947 and 1948 when production amounted to about 5 tons of 60 percent lead ore and 3 carloads of ore containing approximately 8 percent lead, 6 percent zinc, 0.14 percent copper and 1.2 ounces of silver a ton. During 1950, the mine was dewatered and sampled and some diamond drilling was done. The property was then inactive to April 1952 when it was taken over by the Magma King Manganese Co. under a lease and option agreement. The company put down one diamond drill hole, took a few underground check-samples, started construction of a skip pocket and has kept the mine dewatered.

Schist, probably pre-Cambrian age, is cut by 2 prominent fissure veins. The veins dip 45 to 65 degrees to the west and have northerly strikes. To the south, they converge at the Ajax shaft. A deposit of lead-zinc ore has been partially developed at the shaft and ore has been cut by diamond drill holes at two widely separated places north of the shaft. The veins of the mine workings consist mainly of

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1/ Geologist, U. S. Geological Survey
2/ Mining Engineer, U. S. Bureau of Mines

quartz in which galena and sphalerite occur as masses ranging up to 4 inches wide by 2 feet long and as grains from an eighth to one inch in size. Galena and sphalerite also occur in brecciated wall-rock.

The principal workings consist of a 180-foot inclined shaft from which about 200 feet of drifts have been driven from the 50- and 176-foot levels. Other workings consist of 8 diamond drill holes, 6 surface and 2 underground, and a few shallow pits.

The mine is equipped for a small operation. Structures on the property consist of a headframe and 2 buildings and several small houses at the camp, about one-half mile from the mine. The mine makes 3 to 5 gallons of water a minute.

The revised exploratory proposal consists of drifting 400 feet northerly from the north face of the 176-foot level, and the driving of four 50-foot raises and the drilling of 500 feet of diamond drill holes, in a maximum of 6 holes, from favorable sites developed by the proposed drift. The applicant proposes to do all preliminary work at no expense to the Government and to carry out the proposed explorations with Governmental aid on the following unit and total cost basis.

Drifting, 400 ft. @ $35.00 per foot	$ 14,000.00
Raising, 200 ft. @ $33.00 per foot	6,600.00
Drilling, 500 ft. @ $5.00 per foot	2,500.00
Total cost	$ 23,100.00

Estimates indicate the preliminary work can be completed in one month and that the exploratory work will require 9 months.

Conclusions regarding the proposed exploratory program follow:

1. Ore mineralization appears to be confined to zones of structural deformation. A partially developed deposit contains estimated total reserves of about 14,000 tons of 10 percent combined lead-zinc ore, and ore of minable widths has been indicated by diamond drilling at 2 widely separated places on one of the veins. A possibility exists that other deposits may be encountered on both veins. The discovery of ore by drilling appears to have been fortuitous because controls of their localization are not readily evident on the surface.

2. The proposed explorations are properly designed and have a fair chance of indicating sufficient ore to justify a small operation under favorable economic conditions. Unit costs of the operations, as proposed by the applicant, are reasonable.

3. Efficient supervision of the work is expectable if supervised by the applicant's present superintendent.

Approval is recommended for the proposed project that can be completed in 10 months at a cost of $23,100.

MAGMA KING MANGANESE MINING COMPANY
AJAX MINE
MINERAL HILL MINING DISTRICT
PINAL COUNTY, ARIZONA
DMEA 2603

LEAD AND ZINC

Geology

By
John N. Faick
Geologist, U. S. Geological Survey

MAGMA KING MANGANESE MINING COMPANY
AJAX MINE
MINERAL HILL MINING DISTRICT
PINAL COUNTY, ARIZONA
DMEA 2603

LEAD AND ZINC

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INTRODUCTION

An application for Government aid in exploring the Ajax lead-zinc mine has been received by the Defense Minerals Exploration Administration. The application (DMEA 2603) is from the Magma King Manganese Mining Company, Superior, Arizona, of which Mr. Ralph J. Pomeroy is president. The Ajax mine was examined August 25 to 27, 1952, by DMEA representatives.

GENERAL GEOLOGY

The Ajax mine is located in the Mineral Hill mining district (Fig. 1) about 8 airline miles southwest of Superior, Arizona. The mine is near the head of Cottonwood Creek, a dry wash draining relatively rough mountainous desert terrain between the valleys of the Gila River on the south and Queen Creek on the north. Maximum relief in this area is about 500 feet.

The mountains in the vicinity of the Ajax mine are composed of chlorite schists of probable pre-Cambrian age. The schist is relatively fine-grained, greenish-gray and uniform in character. The schistosity, which is vague and poorly developed, is gently folded into small easterly trending anticlines and synclines that have dips ranging from 10° to 30° on the flanks.

GEOLOGY OF THE AJAX MINE

Within the Mineral Hill district there are many small mines and prospects of which the Ajax appears to be one of the most promising. The mine explores (Fig. 5) part of a conjugate vein system (Fig. 3) by means of a 180 foot shaft inclined westward about 65° and by two drifts. The upper drift, or 50 level, extends 50 feet north of the shaft and 60 feet south of it. The 180 level consists of a 30 foot crosscut to the vein, with drifts extending about 80 feet north and 50 feet south of the crosscut. Eight diamond drill holes have been drilled in the area (Figs. 3 and 4).

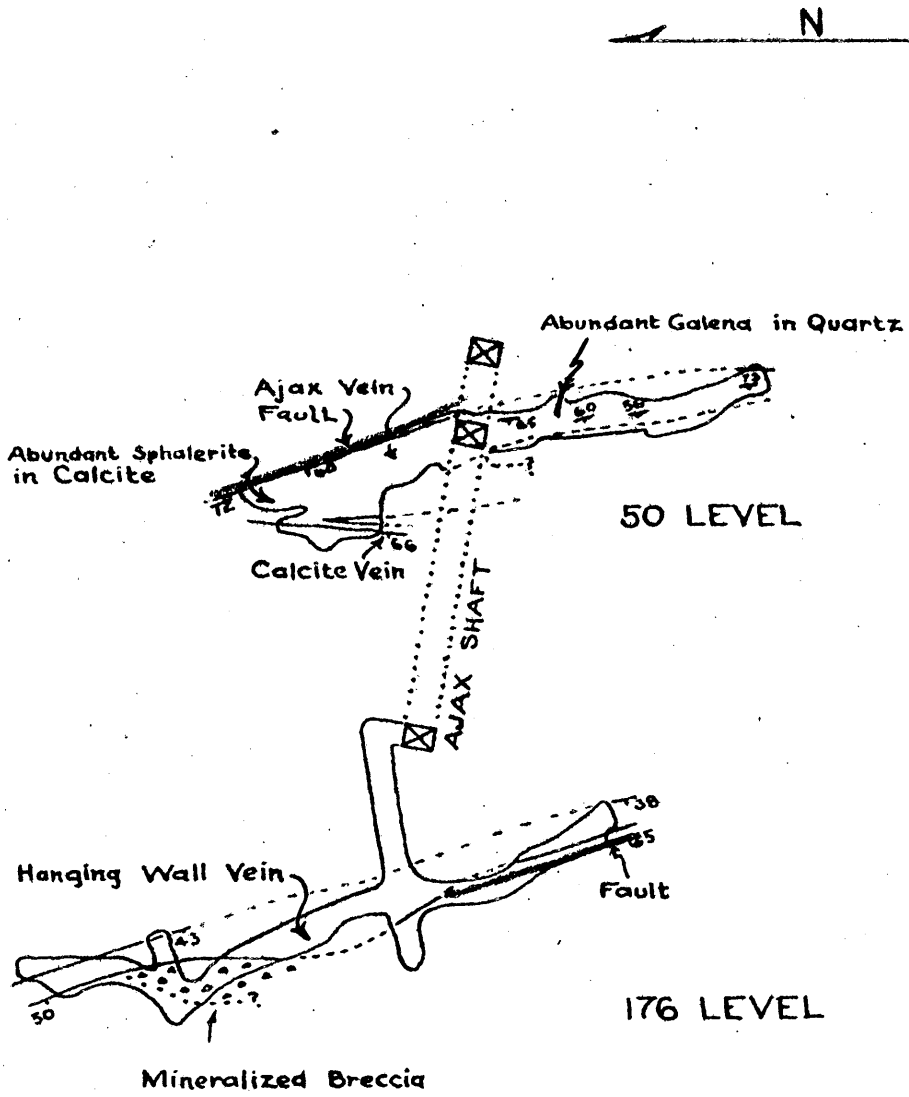

Fig. 5 - Geologic Map, Ajax Mine Workings, Pinal County, Arizona
DMEA 2603 Scale 1" = 40'

The Ajax vein system occupies a fault zone in the schist and the veins are exposed at the surface more-or-less continuously for a distance of about 1800 feet north of the Ajax shaft and about 200 feet south of it. Two prominent branches of the vein system converge at the Ajax shaft, and the mine workings have explored the western or hanging wall branch vein. This vein strikes approximately N. 20° W. but south of the shaft where the two veins converge the strike is nearly south. The footwall or east vein strikes nearly north for a distance of about 500 feet north of the Ajax shaft, then appears to change its strike to N. 20° W. or approximately parallel to the hanging wall vein. The dip of both veins at the surface is about 65° west but flattens with increasing depth and on the 180 level the dip of the hanging wall vein ranges from 40° to 45°. Where the veins cross Cottonwood Wash there is a zone in which the veins appear to be structurally deformed, suggesting that they may have been folded or faulted. Some brecciation of the enclosing schist was noted but the cause of the brecciation was not apparent nor could the geology be satisfactorily interpreted. It is possible that the two main veins may merge in this zone, or another branch vein may intersect the footwall vein.

The vein material consists of two distinct types which have been deposited at different periods of time and under distinctly different conditions. The earlier vein filling consists of specularite in massive, glassy quartz. This early period of mineralization was followed by a relatively late influx of milky quartz and white calcite, accompanied by sphalerite, galena and trace amounts of chalcopyrite. The late-stage vein material is prominently banded, and many comb structures and drusy cavities are present in it.

These characteristics are interpreted as indicating an epithermal origin, and for this reason the writer believes the deposit should not be expected to continue to depths greater than a few hundred feet.

The late-stage epithermal type of vein material contains all of the observed sulfide minerals, and locally these are sufficiently abundant to constitute low-grade ore. Galena and sphalerite occur as coarse grains from about one-eighth of an inch to about one inch in maximum dimension. These are dispersed erratically throughout the vein and in many places constitute from 10 to 20 percent of the vein filling; however, in some places the vein is barren. Masses of galena and sphalerite from 1 to 4 inches wide and from a few inches to about 2 feet long are present in many places within the vein. Ore minerals are also present in some of the brecciated wall rock, as for example about 50 feet north of the shaft on the 180 level. Here a lenticular mass of brecciated schist (Fig. 5) is thoroughly impregnated with calcite, quartz, sphalerite, and galena. These occur in small seams and masses cementing part of the breccia. The breccia mass is about 50 feet long, and about 15 feet wide but the sulfides are confined to an area about 30 feet long and about 10 feet wide. This mineralized breccia is exposed only on the 180 level but it is assumed that the breccia extends at least a short distance above and below the level.

Deformation along the vein zone has disrupted some of the rocks and locally they have been weakened by what appears to be late-ore or post-ore movement. It is probable that deformation and hydrothermal alteration have weakened the wall rocks to such an extent that underground support will be required in some zones if the vein is mined.

PRODUCTION AND GRADE

Little ore has been produced from the mine. Shipments that are thought to represent the total production are as follows:

Date	Tons	Percent Lead	Percent Zinc	Percent Copper	Ounces Silver
12-10-47	0.75	19.0	Trace	0.12	1.50
12-10-47	3.02	60.8	--	Trace	3.9
12-16-47	35.17	7.35	5.4	0.12	1.05
1-22-48	34.85	7.2	3.2	0.12	1.05
2-5-48	1.53	60.0	--	--	4.0
2-9-43	16.40	10.3	2.8	0.20	1.45
Total	91.72				

These shipments are products of selective mining of some of the higher grade portions of the vein and are probably also upgraded by hand sorting. The largest shipments, containing relatively low values, are probably not much higher grade than many parts of the vein.

