DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO. 424 DMEA NO. 2441

Application
- [ ] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [x] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [x] Royalty Audits
- [x] Certification of Discovery
- [x] Closing Letter
  10-5-53.
- [x] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [x] Contract Amendments
- [x] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [x] Project summary (final) 7-11-58
- [x] Work Completed analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab) 7-23-53
- [x] Operator's Final Report (Tab) 6-5-53
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab) 7-8-52.
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. 2. : Reports
- [x] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [x] Field Team Semi-Annual Report for Certified Project
- [x] Field Team Interim Reports
- [x] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No. _____ : Maps (Use pocket folder or envelope)

Folders No. 3 : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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NOV 18 1954

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTRACT ADMINISTRATION AND AUDIT DIVISION

FIRST ROYALTY AUDIT CERTIFICATE

I have examined the records and sales documents pertaining to the sale of lead ore for the period February 23, 1953 to September 3, 1954 by:

L. D. Foreman, Mary R. Foreman
and Ida L. Cannon, partners
1354 - 2nd Avenue
Salt Lake City 3, Utah

produced from the Defense Mine, Inyo County, California, under the terms of Contract No. Ida-[illegible], Docket No. DMEA-2441.

My examination was made in accordance with generally accepted standards applicable in the circumstances.

The audit established total sales of lead ore for this period to be $89,737.45. Royalty due the U. S. Government at the contract rate of 5 percent is $4,486.86. The royalty due and paid is as follows:

Total Royalties Due	$4,486.86
Total Royalties Paid	$4,486.86
Balance of Royalties Due	-0-

George Mayer
George Mayer
Auditor

November 9, 1954

Department of the Interior
Defense Minerals Administration
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FIRST ROYALTY AUDIT REPORT

I INTRODUCTION

On November 4 and 5, 1954, an audit of royalty payments received, covering the period February 23, 1954 to September 3, 1954, was made of ore produced and sold under Contract No. Idm-5424, Docket No. DMEA-2441, by:

L. D. Foreman, Mary R. Foreman
and Ida L. Cannon, partners
1354 - 2nd Avenue
Salt Lake City 3, Utah

covering a project of exploration for lead and zinc, located in Inyo County, California and generally known as the Defense Mine.

The mining properties are reached by Highway 395 to 2 miles south of Lone Pine, California, then turn off on Highway 190 and southeast to Pinamint Springs, then 11.3 miles by road in southwesterly direction.

The records pertaining to this contract are maintained in the home of L. D. Foreman, at the above Salt Lake City address, and during the course of the audit, a visit was made to the home of L. D. Foreman, for the purpose of examining available records, pertaining to royalty payments. Mr. L. D. Foreman was out of town; however, his son, Robert L. Foreman, was present and the method of settling royalties was discussed.

Mr. S. Ricker, Executive Officer, and Benjamin H. Sheahan, Mining Engineer, U. S. Bureau of Mines, collaborated in the audit.

The cooperation of all concerned greatly facilitated the audit.

II GENERAL INFORMATION

A Certificate of Discovery was issued under date of October 5, 1953 and the producing area subject to royalty was described under Article 2 of the contract as follows:

"Defense, Defense No.1, and Defense No. 2 Claims, recorded in Independence, California in Book 55 on pages 205 and 407."

The above described properties constitute the entire mining area and are known as the Defense Line.

The mineral mined is lead ore, containing minor quantities of gold and silver and royalties have to be paid the Government on all production sold, for a period of 10 years, from the contract date of October 27, 1952. The royalty payments would terminate any time during the 10 year period, provided the Government loan is paid in full. The lead ore sold is subject to royalty repayments both prior and after issuance of Certificate of Discovery.

The contract was completed May 17, 1953, and the cost of the exploration project, together with the Government participation is as follows:

Cost	Government Participation 50%
$12,240.00	$6,120.00

The loan of $6,120.00 indicated above, has been reduced by royalty repayments aggregating $4,486.86, which leaves an unpaid balance of the Government Loan in amount of $1,633.14 as of September 30, 1954.

III SCOPE OF AUDIT AND FINDINGS

The audit was limited to determining the accuracy and propriety of royalty repayments, received by the Finance Officer, for the period February 23, 1953 to September 3, 1954, and a determination that all indicated sales of ores subject to royalty repayments under the exploration contract, for which settlement sheets had been released, have been properly accounted for.

The extent of the audit and the findings follows:

Conference with Executive Officer

Conference with the Executive Officer and certain information furnished by the Examining Engineer, U. S. Bureau of Mines, during the audit disclosed the following:

The operator does not stockpile ore subject to royalty repayment. All ore produced and sold by the partnership is subject to royalty repayment. The ore produced at the mine is segregated between good ore and waste. The waste ore taken from the mine has no commercial value.

The operator had a purchase agreement No. 7370, dated February 27, 1953 with the American Smelting and Refining Company

in effect, which was revised by No. 7414 dated February 11, 1954, covering the prices to be used when settling ore shipments to the smelter at Selby, California. The method of pricing the settlement statements were in accordance with the terms set forth in purchase agreements. The lead price is based on weekly quotations by the Engineering and Mining Journal, gold price is based on present Mint price of $34.9123 per troy ounce, silver at 75% of average Handy & Harman, New York weekly silver quotations. The operator pays for assay work, also umpire assay charges when the occasion arises.

It was agreed that the operator was producing and shipping ore in a reasonably efficient manner to insure an adequate recovery.

Audit of Settlement Statements

A complete review was made of all settlement statements, and the following schedules prepared, which form part of this report:

Schedule of Royalty Repayments
Schedule of Royalty Purchases by Smelter

The Schedule of Royalty Repayments was prepared from the finance office records, and verified to the certificates of deposit, and the total royalty repayments for the period February 23, 1953, to September 3, 1954 in amount of $4,466.06, was in agreement with the finance office ledger account.

The Schedule of Royalty Purchases by Smelter was prepared from the smelter settlement statements. The verification of these settlement statements included the calculations of gross lbs. shipped, less moisture, to obtain the dry lbs. shipped and the conversion of each shipment to dry tons (2,000 lbs.) and computing the net value per dry ton for the purpose of determining the applicable royalty percentage. A sufficient test of the mathematical accuracy of the gross value shown on settlement statements was made, together with verification of quoted prices and no errors were discovered.

Audit of Operator's Records

The operator does not maintain any records pertaining to mine operations, other than the purchase agreements with the American Smelting and Refining Company, together with copies of the smelter settlement statements, and these records were examined during the course of the audit.

Arrangements were made by the operator to have the American Smelting and Refining Company pay the royalty repayments direct to ORA here in San Francisco. When checks are mailed to the

finance office, there are attached 3 copies of settlement statements which show the royalty computation.

The ore produced at the mine is segregated between good ore and waste. The good ore is transported 46 miles by truck from Defense Mine to Trona, California and loaded into freight car for shipment to the smelter located at Selby, California. There are approximately 7 tons of ore to a truckload and 8 truckloads to a to a freight car. The smelter pays for all trucking charges, freight charges and assay costs which are allowable deductions and are listed on each settlement statement.

Although the contract shows the commodity as lead-zinc, the mineral mined to date was lead ore, containing minor quantities of gold and silver.

IV CONCLUSIONS

The audit has confirmed the accuracy and propriety of the royalty repayments received by the Finance Officer during the period February 23, 1953 to September 3, 1954. It has also determined that all indicated sales of ore subject to royalty repayments under the exploration contract, for which settlement statements have been released, and have been properly accounted for.

The operator stated that the entire loan should be repaid by the end of the year 1954.

George Mayer

George Mayer
Auditor

November 9, 1954

SCHEDULE OF ROYALTY REPAYMENTS

L. D. FOREMAN, MARY H. FOREMAN, AND IDA L. CANNON, PARTNERS

CONTRACT NO. IDM-2124, DOCKET NO. DME1-2441

CERTIFICATES OF DEPOSIT

Date	No.	Amount
4-3-53	2041	$ 455.95
7-31-53	227	347.96
8-11-53	294	149.31
12-2-53	1042	299.35
12-18-53	1155	189.83
1-7-54	1255	384.99
1-21-54	1352	83.91
1-25-54	1375	200.50
2-15-54	1536	69.67
2-24-54	1593	60.21
3-16-54	1726	144.11
4-12-54	1899	250.48
5-6-54	1	262.33
6-22-54	6	118.56
6-28-54	7	320.43
7-8-54	1	187.46
7-27-54	2	411.82
8-9-54	4	222.43
9-24-54	11	164.26
10-4-54	13	163.30
		$4,486.86

SETTLEMENT SHEETS

AMERICAN SMELTING AND REFINING COMPANY

Date	No.	Amount
3-24-53	8683	$ 80.51
3-24-53	8689	131.10
3-24-53	8711	144.59
3-25-53	8719	99.75
7-17-53	9279	154.18
7-17-53	9300	193.78
7-23-53	9335	149.31
11-11-53	9929	63.58
11-11-53	9950	138.36
11-12-53	9965	97.41
12-2-53	1083	86.36
12-1-53	1097	103.47
12-15-53	1115	150.63
12-14-53	1134	121.24
12-21-53	1184	113.12
12-30-53	1216	83.91
1-12-54	1234	95.61
1-12-54	1253	104.89
2-2-54	1352	69.67
2-9-54	1394	60.21
2-16-54	1434	40.59
2-18-54	1446	68.16
3-2-54	1483	35.36
3-18-54	1539	250.48
4-19-54	1701	262.33
6-11-54	1971	118.56
6-18-54	1981	156.71
6-18-54	1990	163.72
6-24-54	2025	187.46
7-14-54	2088	213.73
7-15-54	2110	198.09
7-22-54	2140	222.43
9-10-54	2340	164.26
9-22-54	2409	163.30
		$4,486.86

SCHEDULES OF ROYALTY PURCHASES BY SMELTER
L. D. FOREMAN, MARY E. FOREMAN, AND IDA L. CANNON, PARTNERS
CONTRACT NO. IBM-2424, DOCKET NO. DMFA-2441

Purchased by American Smelting and Refining Company, Selby Smelting Works, 405 Montgomery St., San Francisco, California