Many samples (Fig. 6) have been taken of the vein. Most of the samples were taken before the applicant acquired the property. Several were taken by the applicants, and the DMEA examiners took 5 samples as a means of checking and verifying the others. The samples taken by DMEA provide a fair check on the others but are slightly lower grade. It was noted by examination of the mine workings that the sample widths previously reported are exaggerated, and could not be substantiated. Because of these erroneous widths it is not possible to properly weigh the samples and accurately compute the lead and zinc content of the vein. The lead content is greater than the zinc content in the upper part of the mine and the zinc content is greater than that of the lead in the lower part of the

mine. The copper content of the ore is negligible, but it is probable that both copper and silver values will be recovered with the lead and zinc if the ore is beneficiated.

EXPLORATION

In addition to the mine workings an attempt has been made to explore the vein by 8 diamond drill holes, two of which encountered sufficient ore to be of possible commercial value. Hole No. S-6 (Figs. 3 and 4) penetrated ore about 200 feet north of the shaft and hole No. S-2 penetrated ore about 400 feet north of the shaft. At present there is insufficient information to interpret the significance of these penetrations but it appears possible that the holes discovered additional ore shoots. Hole No. S-2 appears especially significant because it may have penetrated the hanging wall vein zone beneath an iron-stained brecciated schist that could be interpreted as being the outcrop of a mineralized zone. The breccia is exposed in a small elliptical area about 20 feet in maximum dimension near the place where the veins cross the floor of Cottonwood Wash.

The results of the underground holes, Nos. 1 and 2 (Fig. 6), were not conclusive. One was drilled into the hanging wall of the hanging wall vein where there was no reason to expect to find additional ore. The other was drilled into the footwall and should have penetrated the footwall vein. The failure of this hole to locate ore is unfavorable evidence, but is not enough to condemn the footwall vein as being unmineralized.

Holes S-1, S-3, S-4, and S-5 (Fig. 4) were drilled to explore outlying or deep parts of the vein. These penetrated considerable mineralized material having very low values but veins of minable width

and grade were not encountered. Available data are insufficient to correctly interpret the significance of these holes, but the writer believes the veins change character by splitting into many small veinlets. It appears as if veins of a size large enough to mine do not exist at depths greater than a few hundred feet.

Results of previous exploration and development suggest that additional exploration of the Ajax vein system is justified. There are about 14,000 tons of reasonably well indicated and inferred ore in the partly developed ore shoot and it is believed that exploration may prove the existence of several times this amount. Additional ore is expected to be found near the ore penetrations of diamond drill holes S-2 and S-6 and at places along the vein where either the early vein filling or country rock was shattered by structural deformation to permit access by the late-stage mineralizers. It is important to note that the footwall vein has not been explored, except possibly to a very small extent on the 50 level. This vein has a very prominent outcrop and the presence of vugs, cavities and siliceous boxworks suggest that sulfide minerals may have been leached out of it. The footwall vein should be as well mineralized as the hanging wall vein and deserves exploration.

Examination of the Ajax mine and discussion of the applicant's proposed exploration has resulted in making some minor revisions in the proposals, and these will result in more effective exploration methods at worthwhile savings in cost. The revised program (Fig. 3) is to drive 400 feet along the vein on the 176 level to explore the ore penetrated by holes S-2 and S-6. Then, using the 176 drift as a base, it is proposed to drill 4 holes to test the footwall vein and to

drive four 50-foot raises to test whatever ore is found along the drift. Two additional drill holes are allowed to delineate whatever ore may be found. Selection of the sites for drilling or raising must meet with the approval of the examining engineer.

The total cost of this exploration is about $23,000, one-half of which is to be contributed by the Government. The revised project is feasible and well justified in the opinion of the examiners. The program may not block out enough ore to justify erection of a mill, but will determine whether the Ajax vein system is capable of producing important amounts of lead and zinc.

ORE RESERVES

Ore reserve estimates submitted by the applicant amount to about 25,000 tons of developed and probable ore. This estimate appears to be too high because it is based on exaggerated vein widths rather than the actual vein widths. The applicant's grade estimates are also somewhat greater than those of the examiners, being about 2 percent higher in combined lead and zinc.

The ore-shoot developed by the Ajax shaft and levels is sufficiently well explored and sampled to be classed as indicated ore. Vein material containing significant amounts of galena and sphalerite is exposed along both the 50 foot and 176 foot levels. The vein material in the south end of the 50 level drift probably cannot be recovered because it is so thoroughly oxidized that it is not amenable to concentration and is probably too low-grade to constitute shipping ore. It is assumed that similar oxidation has taken place in all the ore within about 30 feet of the surface, therefore minable ore is thought to extend only 20 feet above the 50 level. The vein widths at the

50 level are from 5 to 12 feet, but average about 7 feet, and ore is exposed along the level for a distance of about 70 feet. The block of ore above 50 level is estimated to contain about 800 tons of indicated ore. The grade of the ore is about 9 percent lead, and 3 percent zinc as estimated from several samples and 3 small shipments.

The main ore shoot is also explored by the 176 level where sphalerite and galena are present in the vein for a strike distance of about 110 feet. The ore shoot is exposed in part of the Ajax shaft and the ore is assumed to be continuous between the 176 level and the 50 level and the vein thickness will average about 7 feet. It is conservatively estimated that about 5700 tons of ore are present in the ore shoot, between the 50 and 176 levels. By evaluating many samples (Fig. 6) taken along the shaft and on the 176 level it is estimated that the average grade of the ore is about 1 percent lead and 8 percent zinc. The ratio of lead to zinc decreases gradually with depth from the 50 level to the 176 level.

The average grade of all the ore in the presently developed ore shoots at the Ajax mine is estimated at 4.4 percent lead and 5.9 percent zinc.

Reserves above the 176 foot level are estimated at 47 tons per foot of depth along the dip of the vein and it is presumed that the ore may be safely projected 150 feet below the 176 level. The ore in the first 50 feet of this projected depth is classified as indicated ore and the remaining 100 feet is considered as inferred ore. About 2300 tons of ore is indicated, and about 4700 tons is inferred to be present. The grade is assumed to be the same as on the 176 level, or about one percent lead and 8 percent zinc.

Ore penetrations were made by diamond drill holes S-6 and S-2 (Figs. 3 and 4) and at each of these locations it is hoped that other ore shoots are present that may contain as much ore as is present in the main shoot. About 1000 tons of indicated ore is assumed to be present at each drill hole penetration. Assays on the core of the hole S-2 yield from 18 to 25 percent zinc but it is believed that the hole accidentally penetrates a rich portion of the vein and this block of ore should not be expected to be much higher grade than developed parts of the vein. The core from hole S-6 has not been assayed but inspection reveals it to be similar in grade to the ore in the developed portion of the mine, and by comparison is estimated to contain about 4 percent lead and 6 percent zinc.

It is assumed that a few thousand tons of ore may be present in both the zones where ore was found by diamond drill holes S-2 and S-6. This ore would be in the inferred category but no estimate of tonnage can be made because of the lack of data. It is also assumed that additional ore will be found in the footwall vein which has not been explored by mine workings.

Although sufficient data are not available to justify making a tonnage estimate of all the inferred reserves, it is thought that these will be several times as great as the indicated reserves.

The ore reserve estimates are summarized as follows:

Location	Tons	Percent Lead	Percent Zinc
	Indicated Ore		
Above 50 level	800	9	1
Between 50 and 176 levels	5700	1	8
From 176 level to 50 ft. below it	2300	1	8
At drill hole S-2	1000		10-15
At drill hole S-6	1000	4	6

Location	Tons	Percent Lead	Percent Zinc
Inferred Ore			
From 50 to 150 ft. below 176 level	4700	1	8
Other possible ore shoots in both veins	Unknown amounts but possibly several times more than indicated reserves.		

CONCLUSIONS

Examination of the Ajax vein system reveals that important amounts of galena and sphalerite are present in a quartz-calcite gangue having epithermal characteristics. About 14,000 tons of ore, containing about 10 percent combined lead and zinc, are reasonably assured in the old mine workings. Inferred ore may amount to several times this amount in unexplored or incompletely explored parts of the veins. Additional exploration is necessary to determine whether there is sufficient ore in the veins to support sustained mining and milling operations. The revised exploration proposals are feasible from an engineering point of view, are reasonably easy to accomplish at a total cost of $23,000, and may discover significant amounts of lead and zinc.

RECOMMENDATIONS

It is recommended that the revised exploration proposals be approved because there is a possibility that significant amounts of lead and zinc may be discovered at a reasonable cost within a few months after the project is started.

DMEA-2603, MAGMA KING MANGANESE COMPANY
AJAX MINE (LEAD-ZINC), PINAL COUNTY, ARIZONA

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

September 1952

DMEA-2603, MAGMA KING MANGANESE COMPANY
AJAX MINE (LEAD-ZINC), PINAL COUNTY, ARIZONA

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INTRODUCTION

The Ajax Mine (Lead-Zinc), Pinal County, Ariz. was examined in connection with an application for Governmental aid by the Magma King Manganese Company. The application was made to the Defense Minerals Exploration Administration and is docketed as DMEA-2603. It contained a proposal for exploring the property at an estimated cost of $59,727, the cost to be divided equally between the applicant and the Government. The exploratory work, consisting of drifting, raising and diamond drilling, was designed to indicate the presence of sufficient ore to justify construction of a concentrating plant.

The examination was made August 25-27, 1952 by T. M. Romslo, Bureau of Mines, and J. N. Faick, Geological Survey, with the object of determining if the requested assistance could be justified. It was confined to the area of the proposed project that represents a small portion of the property held by the applicant. Ralph J. Pomeroy and Frank L. Metler, President and Superintendent of the Magma King Manganese Company, respectively, were at the mine during the investigations.

LOCATION, TOPOGRAPHY AND CLIMATE

The Ajax mine is about 8 air-miles southwest of Superior, Ariz., the home of the Magma Copper Company (figure 1). Superior, is on U. S. Highway 70 and is the terminus of a branch of the Southern Pacific Railway that connects with its main-line and the Atchison, Topeka and Santa Fe Railroad at Phoenix, about 50 miles westward.