Date Rec'd at Smelter	Operator's Lot No.	Ore Shipped			Gross Value	Allowable Deductions				Net Subject to Royalty	Net Value per ton	Royalty Percentage	Royalty due and paid U. S.
		Wet lbs	Dry lbs.	Dry tons		Freight	Hauling	Assaying	Total				
3-31-54	28	113,160	107,977	53.989	$6,173.58	$630.65	291.39	$5.00	$ 927.04	$ 5,246.54	$97.18	5	$ 262.33
5-24-54	29	107,620	105,489	52.744	3,073.95	420.67	277.12	5.00	702.79	2,371.16	44.96	5	118.56
5-29-54	30	107,780	103,900	51.950	3,838.07	421.29	277.53	5.00	703.82	3,134.25	60.33	5	156.71
6-2-54	31	115,860	112,813	56.407	4,034.19	452.88	298.34	8.50	759.72	3,274.47	58.05	5	163.72
6-7-54	32	118,180	116,254	58.127	4,589.71	531.23	304.31	5.00	840.54	3,749.17	64.50	5	187.46
6-16-54	33	120,360	117,495	58.747	5,138.06	541.05	309.93	12.50	863. 48	4,274.58	72.76	5	213.73
6-23-54	34	110,060	107,859	53.930	4,749.03	494.74	283.40	9.00	787.14	3,961.89	73.46	5	198.09
7-6-54	35	112,620	110,649	55.324	5,317.24	573.62	290.00	5.00	868.62	4,448.62	80.41	5	222.43
8-20-54	36	112,840	111,712	55.856	4,023.87	441.08	290.56	7.00	738.64	3,285.23	58.82	5	164.26
9-3-54	37	114,680	113,533	56.767	4,018.50	448.27	295.30	9.00	752.57	3,265.93	57.53	5	163.30
	Totals	4,084,500	3,954,333	1,977,167	$115,913.78	$15,441.45	$10,517.59	$217.25	$26,176.29	$89,737.45	$45.39		$4,486.86

SCHEDULES OF ROYALTY PURCHASES BY SMELTER
L. D. FOREMAN, MARY E. FOREMAN, AND IDA L. CANNON, PARTNERS
CONTRACT NO. IDM-E424, DOCKET NO. DMEA-2441

Purchased by American Smelting and Refining Company, Selby Smelting Works, 405 Montgomery St., San Francisco, California

Date Rec'd at Smelter	Operator's Lot No.	Ore Shipped			Gross Value	Allowable Deductions				Net Subject to Royalty	Net Value per ton	Royalty Percentage	Royalty due and paid U. S.
		Wet lbs	Dry lbs.	Dry tons		Freight	Hauling	Assaying	Total				
3-31-54	28	113,160	107,977	53.989	$6,173.58	$630.65	291.39	$5.00	$ 927.04	$ 5,246.54	$97.18	5	$ 262.33
5-24-54	29	107,620	105,489	52.744	3,073.95	420.67	277.12	5.00	702.79	2,371.16	44.96	5	118.56
5-29-54	30	107,780	103,900	51.950	3,838.07	421.29	277.53	5.00	703.82	3,134.25	60.33	5	156.71
6-2-54	31	115,860	112,813	56.407	4,034.19	452.88	298.34	8.50	759.72	3,274.47	58.05	5	163.72
6-7-54	32	118,180	116,254	58.127	4,589.71	531.23	304.31	5.00	840.54	3,749.17	64.50	5	187.46
6-16-54	33	120,360	117,495	58.747	5,138.06	541.05	309.93	12.50	863. 48	4,274.58	72.76	5	213.73
6-23-54	34	110,060	107,859	53.930	4,749.03	494.74	283.40	9.00	787.14	3,961.89	73.46	5	198.09
7-6-54	35	112,620	110,649	55.324	5,317.24	573.62	290.00	5.00	868.62	4,448.62	80.41	5	222.43
8-20-54	36	112,840	111,712	55.856	4,023.87	441.08	290.56	7.00	738.64	3,285.23	58.82	5	164.26
9-3-54	37	114,680	113,533	56.767	4,018.50	448.27	295.30	9.00	752.57	3,265.93	57.53	5	163.30
	Totals	4,084,500	3,954,333	1,977,167	$115,913.74	$15,441.45	$10,517.59	$217.25	$26,176.29	$89,737.45	$45.39		$4,486.86

Government Copy

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

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: L. D. Forman, Harry R. Foreman and Ida L. Cannon, Partners
1354 - 2nd Avenue
Salt Lake City 3, Utah

Pursuant to the provisions of Exploration Project Contract No. Idm-E424, dated October 27, 1952, Docket No. DMEA 2441, hereinafter called the "contract" between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Lead ores with auxiliary amounts of silver, occurring as replacements in limestone rocks, were discovered by diamond drilling.

Dated OCT 5 1953

WRGriswold/hmj
(9/25/53)

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals
Exploration Administration

CC to: Docket
Cont. Adm. & Audit Div.
Region III (2)
Finance Office
Base Metals Div.
Irving Gumbel DR. MB, EPS.
Adm. R. File
Op. Committee
Mr. Hedges, Rm. 4604
Mr. Thayer, Rm 5216 GSA Bldg.
Mr. Griswold
Chron.

Mr. F. E. Johnson

Docket
Surname:

Chambers
LR Griswold
F Johnson

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

FEB 4 1955

Mr. L. D. Foreman
1354 Second Avenue
Salt Lake City 3, Utah

Re: Docket No. DMEA-2441 (Lead-Zinc)
L. D. Foreman, Mary R. Foreman
and Ida L. Cannon, partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

Dear Mr. Foreman:

Under the contract cited above the Government allotted a total of $12,240 for exploration of lead and zinc and agreed to share 50 percent of the cost as approved and accepted by this Administration. The Contract Administration and Audit Division of this Administration in its final audit report of July 8, 1953, determined the total allowable cost of the project to be $12,240, and the Government's share at 50 percent participation to be $6,120.

If the exploration work resulted in a discovery, the partnership was to pay to the Government a royalty at a rate stipulated in the contract for a period of 10 years or until the amount advanced by the Government was liquidated, whichever occurred first. You started to pay royalty in April 1953 and have consistently paid royalty until January 21, 1955, at which time you liquidated the amount advanced by the Government.

I wish to congratulate you for a successful exploration and to thank you for the payment of your account under the contract. It has been a pleasure to participate with you in this very fine undertaking.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

JLChambers/wb 2-3-55

Copy to: Docket
Admr. Reading File
Region II Field Team
Administrator
Mr. Johnson
Mr. Kiilsgaard
Mr. Bishop
Mr. Griswold
Mr. Chambers

R.C.B.

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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JUL 10 1953

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

L. D. Foreman, Mary R. Foreman
and Ida L. Gannon, partners
1354 Second Avenue
Salt Lake City 3, Utah

pertaining to Exploration Project Contract No. Idm-E424, Docket No. DMEA 2441 for the period November 27, 1952, to May 17, 1953, covering a project of exploration for lead and zinc.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Executive Officer in charge of the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reason:

The contract provides for payment by the Government on the basis of agreed estimated costs of units of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by contractor	$ 12,240.00
Exceptions	None
Total accepted cost	$ 12,240.00

The contract calls for a 50 percent participation participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Six Thousand, One Hundred Twenty and 0/100 Dollars

— 6,120.00 —

is considered valid and proper.

July 8, 1953

George Mavor
George Mavor
Auditor

Department of the Interior
Defense Minerals Administration
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JUL 20 1953

Government's Copy

L. D. FOREMAN, MARY R. FOREMAN AND IDA L. CANNON
CONTRACT NO. IDM-E424
DOCKET NO. DMEA-2441

AMENDMENT NO. 1

Contract Idm-E424 (Docket No. DMEA-2441), dated October 27, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and L. D. Foreman, Mary R. Foreman and Ida L. Cannon, partners, is amended effective April 27, 1953, as follows:

Completion date extended to May 27, 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 July 8, 1953.

UNITED STATES OF AMERICA

By H C Miller
H. C. Miller, Executive Officer
DMEA Field Team, Region III

By L D Foreman
L. D. Foreman (Partner)

Mary R. Foreman
Mary R. Foreman (Partner)

Ida L. Cannon
Ida L. Cannon (Partner)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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JUL 20 1953

AMENDMENT NO. 1

Docket No. DMEA-2441 Mineral Lead-Zinc

Exploration Project Contract Idm-E424

Date of Contract October 27, 1952

Date of Amendment July 8, 1953

Operator L. D. Foreman, Mary R. Foreman and Ida L. Cannon, partners

JUSTIFICATION

Operator misinterpreted the contract in that being given 30 days in which to start work on the project he figured the contract ran 6 months from one month after the date of the contract. He arranged his work accordingly. Even our engineer, B. H. Sheahan, incorrectly reported in his interim report dated April 17, 1953, that "the contract will expire on May 27, 1953." Under the circumstances the contract has been extended to May 27, 1953.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2441

COMMODITY Lead-Zinc

Government's Copy

IDM-E 424

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 25 1952

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 27th 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] L. D. Foreman, Mary R. Foreman and Ida L. Cannon, partners
1354 - 2nd Avenue
Salt Lake City 3, Utah

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 California, County of Inyo, described as follows:[3] Defense, Defense #1, and Defense #2 claims, recorded in Independence, California in Book 55 on pages 205 and 407.

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: None

(*b*) ~~That the Operator is a lessee, in possession and entitled to possession, and the owner's consent to lease 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 thirty days from the date of this contract shall commence work on a project of exploration for[5] lead-zinc

in or upon the described land; and shall bring the project to completion within a period of 6 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 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 $6,120.00, which is 50 percent of $12,240.00, 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.

L V Foreman (partner)
(Operator)

By Mary R. Foreman (partner)

By Ida L. Cannon (partner)

THE UNITED STATES OF AMERICA

By C O Mattendorf
Administrator, Defense Minerals Exploration Administration

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, 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.

_____ [CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
L. D. FOREMAN, MARY R. FOREMAN AND IDA L. CANNON
DOCKET NO. DMEA-2441

Exhibit "A"

Description of the Work

The purpose of this work is to explore, by diamond drilling, for the downward extension of known ore bodies, and for ore in other parts of the property adjacent to the mine workings.

The drilling will aggregate not in excess of 2000 feet in 19 holes. Seventeen of the holes shall be approximately 100 feet in depth each, and 2 of the holes shall be approximately 150 feet in depth each. These holes will be drilled at the locations and in the manner shown on the attached map (Plate 1).

It may be necessary to prepare four drill stations to properly conduct the work.

The location, direction, attitude and depth of all holes are subject to the approval of the Government.

Estimated Cost of the Project

1.	2000 feet of diamond drilling @ $6.00/ft.	$12,000.00
2.	4 drill stations @ $60.00 each	240.00
	Total estimated cost of project	$12,240.00
	Government participation @ 50%	$ 6,120.00

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2441 Board
Metal or Mineral
Date Received 3-24-52
Amount $
Participation (Government %)

L. D. FOREMAN
1354 Second Ave.
Salt Lake City, 3 Utah.

Name and address of applicant

Date March 19, 1952.

If you have already filed MF-100, give date filed enclosed, type of assistance requested equal,

DMA Docket Number (if available)

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

MAR 24 8 00 AM '52 ADMINISTRATION WASHINGTON D.C.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

FOREMAN & FOREMAN
(Name of company)

By L H Foreman
(Signature of authorized official)

March 19, 1952.
(Date)

Partner.
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Form MF 103 U. S. DEPARTMENT OF THE INTERIOR Defense Mine.
DEFENSE MINERALS ADM. L. D. Foreman.