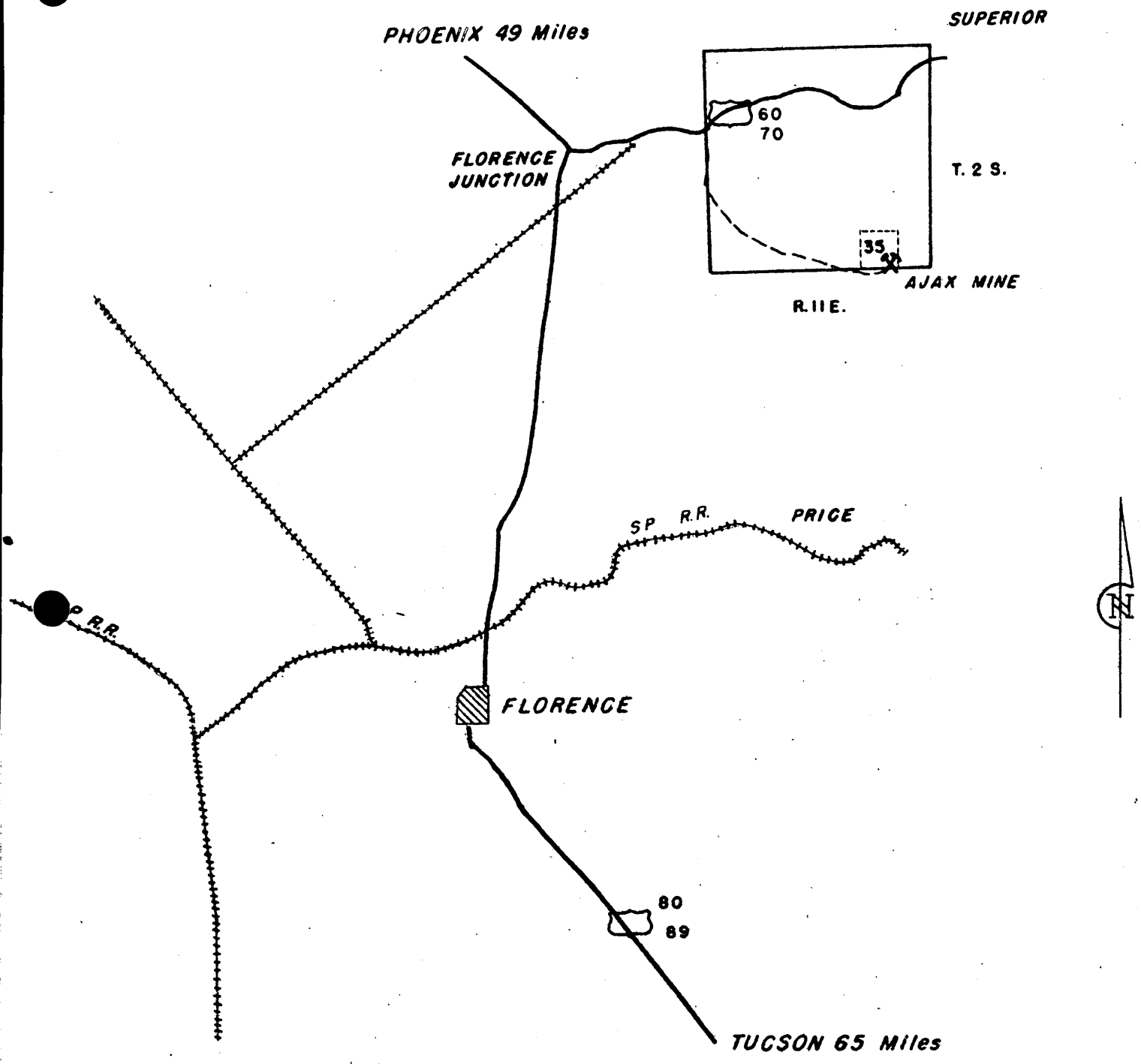


Fig. I LOCATION MAP

DMEA 2603

MAGMA KING MANGANESE CO.'S AJAX MINE, PINAL CO., ARIZ.

SCALE: 1" = 4 MI.

The mine is accessible from Superior by traveling 11 miles westerly on the highway and thence 9 miles southwesterly over a graded desert road that contains no excessive grades. Short stretches of the road that cross or follow dry-washes are impassable for brief period after heavy rainfalls.

The nearest railroad shipping point is Price, about 12 miles south of the property by desert road.

The Ajax mine is at an altitude of about 3,000 feet above sea level. It is in an area of moderately rugged topography consisting of sharp mountain ridges that slope steeply to narrow valleys. On the property, the altitude ranges from about 3,000 to 3,500 feet.

The mountain slopes support a sparse growth of desert vegetation, mainly cacti and catclaw. Palo Verde and mesquite occur along the bottom of the valleys.

There are no permanent streams in the area. Drainage is south to the Gila River.

There are no readily accessible records of climate for places near the property. However, it can be said that the climate is typical of the lower-altitude regions of southern Arizona. Temperatures at the property probably show an annual range from a few tens of degrees below freezing to near 110 degrees. Precipitation, probably between 10 and 15 inches yearly, occurs mainly as heavy rain storms during July and August. Light rainfalls and a few snow flurries are common to the winter months.

HISTORY AND PRODUCTION[1/]

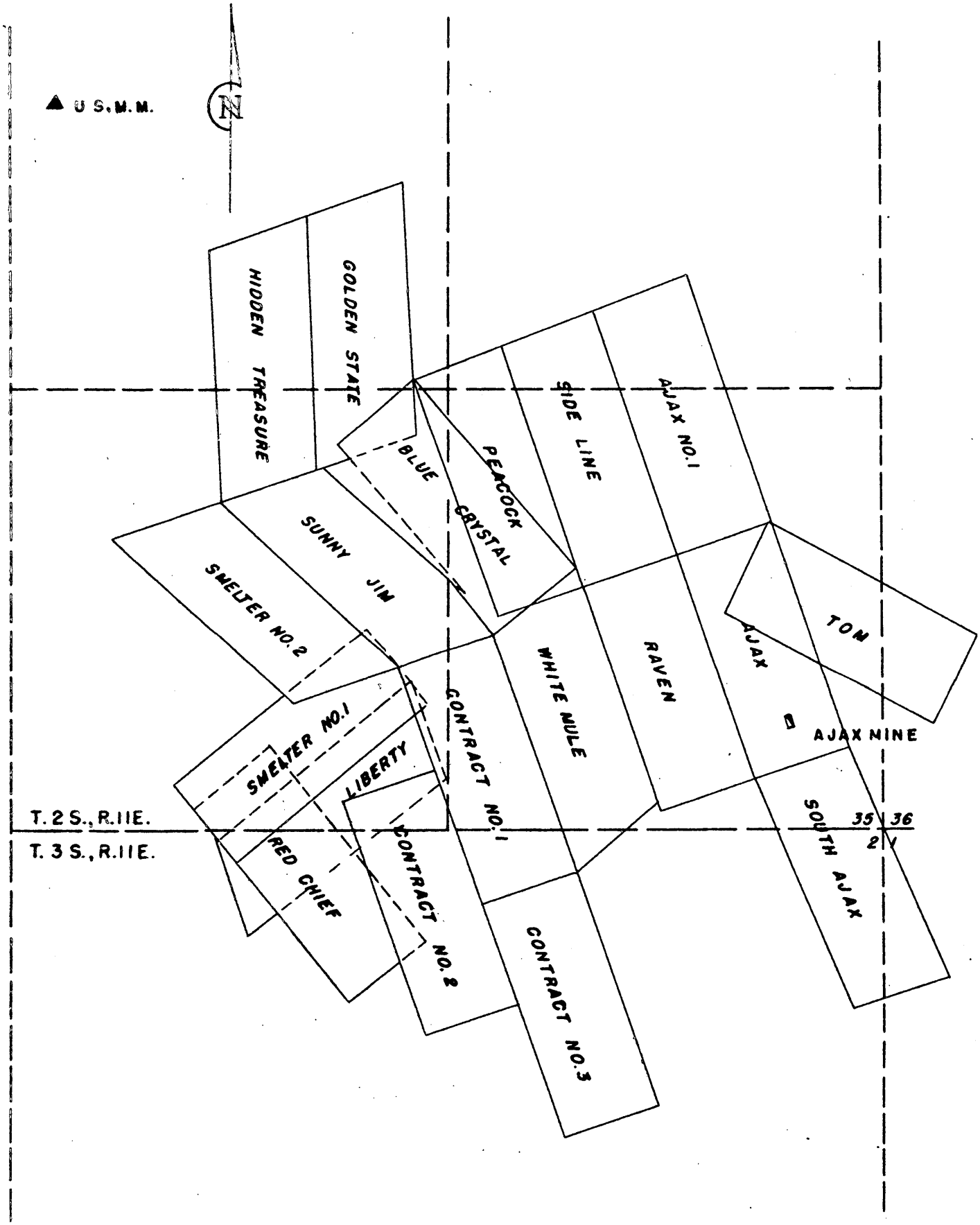
The Ajax mine was first opened in 1906 when it was developed to its present inclined depth of about 180 feet. There are no available production records from this operation but it is probable that little or no ore was shipped. The mine was then inactive to 1947. During 1947 and 1948, lessees shipped 5.25 tons of ore containing about 56 percent lead and 4 ounces of silver a ton, and 3 carloads of ore averaging approximately 8 percent lead, 6 percent zinc, 0.14 percent copper and 1.2 ounces of silver a ton. In 1949 the mine was dewatered and a small amount of drifting was done on the 176-foot level.

During 1950, the Magma Copper Co., sampled the underground workings and the Miami Copper Co. carried out a diamond-drilling project. The drilling consisted of 2 holes from the 176-foot level and 5 holes from the surface. The present operations, by the Magma King Manganese Co., were started April 1952. The company has put down a diamond-drill hole from the surface, check-sampled part of the underground workings, started construction of a skip pocket, and has kept the workings unwatered.

PROPERTY AND OWNERSHIP

The property consists of a group of 3 patented and 16 unpatented lode mining claims in Secs. 35 & 36, T. 2 S., R. 11 E. and Secs. 1 & 2, T. 3 S., R. 11 E., Mineral Hill Mining District, Pinal County, Ariz. (figure 2).

1/ Information supplied by Ralph J. Pomeroy and Frank L. Metler, President and Superintendent of the Magma King Manganese Company, respectively.



SCALE: 1" = 800' (APPROX.)

DMEA 2603

CLAIM MAP

Fig. 2 MAGMA KING MANGANESE CO.'S AJAX MINE, PINAL CO., ARIZ.

Magma King Manganese Co., the applicant, holds all of the above property by the following agreements.

1. The Ajax and Ajax No. 1 patented claims were assigned by the owners, Mr. and Mrs. Walter S. Smith and Rae L. Fraiser, Coolidge, Ariz., to Louis Hennig and Robert F. Dannelley, Pinal County, Ariz. for a period of 8 years in a Lease and Option Agreement dated August 10, 1948. The agreement was assigned to the Apex Mines, Incorporated and then to the applicant.

2. The other patented claim, the Raven, was assigned by the owners of the Ajax and Ajax No. 1 claims to the Apex Mines, Incorporated under the terms and conditions of the Lease and Option Agreement covering the Ajax and Ajax No. 1 claims. The Apex mines, Incorporated, later transferred its rights to this claim, to the applicant.

3. The 16 unpatented claims were assigned by the owners, Mr. and Mrs. G. O'Dell, Phoenix, Ariz. and Mr. and Mrs. Frank M. Allen, Gilbert, Ariz. to Louis Hennig and Robert F. Dannelley for a period of 8 years in a Lease and Option Agreement of October 16, 1948. This agreement was assigned to the Apex Mines, Incorporated and then to the applicant. The terms of this agreement are the same as those covering the above mentioned patented claims.

All of the above agreements call for royalty payments to the owners of 10 percent of the net returns from ore produced. Net returns are defined as the gross amount paid by the purchaser of ore concentrates less charges for transportation, milling, concentration,

smelting and trucking. Royalty payments in all cases are applied to purchase prices of $40,000 for the Ajax and Ajax No. 1 claims, $15,000 for the Raven claim, and $32,000 for the 16 unpatented claims.

Note: The Lease and Option Agreements together with the assignments on the Ajax and Ajax No. 1 claims and the 16 unpatented claims were submitted with the applicant's proposal. Five copies of a letter covering assignment of the Raven claim were obtained during the examination and will be forwarded to the Denver, Colo. office of the Defense Minerals Exploration Administration with this report.

The financial condition of the Magma King Manganese Mining Co. on June 30, 1952 was taken from an Audit Report of the company by Carson and Henry, auditors, Phoenix, Ariz. The balance sheet of the report shows current cash assets of $52,902.63, and current liabilities of $9,600.94. It also shows that the company is authorized to issue 10,000,000 shares of stock and that 2,800,000 shares are outstanding.