1 A Following unpatented mining claims:
Defense)
Defense No. 1) Comprising Defense Mine.
Defense No. 2)

1 B Property owned by Foreman & Foreman, Partnership.

1 C On Defense Claim - Modock Mining District - Township 19 So. Range 42 West - Inyo County, California.

1 C 2 Property owned and there are no leins or encumbrances.

2 A Silver Lead Ores similar to production record on MF 100.

2 B See report and maps of E. W. Newman enclosed - also data furnished on Form MF 100.

3 A Diamond Drilling approximately 2000 Ft. 1000 Ft. from Lower Level, 500 Ft. from Intermediate Level and 500 Ft. from Lower Level, consisting of short holes up to 200 Ft. Also Drifts, Raises or Crosscuts dependent on information secured from Diamond Drilling.

4 Maps enclosed.

5 See item 17 on page 2 of Form MF 100.

6 Rental of Diamond Drill or if purchased will cost $1500.00 to $2000.00

7 C Furnished by us - 500 Cu Ft. Compressor - pipe lines and tracks already installed - Water Tanks - 3 Stopers - 4 Drifters - 2 Jack Hammers - 3 Tuggers - 2 Slushers and Scrapers - 1 Eimco 12B Loader - 5 Mine Cars - ample supply of steel and bits - complete tool supply - Welding and Cutting Outfit - Water Pumps - All in working condition. 2 Ore Bins - One Aerial Tram - 1 jeep - 1 Chrevolet Pickup Truck - 1 International KS 7 Truck - 2 Military 4X 4 Dodge Trucks - - complete Dining Room, Kitchen and sleeping quarters.

8 3 Miners at $90.00per week - 1 Cook and Utility Man at $250.00 per Month - 1 Superintendent at $120.00 per week.

9 Powder, Materials and Supplies $6000.00
Engineering furnished by AS&RCo. without charge.
Assaying $100.00
Accounting done by L. D. Foreman without cost.
Power, No Electric Power Available.
Water, Cost of hauling $500.00

10 $10000.00 from funds now on hand.

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
RECEIVED

MAR 13 PM 2:45

SAN FRANCISCO, CALIFORNIA

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA FOR USE UNDER THE DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2441

Date received 3-24-52

L. D. FOREMAN
1354 Second Ave.
Salt Lake City, 3 Utah.

Name and address of applicant

Date March 19, 1952.

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).
   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   ☐ Owner.
   ☐ Lessee.
   ☐ Contractor.
5. Number of years in production _____
   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

MAR 24 8 25 AM '52
DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(*a*) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

Form MF 100

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADM.

Defense Mine
L. D. Foreman.

1 A Silver Lead Ore
B None
2 Defense Silver Lead Mine.
2 A 586 Ft.
B 1176 Ft.
C 1121 Ft.
D 489 Ft. Stopeing - Widths 10 to 40 Ft. - Thickness 2 to 20 Ft.
Mine is Dry
3 A 46 Miles North of Trona, Calif.
B Modock Mining District.
C Township 19 South Range 42 West.
D Inyo County, Calif.
4 A Mine is now in operation by L. D. Foreman & R. L. Foreman.
B As Owners.
5 Six Years.
6 Applicant L. D. Foreman over 25 years in various mining operations - also 13 years in iron and steel business.
Manager R. L. Foreman five years in charge of this property - previously worked at Hecla Mine, Melrose, Montana and in trucking business at Elko, Nevada.
7 A Was new mine when operations were started by L. D. Foreman in 1946.
7 B Neighboring properties, both about 1 Mile distant Modock Consolidated and Minietta, both of which have been large producers of silver lead Ore. Within the past month the American Smelting & Refining Co. has taken over the Minietta Property and plan extensive development project starting April 1st, 1952. Modock property shipped considerable ore to smelters and in addition operated own lead smelter in the 70's and 80's. Resulting slag dump was shipped to the Selby Smelter, Calif. during the last war by L. D. Foreman under Lease Agreement and totaled approximately 15000 tons of slag assaying 8% Lead and
7 C 4 1/2 ozs. Silver.
Report of E. W. Newman enclosed.
8 Partnership, L. D. Foreman 50% - Mary R. Foreman 35% - Ida L. Cannon 15%.
9 Inapplicable.
10 3 Silver Lead Ore - Dry Pounds.

			Avg. Ag	Avg. Pb.
1947	1037764	17,243,000	8.73	23.72
1948	7958372	8621 Tons	11.93	21.08
1949	5390794		12.92	19.98
1950	397720		14.77	14.91
1951	2458038		14.73	16.76

11 Future production dependent on further development work - Several small showings of ore exposed at present.

Form M 100 U. S. DEPARTMENT OF THE INTERIOR Defence Mine
DEFENSE MINERALS ADM. L. D. Foreman.

12 A See report and maps enclosed.
B Deposit is not placer.
B 1 Further development should reveal ore bodies similar to those during 1947 to 1951.
B 2 Only small showings of ore developed at present but further work should reveal ore bodies of equal or better grade than those in the past.

13 46 Miles to Trona, Calif. - first 6 miles good gravel road and next 40 miles paved highway. 63 miles to Lone Pine, Calif. first 11 miles good gravel road, next 52 miles paved highway.

14 Ample water supply from nearby springs piped to within 1/4 mile of mine, then hauled by truck.

15 No electric power available - property equipped with 500 Cu Ft. LeRoi Deisel Compressor.

16 3 Miners - 1 cook and general utility man - 1 Superintendent.

17 Kitchen fully equipped, Dining Room, Bunk House and Quonset Hut will accomodate 10 men. All necessary Drilling machines, Compressor, Blower, Eimco Loader, Tuggers, and Mine Cars with track laid in all tunnels. Also extensive supplies all owned and paid for and in serviceable condition for work planned.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

FOREMAN & FOREMAN
(Name of company)

By L W Foreman
(Signature of authorized official)

March 19, 1952.
(Date)

Partner.
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

DMEA-2441

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

MAR 24 8 25 AM '52

February 1, 1952

Mr. Lee Foreman
1354 Second Avenue
Salt Lake City, Utah

CALIF., INYO COUNTY
MODOC MINING DISTRICT
DEFENSE MINE

Dear Sir:

Reference is made to your request for a brief geological description of the mineral deposit at the Defense mine, which information is needed to fill out Form MF-100 in connection with a government loan. The following report is respectfully submitted:

GEOLOGY OF MINE

General

The Defense mine is situated on the east slope of the Argus Range, which geologically is made up of a thick series of Paleozoic limestones and shales. These sedimentaries have been complexly folded and faulted, and compression thrusts of large displacement are common in the area. The formations have also been intruded by stocks of granite and dikes and sills of porphyry. Numerous mineral showings occur in the area, but the relationship of the various deposits is not known, as the mineralization cannot be traced continuously from one mine to another.

Local

The host rocks at the Defense mine are altered blue and gray crystalline limestones, which have been cut by dikes and sills of diabase. Faulting and fissuring is common, particularly in mineralized areas.

The original discovery consisted of a typical gossan some 10 feet in diameter, containing iron oxide, manganese oxide, and occasional streaks of cerrusite. As this was followed down, it led to stopes of ore where flat-lying shear zones were encountered near the fissures. Some porphyry is usually associated with the ore bodies, but its relationship is obscure and its occurrence is scanty in the mineralized zones. Chert nodules are usually seen in the limestones in which the ore bodies occur, and this type of limestone is therefore thought to be favorable for ore deposition in the area.

The ore occurs in irregular lenses in fissures and along the flat-lying shear zones. Of the ore so far mined, about two-thirds has come from the latter type of structure. The general strike of the ore bodies on the various levels is about N.75°E., and the rake is about 25° in the same direction (see map and section).

Ore minerals consist of cerrusite, anglesite, and galena in a gangue made up of jasper, iron oxide, manganese oxide, and quartz.

Defense Mine
February 1, 1952

EXPLORATION POSSIBILITIES

In a limestone deposit of this kind, the irregularity of individual ore lenses necessitates the performance of exploration along general trends, rather than along the direction of individual ore bodies, if new deposits of any consequence are to be found. The general trend of the ore bodies so far mined at the Defense mine is apparently to the northeast (see map and section). This would, therefore, be the logical place to do some exploration on the lower level, first driving a crosscut to get into position (see map), and then drilling a series of holes to locate individual lenses. If new lenses are found, they could be mined efficiently, now that the lower tunnel is completed.

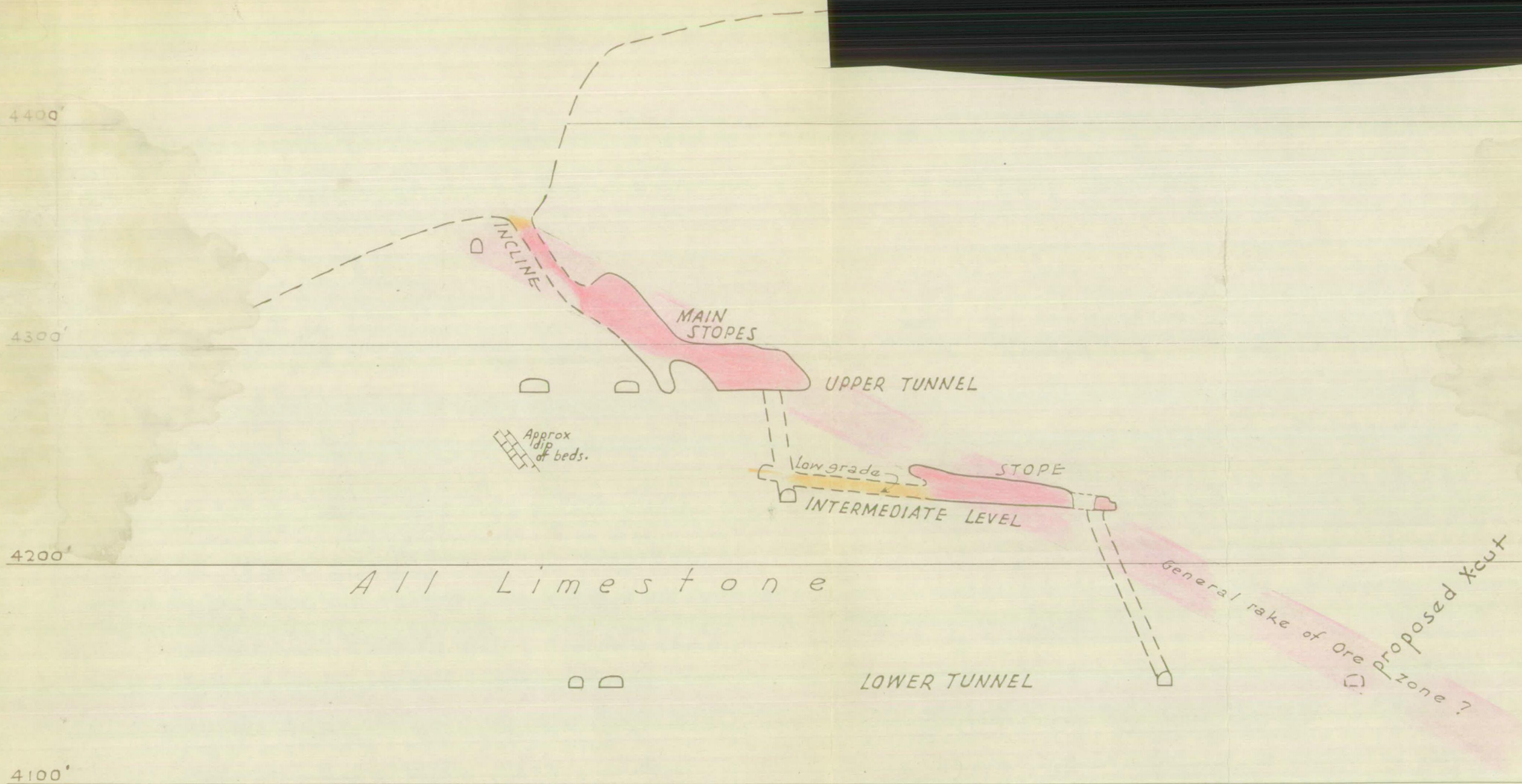
Another good exploration possibility would be the area above the intermediate level and below the main stopes (see section). This area could be tested by a series of relatively short drill holes or raises, and any ore found would be close to the main chutes for mining.