The Directors of the Magma King Manganese Mining Co., as presently constituted, are:

"Ralph J. Pomeroy	President	Director	Chandler, Ariz.
Walter C. Smith	Vice President	Director	Coolidge, Ariz.
Loran E. Skousen	Secretary-Treasure	Director	Springfield, N. J.
George N. Goodman		Director	Mesa, Ariz.
J. Frank Gibson		Director	Mesa, Ariz.

Lillie Fraser	Assistant Secretary	Phoenix, Ariz.
Ralph J. Pomeroy	Registered Building Contractor, Has been operator of the Reward Mine, the Blackwater Mine, and the Magma King Property.	
Walter C. Smith	Registered Building Contractor, Registered Civil and Mining Engineer, Pinal County Supervisor (1938-1942) Former County Engineer, Member of the Arizona Bar Association since 1919. Besides acting as operating mining engineer on various mines through out the State he more recently operated the old Reymert Mine near the Ajax property.	
Loran E. Skouson	Banker, with the Chase National Bank for over 20 years, most of which was spent in the Petrolium Dept., of Finance.	
George H. Goodman	Registered Pharmacist, Mayor of the City of Mesa, has engaged in mining operations also.	
J. Frank Gibron	Attorney at Law, practicing in Phoenix, also engaged in mining at various times. One of the owners of the Reward Mine, near Casa Grande, Ariz."	

DESCRIPTION OF THE DEPOSIT

A lead-zinc deposit, at the Ajax shaft occurs at the junction of 2 prominent fissure veins in mica schist of probably pre-Cambrian age (figure 3). Both veins dip from 45 to 65 degrees west. The west or footwall vein strikes nearly north for a distance of about 500 feet north of the shaft. Beyond this point it roughly parallels the N. 20° W. strike of the hanging wall vein. Ore mineralization encountered by diamond-drill holes Nos. S 5 and S6 probably occurs in the hanging wall vein (figure 4).

Two distinct types of vein filling are represented in the partially developed deposit. An early period of mineralization consisting of specularite in otherwise barren quartz has been followed by a

relatively late influx of quartz, calcite, sphalerite, galena, and minor amounts of chalcopyrite. The late stage vein material has definite epithermal characteristics with prominent banding, comb structures and drusy cavities. Galena and sphalerite occur as coarse grains ranging in size from an eighth to about one inch. They are dispersed erratically throughout the vein and in a few places occur in brecciated wall rock. Masses of galena and sphalerite from 1 to 4 inches wide and a few inches to about 2 feet long are present in several places within the vein. A high percentage of the ore minerals occur as oxides to the 50-foot level. Below the 50 level the degree of oxidation decreases rapidily to the 176 level where oxides form an insignificant part of the ore minerals.

ORE RESERVES

The Ajax mine contains no measured ore.

Indicated reserves have been estimated at about 11,000 tons of partially oxidized sulfide ore containing 10 percent combined lead and zinc, and 1.0 ounce of silver a ton. Approximately 9,000 tons of these reserves containing an estimated 4.4 percent lead and 5.9 percent zinc and 1.0 ounce silver is partly developed at the Ajax shaft. The remaining tonnage is equally divided between deposits indicated by drill holes S2 and S6.

Inferred reserves are placed at several times the tonnage of indicated ore. These reserves consist of (1) 4,700 tons of ore containing 1.0 percent lead, 8.0 percent zinc and 1 ounce of silver a

ton in the down-dip extension of the Ajax deposit, and (2) the geological possibility that deposits similar to that at the Ajax shaft may be present at drill holes S2 and S6 and at other places in both veins.

PRESENT STATUS

Operations

Present operations are confined to pumping water from the mine at 3-day intervals. Rough estimates indicate the mine is making 3 to 5 gallons of water a minute.

Development

The principal workings of the Ajax mine consist of a 180-foot inclined shaft from which levels have been driven on the 50- and 176-foot levels (figures 3 and 5). Two holes have been diamond-drilled from the 176 level. Surface development consists of 6 diamond drill holes and a few shallow pits and trenches. The locations of the diamond drill holes are shown on figure 3 and vertical sections through the drill holes are shown on figure 4. Miami Copper Co., according to the applicant, drilled the underground holes and surface holes 1 to 5. Surface hole no. 6 was drilled by the applicant.

For possible future reference, all drill-hole data was copied and filed in the office of the U. S. Bureau of Mines, Tucson, Ariz.

Surface Plant

The following buildings, all of wood-frame construction and in a good state of repair, are on the property. One of 2 buildings at the mine, houses the hoist and office. The other building contains an

electric generating plant and a machine shop. Other buildings on the property are located at the mine camp, 0.7 miles from the mine on the road to Superior. They consist of boarding house, a bunk house with change room, a storage building, and a pump house that also contains an electric-light plant.

Other structures at the mine consist of a 30-foot "A" type head-frame, a 100 ton ore bin, and a powder magazine.

Equipment

The mine is completely equipped for a small operation. All equipment except a rented mine hoist and a 315-cu. ft. portable Diesel compressor, is owned by the applicant. Company-owned major equipment consists of the following:

1 - 35 K.V.A. Diesel-electric generator set.

1 - 7.5 K.V.A. Diesel-electric Generator set.

1 - 1951, International pickup truck.

1 - 1948, 1½-ton, Flat-bed Ford truck.

1 - 20 H.P., I.R. Motopump

1 - 5 H.P., I.R. Motopump

1 - C. P. sludge pump

1 - Shaft skip

2 - Ore cars

1 - C. P. 55 Core-drill outfit, complete

1 - 12 B, Eimco-Finlay loader (not on property)

Ore Testing

Correspondence from the Denver Equipment Co. to a former lessee of the Ajax mine was furnished the examining engineers by R. J. Pomeroy. The correspondence stated that tests had been made on ore furnished by the lessee but did not give the results of the tests. Pomeroy said he had learned that the testing gave favorable results.

PROPOSED EXPLORATIONS

A revised exploratory program was worked out during the field investigations by the examining engineers and the representatives of the applicant. It was submitted by the applicant in a letter of August 27, 1952 to W. R. Storms, Chief, Arizona-New Mexico Branch, Mining Division, U. S. Bureau of Mines, Tucson, Ariz.

Under the revised program the applicant proposes to do all preliminary work at no expense to the Government and to then carry out the following explorations, at the indicated unit costs, with Government assistance (figure 3).

1. Drifting; Drift 400 feet northerly from the north end of the 176 level, at $35.00 per foot.
2. Raising; Run four 50-foot raises at favorable sites developed by the proposed drift, at $33.00 per foot.
3. Drilling; Diamond drill 500 feet in a maximum of 6 holes from favorable sites, at a cost of $5.00 per foot.

The writer's suggested description of the project as to sequence of operations and work-specifications follows.

1. Drift; to follow the hanging wall vein, to have a minimum cross-section of 5- by 7 feet, and to be completed before initiating the raising and drilling operations.

2. Raises; to be from sites approved by the Government, to have a minimum cross-section of 5- by 7 feet, to have a timbered manway, and to be driven without a chute if permitted under the state mining laws.

3. Drill holes; to be from the 176 level at sites approved by the Government, to be designed to test the footwall vein and to partially delimit ore deposits encountered by test holes and to be of "AX" size, or larger. The drilling and raising operations to be conducted similtaneously, if possible.

Time Schedule.	Months
Preliminary work (shaft repair, etc. at applicant's expense	1
400 feet of drift @ 3 ft. per day, 133 days or	6
200 feet of raises @ 3 ft. per day, 67 days or	3
Drilling concurrent with raising	0
Total	10 months.

COST OF PROJECT

The cost of the revised project would be as follows:

Drifting, 400 ft. @ $35.00 per ft.	$ 14,000.00
Raising, 200 ft. @ $33.00 per ft.	6,600.00
Drilling, 500 ft. @ $5.00 per ft.	2,500.00
Total cost	$ 23,100.00

The unit costs are approximately the same as the estimated unit costs of the applicant's original proposal. In the writer's opinion they are reasonable and can be attained only if the operations are conducted efficiently. This conclusion is based on the following factors:

1. Relatively hard rock and long tramming distances.
2. Necessity of providing artificial ventilation and pumping facilities.
3. Stations must be cut, and timber is required for each raise.
4. Stations must be cut for diamond-drill locations from which relatively short holes will be drilled.
5. Remoteness of property.

PROPOSED FINANCING

The Magma King Manganese Company proposes to carry out the exploratory program provided financial assistance is obtained in accordance with regulations governing Governmental aid. On this basis, the Government's share would be $11,550.00 or 50 percent of the cost of the project, estimated at $23,100.00.

CONCLUSIONS

Significant ore mineralization in the 2 persistent veins of the Ajax property appears to be confined to zones of structural deformation.

The partially developed deposit at the vein intersection contains estimated total reserves of 14,000 tons of 10 percent combined lead-zinc ore.

Minable widths of lead and zinc ore have been penetrated by drill holes at 2 additional places on the hanging wall vein. Discovery of this ore appears to have been fortuitous because controls of their localization are not readily evident on the surface.

The drifting and raising operations of the proposed explorations are properly designed to indicate the extent and grade of drill-hole ore and to explore for and partially delimit other deposits that may occur in the hanging wall vein. Exploration of the footwall vein can then be carried out at little additional cost by drilling from favorable sites developed by the drift.

The chances are fair that the proposed explorations will indicate the presence of sufficient ore to justify a small operation under favorable economic conditions.

The applicant's superintendent is believed to be capable of conducting the projected work in an efficient manner.

The applicant can be expected to finance 50 percent of the cost of the project.

RECOMMENDATION

The conclusions of this report are the bases for recommending approval of the proposed exploratory project. Estimates indicate the project can be completed in 10 months at a total cost of $23,100.

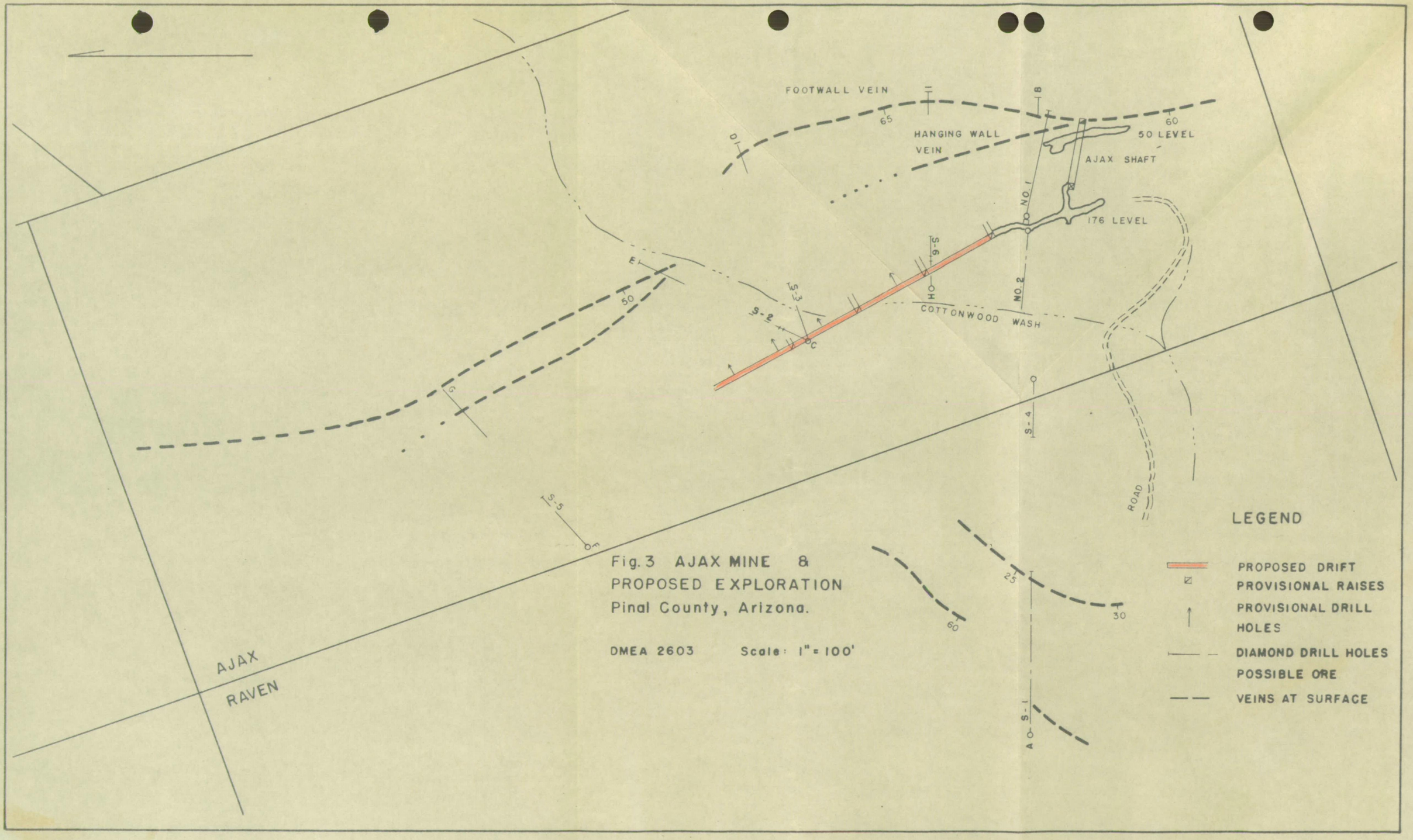


Fig. 3 AJAX MINE & PROPOSED EXPLORATION
Pinal County, Arizona.