Very truly yours,

E W Newman.

E. W. Newman
Geologist

EWN:si



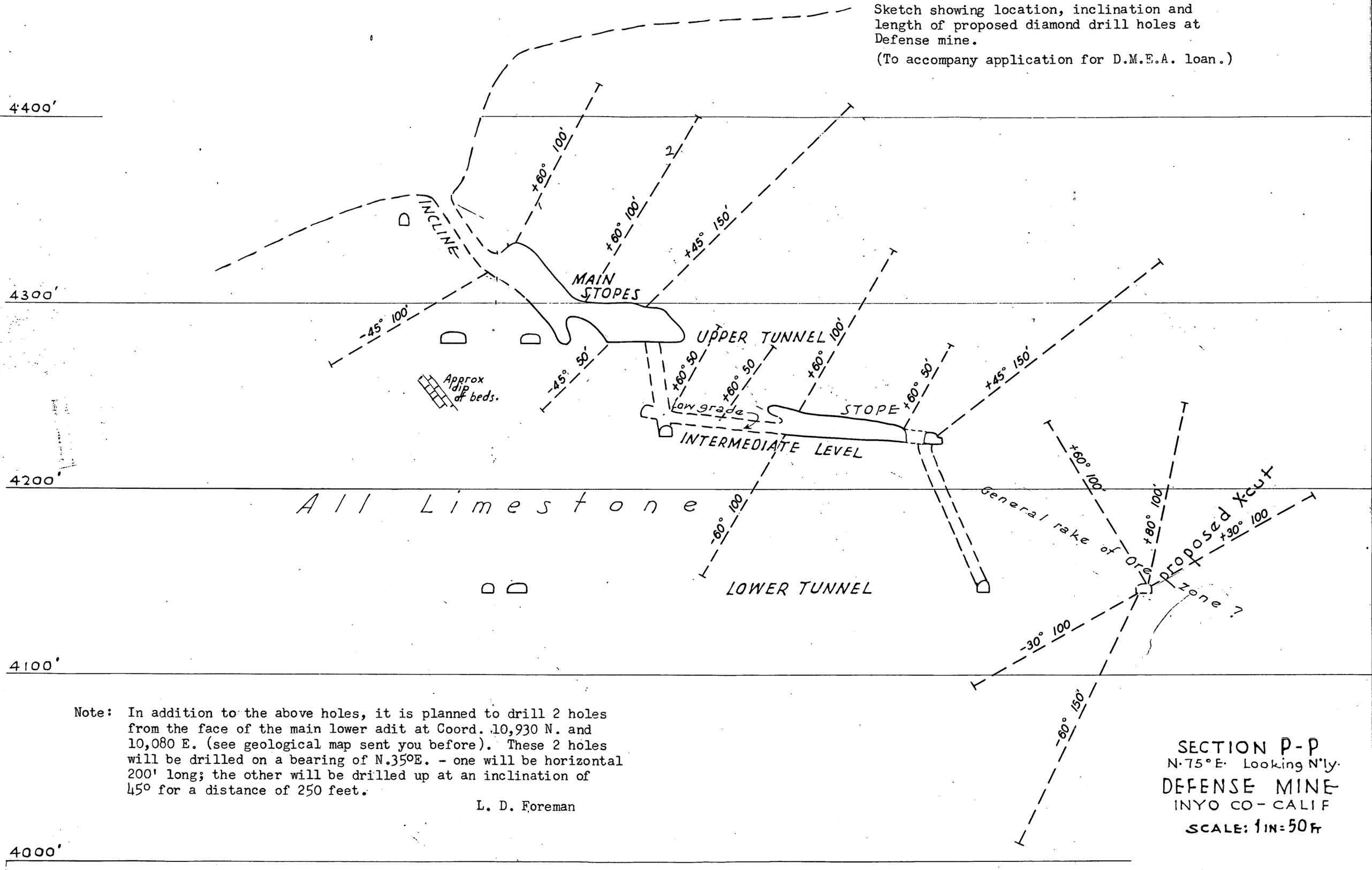
SECTION P-P
N·75°E· Looking N'ly·
DEFENSE MINE
INYO CO - CALIF
SCALE: 1 IN = 50 FT

Draft
E·W·Newman
Jan. 1952

10-565

Sketch showing location, inclination and length of proposed diamond drill holes at Defense mine.