DMEA 2603 Scale: 1" = 100'

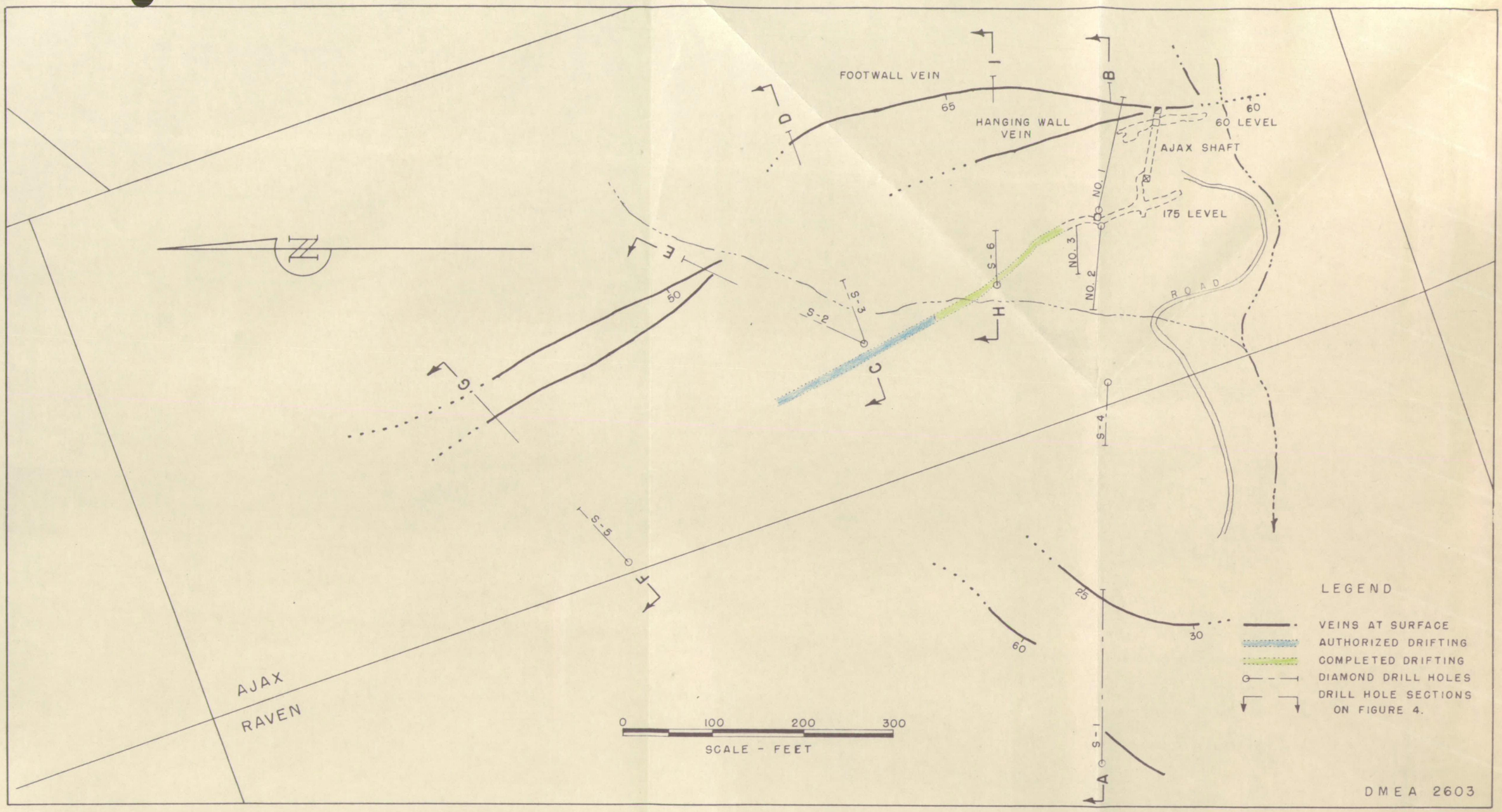


FIGURE 3. - PLAN MAP - AJAX MINE - MAGMA KING MANGANESE MINING COMPANY - PINAL COUNTY, ARIZONA

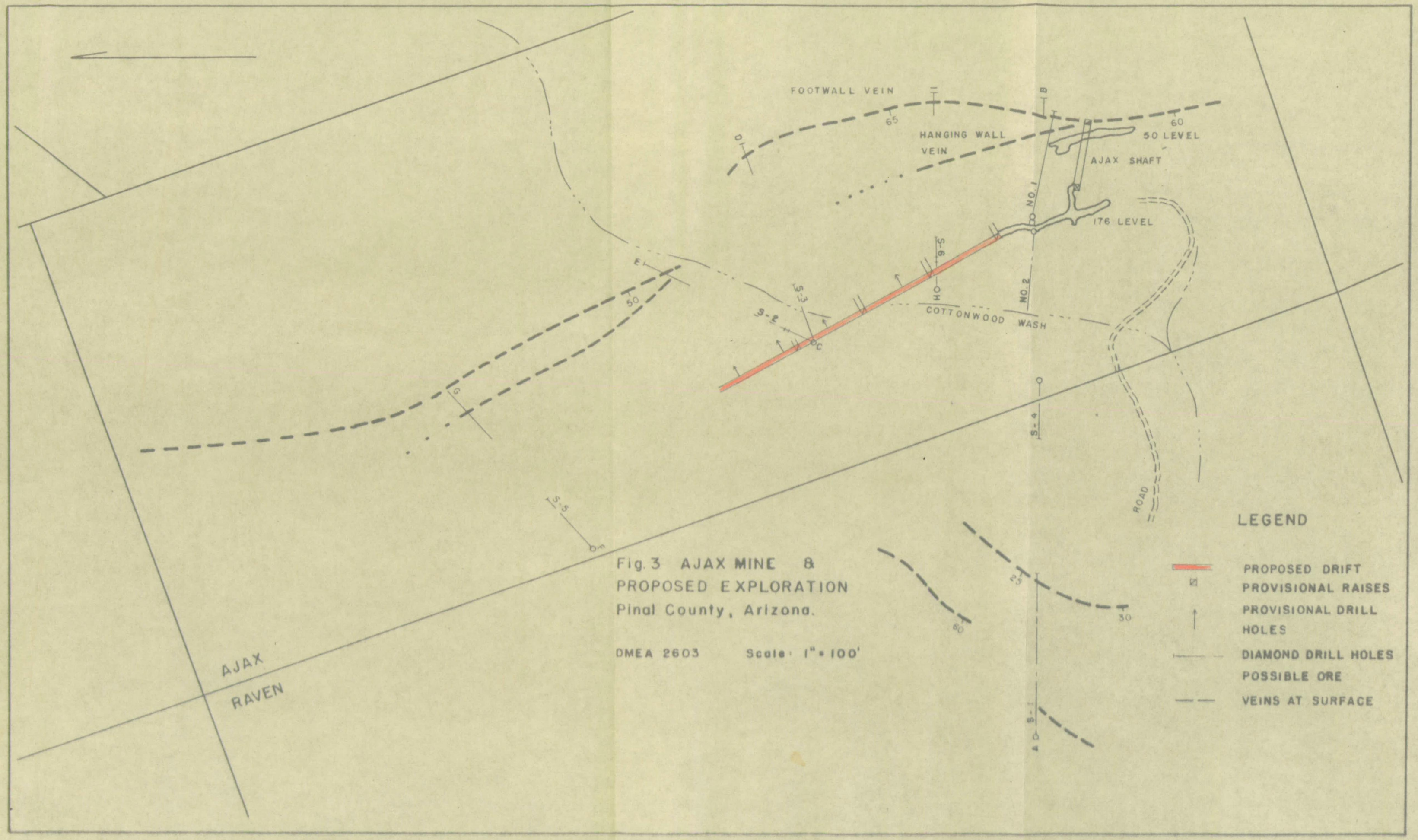
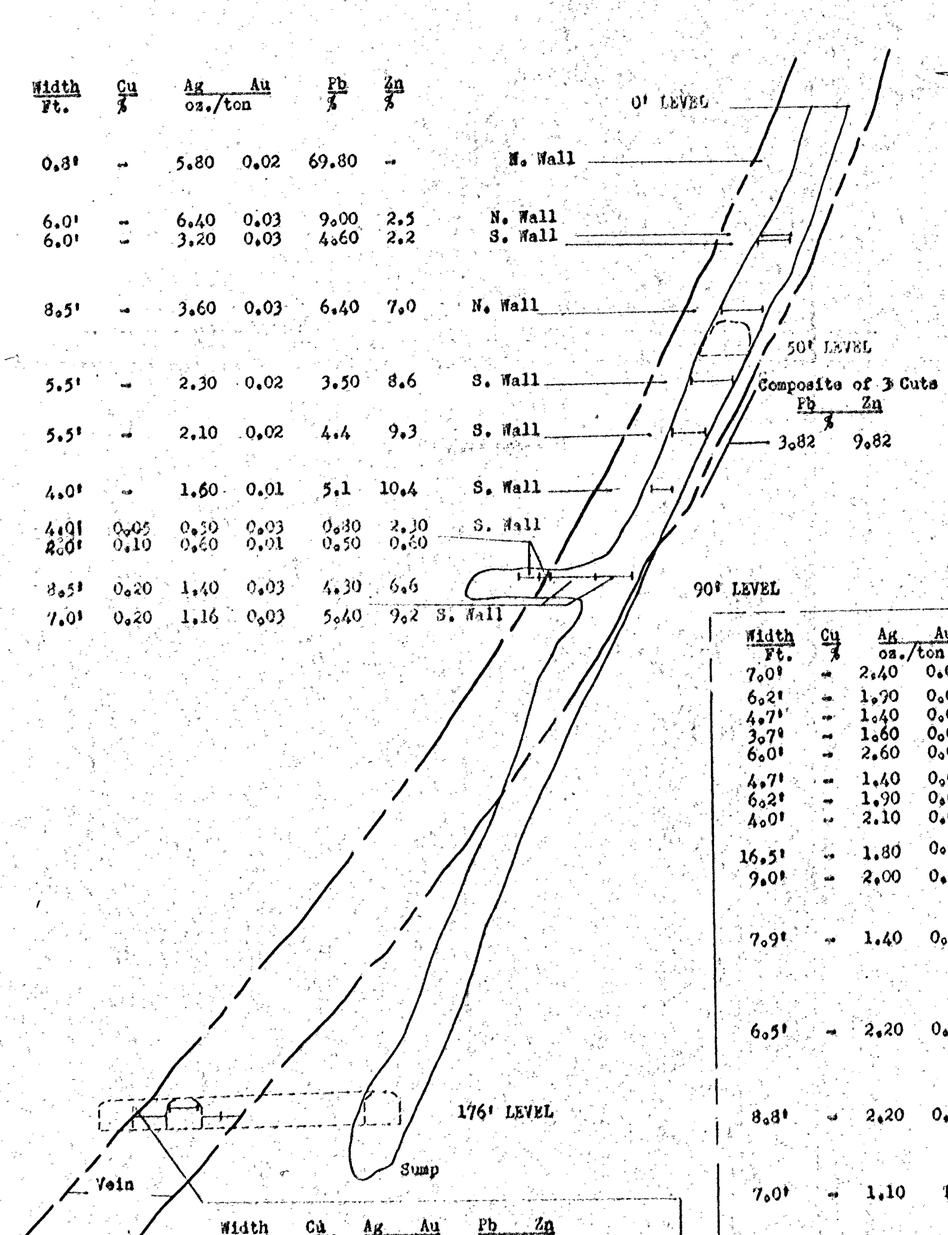


Fig. 3 AJAX MINE & PROPOSED EXPLORATION
Pinal County, Arizona.

DMEA 2603 Scale: 1" = 100'



Width Ft.	Cu %	Ag oz./ton	Au oz./ton	Pb %	Zn %	
0.8'	-	5.80	0.02	69.80	-	
6.0'	-	6.40	0.03	9.00	2.5	
6.0'	-	3.20	0.03	4.60	2.2	
8.5'	-	3.60	0.03	6.40	7.0	
5.5'	-	2.30	0.02	3.50	8.6	
5.5'	-	2.10	0.02	4.4	9.3	
4.0'	-	1.60	0.01	5.1	10.4	
4.0'	0.05	0.50	0.03	0.80	2.10	
2.0'	0.10	0.60	0.01	0.50	0.60	
8.5'	0.20	1.40	0.03	4.30	6.6	
7.0'	0.20	1.16	0.03	5.40	9.2	

Composite of 3 Cuts

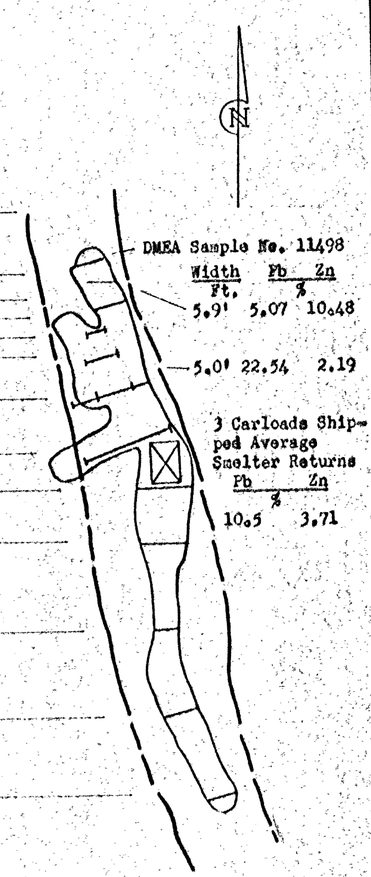
Pb %	Zn %
3.82	9.82

Width Ft.	Cu %	Ag oz./ton	Au oz./ton	Pb %	Zn %	
6.0'	0.10	1.60	0.02	3.60	8.20	W
5.0'	0.05	1.10	0.02	1.70	4.20	
4.0'	0.10	0.50	0.01	2.90	5.30	
3.0'	0.15	0.10	0.03	0.90	3.80	E

VERTICAL SECTION

THROUGH AJAX SHAFT

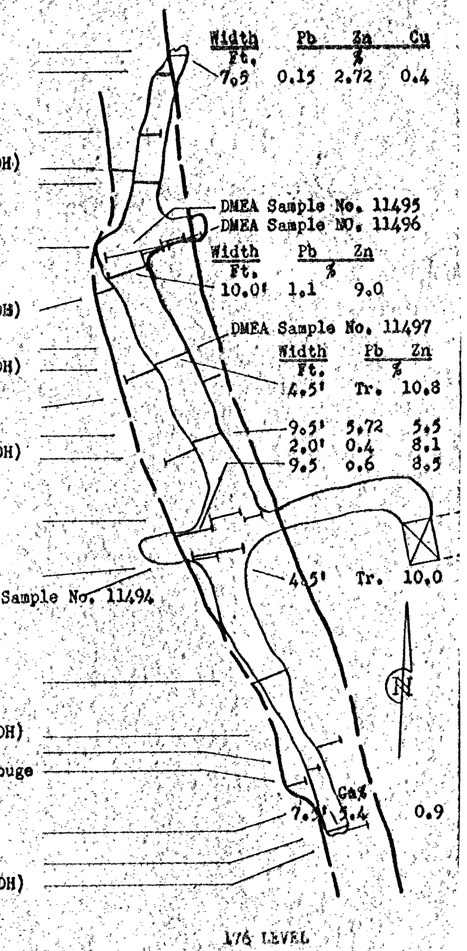
Width Ft.	Cu %	Ag oz./ton	Au oz./ton	Pb %	Zn %	
7.0'	-	2.40	0.02	9.20	14.05	
6.2'	-	1.90	0.02	7.40	11.60	
4.7'	-	1.40	0.01	4.30	8.90	
3.7'	-	1.60	0.01	12.10	3.65	
6.0'	-	2.60	0.02	17.30	1.05	
4.7'	-	1.40	0.01	6.30	6.10	E
6.2'	-	1.90	0.03	12.10	2.30	
4.0'	-	2.10	0.02	4.70	7.20	W
16.5'	-	1.80	0.02	7.30	6.20	
9.0'	-	2.00	0.03	8.60	10.30	
7.9'	-	1.40	0.01	9.70	13.00	
6.5'	-	2.20	0.02	3.40	10.70	
8.8'	-	2.20	0.02	3.60	3.90	
7.0'	-	1.10	Tr.	3.60	2.00	



ASSAY PLAN 50 LEVEL

Width Ft.	Cu %	Ag oz./ton	Au oz./ton	Pb %	Zn %	
6.0'	0.50	4.80	0.08	0.20	0.80	
3.0'	1.10	3.20	0.09	1.20	3.10	
4.0'	0.90	2.30	0.04	1.40	4.60	
6.0'	Tested only for Zinc				5.30	(DH)
5.0'	0.60	0.01	0.04	2.10	3.40	
6.8'	0.40	1.40	0.02	2.70	11.40	W
3.0'	-	0.90	0.03	2.60	9.20	
4.9'	-	2.00	0.02	2.10	8.80	
2.6'	0.40	1.40	0.04	0.60	4.20	E
3.0'	-	1.50	0.01	2.20	11.00	(DH)
6.5'	-	1.40	0.03	1.90	10.40	
6.5'	-	1.40	0.02	3.9	10.90	(DH)
4.0'	-	2.60	0.03	5.70	6.30	
5.0'	-	0.20	0.01	1.90	8.20	
6.5'	-	1.10	0.01	3.40	17.90	(DH)
6.0'	0.10	1.60	0.02	3.60	18.20	W
5.0'	0.05	1.10	0.02	1.70	4.20	
4.0'	0.10	0.50	0.01	2.90	5.30	
3.0'	0.15	0.10	0.03	0.90	3.80	E
5.0'	-	-	-	2.90	14.90	
					DMEA Sample No. 11494	
5.5'	-	-	-	3.50	4.60	
4.5'	-	5.40	0.20	5.80	3.60	(DH)
2.0	0.40	3.40	0.03	22.20	16.30	
4.0'	0.20	2.10	0.03	1.80	3.30	Gouge
2.5'	1.30	7.80	0.40	Not Tested		
5.0'	0.80	4.10	0.06	10.7	6.30	
3.0'	0.60	2.80	0.02	-	-	(DH)

(DH= Drill Hole)



Width Ft.	Pb %	Zn %	Cu %
7.5	0.15	2.72	0.4

Width Ft.	Pb %	Zn %
10.0'	1.1	9.0

Width Ft.	Pb %	Zn %
4.5'	Tr.	10.8
9.5'	5.72	5.5
2.0'	0.4	8.1
9.5	0.6	8.5
4.5'	Tr.	10.0
7.5'	3.4	0.9

ASSAY PLAN 176 LEVEL

DMEA SAMPLE No.	Sample Length	Au oz./ton	Ag oz./ton	%Pb Total	%Pb Oxide	%Cu Total	%Cu Oxide	%Zn Total	%Zn Oxide
11494	8.7'	0.01	0.55	0.85	0.05	0.07	0.02	5.5	1.70
11495	12.2'	0.01	0.4	0.22	0.01	0.17	0.05	8.15	0.05
11496	6.5'	0.01	0.7	0.7	0.04	0.65	0.12	1.7	0.01
11497	6.0'	0.01	0.2	0.4	0.01	0.07	0.02	3.95	0.03
11498	5.0'	0.02	1.3	5.6	3.25	0.15	0.06	8.65	4.05

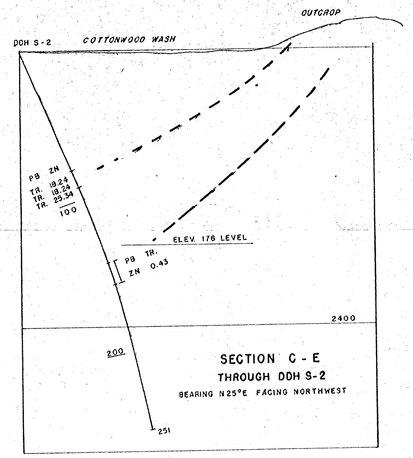
Fig. 6 SAMPLE MAP

MAGMA KING MANGANESE COMPANY'S, AJAX MINE
Pinal County, Arizona

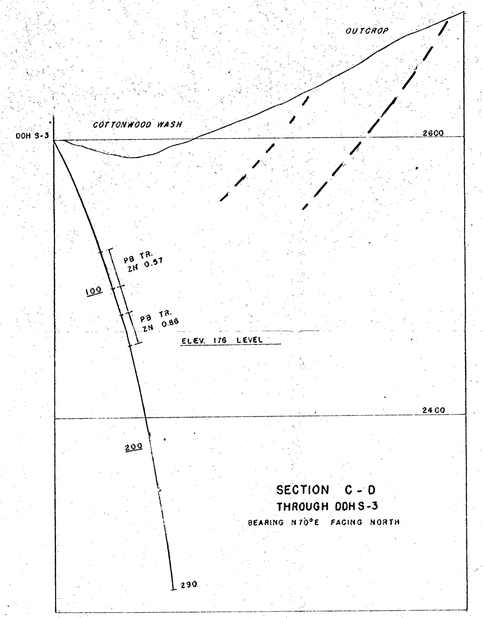
DMEA 2603

Scale: 1" = 20'

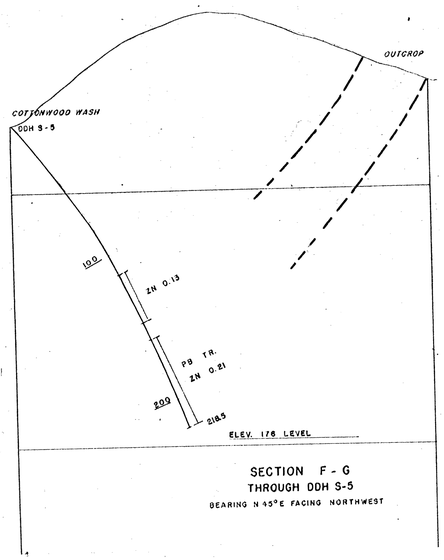
Data from applicant's map with the addition of 5 D.M.E.A. Samples



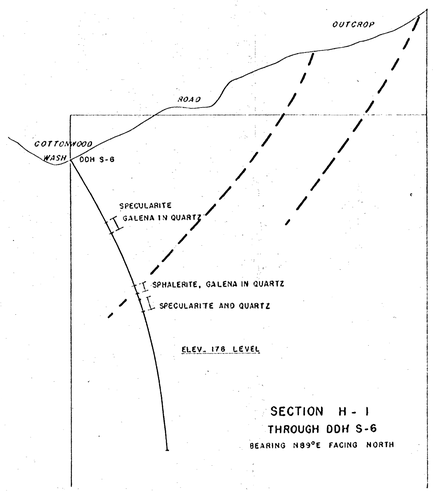
SECTION C - E
THROUGH DDH S-2
BEARING N25°E FACING NORTHWEST



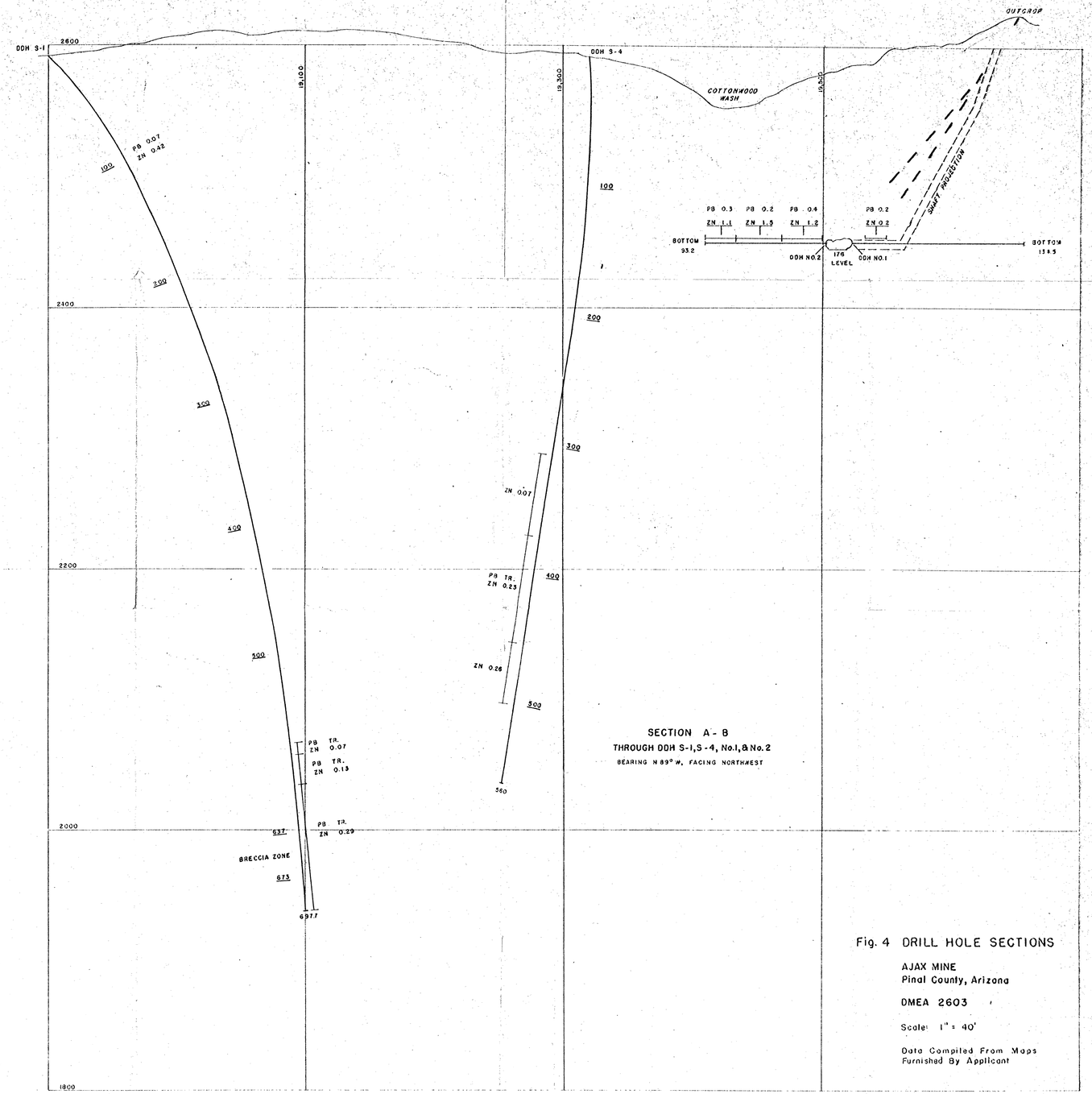
SECTION C - D
THROUGH DDH S-3
BEARING N70°E FACING NORTH



SECTION F - G
THROUGH DDH S-5
BEARING N 45°E FACING NORTHWEST



SECTION H - I
THROUGH DDH S-6
BEARING N89°E FACING NORTH



SECTION A - B
THROUGH DDH S-1, S-4, No.1, & No.2
BEARING N 89° W, FACING NORTHWEST

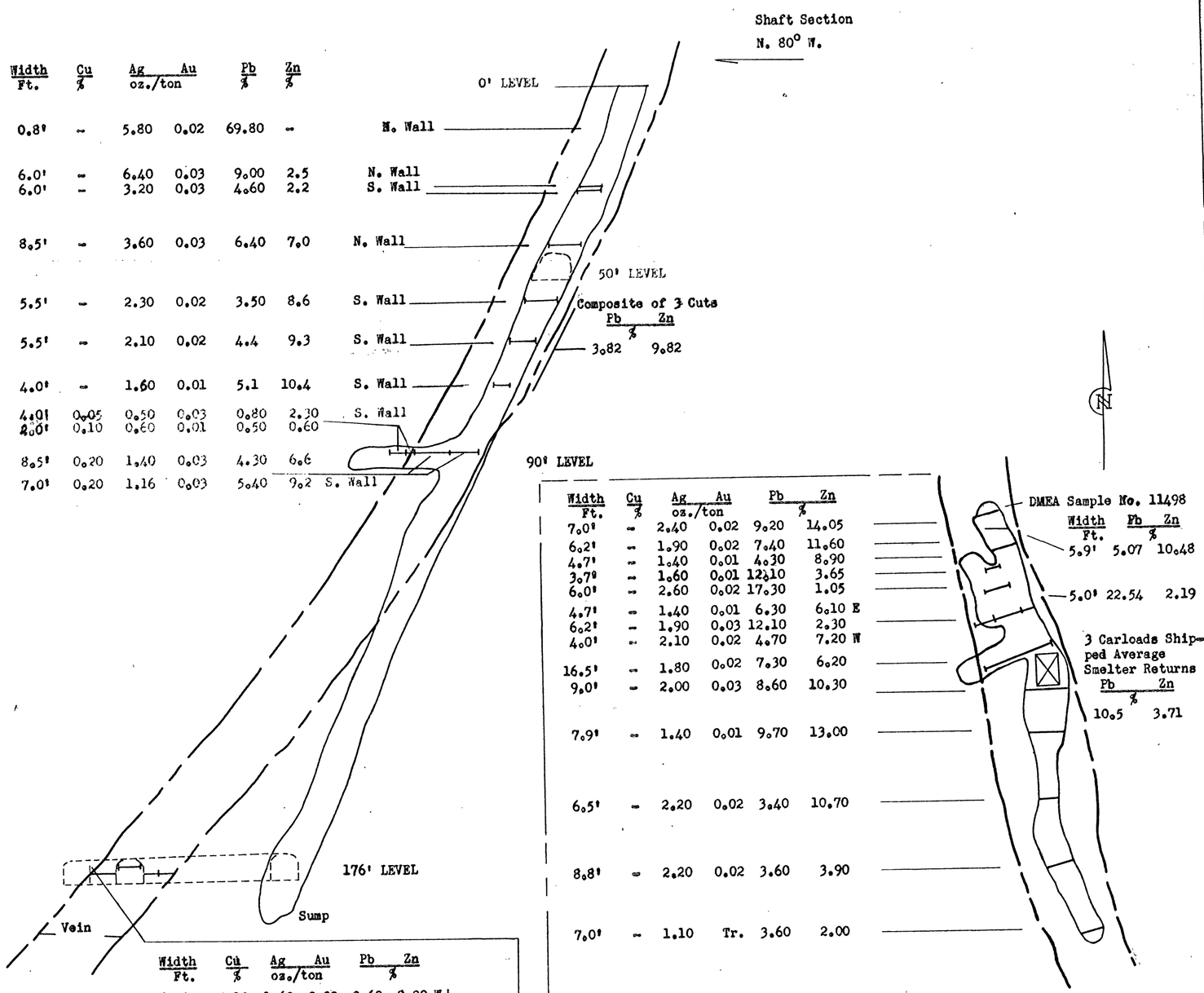
Fig. 4 DRILL HOLE SECTIONS

AJAX MINE
Pinal County, Arizona

DMEA 2603

Scale: 1" = 40'

Data Compiled From Maps
Furnished By Applicant



Width Ft.	Cu %	Ag oz./ton	Au	Pb %	Zn %	
0.8'	-	5.80	0.02	69.80	-	
6.0'	-	6.40	0.03	9.00	2.5	
6.0'	-	3.20	0.03	4.60	2.2	
8.5'	-	3.60	0.03	6.40	7.0	
5.5'	-	2.30	0.02	3.50	8.6	
5.5'	-	2.10	0.02	4.4	9.3	
4.0'	-	1.60	0.01	5.1	10.4	
4.0'	0.05	0.50	0.03	0.80	2.30	
2.0'	0.10	0.60	0.01	0.50	0.60	
8.5'	0.20	1.40	0.03	4.30	6.6	
7.0'	0.20	1.16	0.03	5.40	9.2	

Width Ft.	Cu %	Ag oz./ton	Au	Pb %	Zn %	
7.0'	-	2.40	0.02	9.20	14.05	
6.2'	-	1.90	0.02	7.40	11.60	
4.7'	-	1.40	0.01	4.30	8.90	
3.7'	-	1.60	0.01	12.10	3.65	
6.0'	-	2.60	0.02	17.30	1.05	
4.7'	-	1.40	0.01	6.30	6.10	E
6.2'	-	1.90	0.03	12.10	2.30	
4.0'	-	2.10	0.02	4.70	7.20	W
16.5'	-	1.80	0.02	7.30	6.20	
9.0'	-	2.00	0.03	8.60	10.30	
7.9'	-	1.40	0.01	9.70	13.00	
6.5'	-	2.20	0.02	3.40	10.70	
8.8'	-	2.20	0.02	3.60	3.90	
7.0'	-	1.10	Tr.	3.60	2.00	

Width Ft.	Cu %	Ag oz./ton	Au	Pb %	Zn %		
6.0'	0.10	1.60	0.02	3.60	8.20	W	No. Wall
5.0'	0.05	1.10	0.02	1.70	4.20		
4.0'	0.10	0.50	0.01	2.90	5.30		
3.0'	0.15	0.10	0.03	0.90	3.80	E	

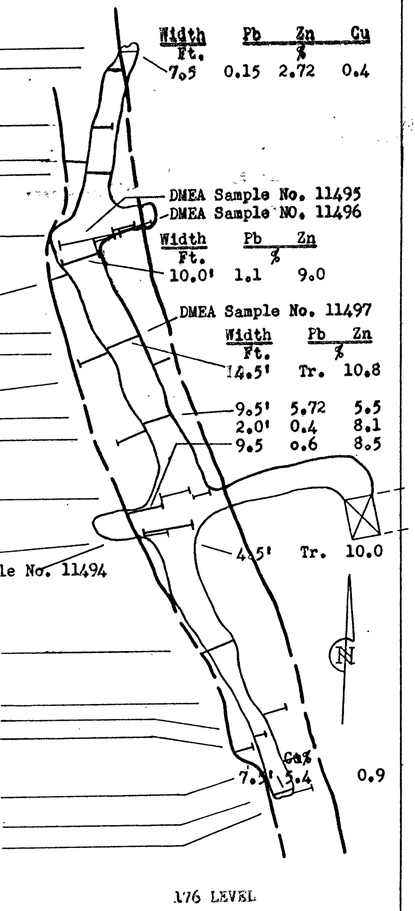
VERTICAL SECTION

THROUGH AJAX SHAFT

ASSAY PLAN 50 LEVEL

Width Ft.	Cu %	Ag oz./ton	Au	Pb %	Zn %		
6.0'	0.50	4.80	0.08	0.20	0.80		
3.0'	1.10	3.20	0.09	1.20	3.10		
4.0'	0.90	2.30	0.04	1.40	4.60		
6.0'	Tested only for Zinc				5.30	(DH)	
5.0'	0.60	0.01	0.04	2.10	3.40		
6.8'	0.40	1.40	0.02	2.70	11.40	W	
3.0'	-	0.90	0.03	2.60	9.20		
4.9'	-	2.00	0.02	2.10	8.80		
2.6'	0.40	1.40	0.04	0.60	4.20	E	
3.0'	-	1.50	0.01	2.20	11.00	(DH)	
6.5'	-	1.40	0.03	1.90	10.40		
6.5'	-	1.40	0.02	3.9	10.90	(DH)	
4.0'	-	2.60	0.03	5.70	6.30		
5.0'	-	0.20	0.01	1.90	8.20		
6.5'	-	1.10	0.01	3.40	17.90	(DH)	
6.0'	0.10	1.60	0.02	3.60	18.20	W	
5.0'	0.05	1.10	0.02	1.70	4.20		
4.0'	0.10	0.50	0.01	2.90	5.30		
3.0'	0.15	0.10	0.03	0.90	3.80	E	
5.0'	-	-	-	2.90	14.90		
5.5'	-	-	-	3.50	4.60		
4.5'	-	5.40	0.20	5.80	3.60	(DH)	
2.0	0.40	3.40	0.03	22.20	16.30		
4.0'	0.20	2.10	0.03	1.80	3.30	Gouge	
2.5'	1.30	7.80	0.40	Not Tested			
5.0'	0.80	4.10	0.06	10.7	6.30		
3.0'	0.60	2.80	0.02	-	-	(DH)	

(DH= Drill Hole)



ASSAY PLAN 176 LEVEL

DMEA SAMPLE No.	Sample Length	Au oz./ton	Ag	%Pb Total	%Pb Oxide	%Cu Total	%Cu Oxide	%Zn Total	%Zn Oxide
11494	8.7'	0.01	0.55	0.85	0.05	0.07	0.02	5.5	1.70
11495	12.2'	0.01	0.4	0.22	0.01	0.17	0.05	8.15	0.05
11496	6.5'	0.01	0.7	0.7	0.04	0.65	0.12	1.7	0.01
11497	6.0'	0.01	0.2	0.4	0.01	0.07	0.02	3.95	0.03
11498	5.0'	0.02	1.3	5.6	3.25	0.15	0.06	8.65	4.05

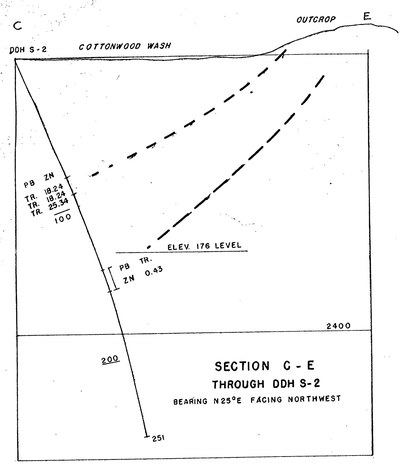
Fig. 6 SAMPLE MAP

MAGMA KING MANGANESE COMPANY'3, AJAX MINE
Pinal County, Arizona

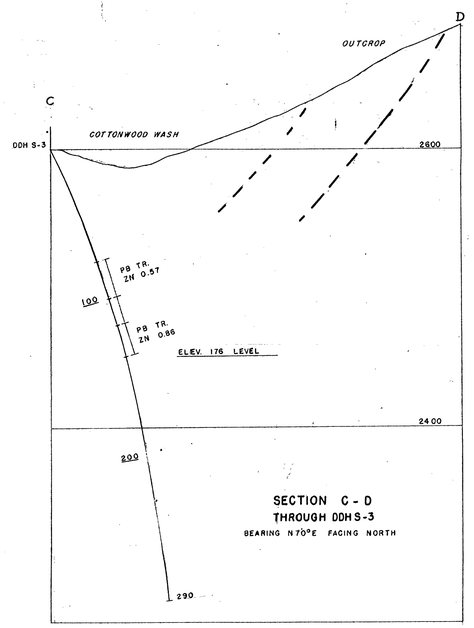
DMEA 2603 , Contract Idm-E428

Scale: 1" = 20'

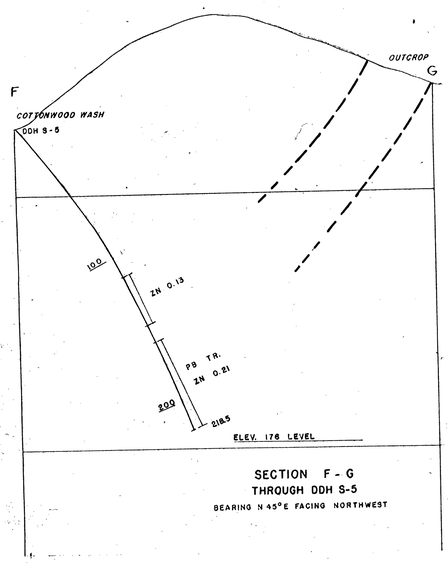
Data from applicant's map with the addition of 5 D.M.E.A. Samples



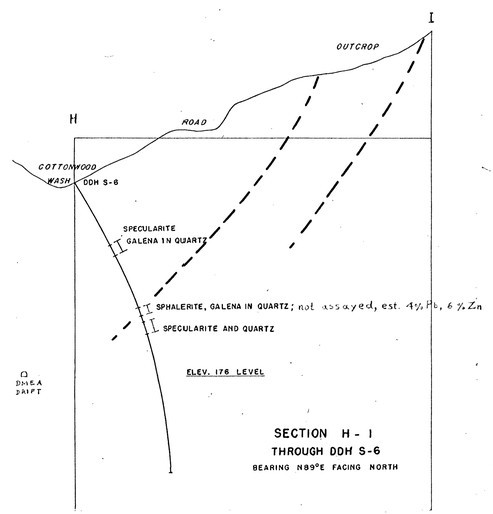
SECTION C - E
THROUGH DDH S-2
BEARING N25°E FACING NORTHWEST



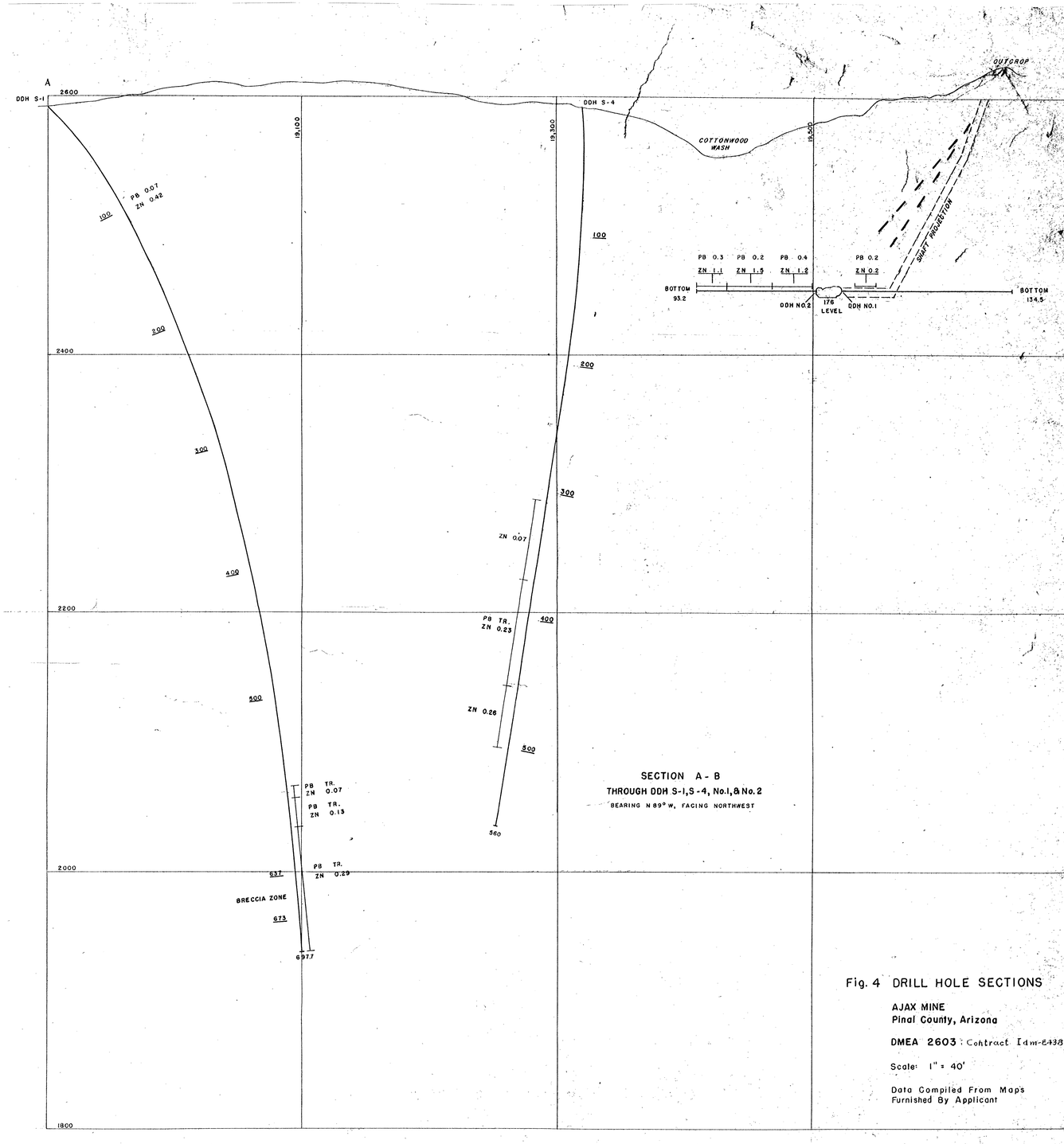
SECTION C - D
THROUGH DDH S-3
BEARING N70°E FACING NORTH



SECTION F - G
THROUGH DDH S-5
BEARING N 45°E FACING NORTHWEST



SECTION H - I
THROUGH DDH S-6
BEARING N89°E FACING NORTH



SECTION A - B
THROUGH DDH S-1, S-4, No.1, & No.2
BEARING N 89° W, FACING NORTHWEST

Fig. 4 DRILL HOLE SECTIONS

AJAX MINE
Pinal County, Arizona

DMEA 2603 : Contract Idm-8438

Scale: 1" = 40'

Data Compiled From Maps
Furnished By Applicant