(To accompany application for D.M.E.A. loan.)



Note: In addition to the above holes, it is planned to drill 2 holes from the face of the main lower adit at Coord. 10,930 N. and 10,080 E. (see geological map sent you before). These 2 holes will be drilled on a bearing of N.35°E. - one will be horizontal 200' long; the other will be drilled up at an inclination of 45° for a distance of 250 feet.

L. D. Foreman

SECTION P-P
N·75°E· Looking N'ly·
DEFENSE MINE
INYO CO - CALIF
SCALE: 1 IN = 50 FT

E·W·Newman
Jan. 1952

10-565

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code

PROJECT SUMMARY REPORT

By: J. W. Alt July 11, 1958

1. Docket No. DMEA-2441 (Lead-Zinc)
Contract No. Idm-E424
Property: Defense Mine
Inyo County, California

Operator: L. D. Foreman, Mary R. Foreman, Ida L. Cannon, partners
1354 2nd Avenue
Salt Lake City 3, Utah

Operator's Property Rights: Owner

2. Contract dated October 22, 1952. To complete - 6 months.

Work Authorized

The purpose of this work is to explore, by diamond drilling, for the downward extension of known ore bodies, and for ore in other parts of the property adjacent to the mine workings.

The drilling will aggregate not in excess of 2,000 feet in 19 holes.

Estimated Cost of the Project

1. 2,000 feet of diamond drilling @ $6/ft.	$12,000.00
2. 4 drill stations @ $60 each	240.00
Total Estimated Cost of Project	$12,240.00
Government Participation @ 50%	6,120.00

Amendments

No. 1 Effective April 27, 1953.

Completion date extended to May 27, 1953.

Work Completed

2,000 feet of diamond drilling @ $6/ft.	$12,000.00
4 drill stations @ $60 each	240.00
Total Cost of Project	$12,240.00

Work was started on November 25, 1952 and was completed on May 20, 1953.

3. Report of Review dated July 8, 1953.

Total cost as billed by Contractor	$12,240.00
Exceptions	0.00
Total Accepted Cost	$12,240.00
Government Participation @ 50%	$ 6,120.00

Operator's final report dated June 5, 1953.
Field Team final report dated August 26, 1953.

4. Certification date: October 5, 1953.

The discovery consisted of lead ores with auxiliary amounts of silver, occurring as a replacement deposit in limestone rocks. The ore reserves are estimated to be 4,000 tons of a grade of 18.6% lead and 14.6 ounces of silver.

5. Comments

All drilling was done from underground stations. Four drill stations were excavated. Ore was intersected in holes 7 and 7b soon after the exploratory drilling was started. Encouraged by this discovery, the Operator, on company account, extended a crosscut from the intermediate stope, cutting the ore body. Drifts were extended for a total distance of 90 feet on the ore. An 80-foot raise was driven by the Operator from the lower tunnel to the development drift. Shipments amounting to approximately 500 tons were made to the American Smelting and Refining Company. The first four shipments averaged about 22.0% Pb. and 18.0 oz. Ag. per ton.

A development drift was extended 70 feet northwesterly from the southern end of the intermediate stope to the development drift after diamond drilling was completed.

Exploration could be most efficiently carried out by diamond drilling to the parts of the gentle fault southeast of the intermediate stope. This zone could be satisfactorily explored by a series of diamond drill holes fanning out southwesterly from the lower workings at the sites of undrilled holes 4 and 5 of the DMEA program. Diamond drilling unexplored upper projections of the gentle fault zone seems worthwhile.

The possibility of other gentle ore-controlling structures occurring at depth between the two boundary faults might also be investigated by deep diamond drill holes.

J. W. Alt

JWAlt/ss 7/10/58
Copy to: Docket
Mr. Johnson
Chron.

☒ Audited

☒ Certified

Name L.D. Foreman et al. (Defense Assme)

State California

RK ANALYSIS SHEET - DMEA PROJE

Analysis as of 12/13/54

Incl. Voucher for Aug 1953

Commodity Lead-Zinc.

☐ Actual Cost

☒ Agreed Unit Costs

Docket No. DMEA-2441

Idm-E No. 424

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Diamond	2000'	$12,000.00	2,000'	$12,000.00	$12,240.00
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) 4 Drill Stations		240.00		240.00	240.00
Totals		$12,240.00		$12,240.00	$12,240.00

all paid back

Prepared by W.P. Kluzedhead

71626

File Copy
Surname

Griswold
Selfridge
Johnson

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

500

SEP - 7 1956

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-2441 (Lead-Zinc)
L. B. Foreman, Mary R. Foreman
and Ida L. Cannon, partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

Dear Mr. Ricker:

With reference to the Semi-Annual Report of the cited certified project, for the period January 1 - June 30, 1956, we note the statement:

"Development and exploration work recently performed by the Operator has disclosed additional ore reserves."

From this statement we are not sure whether it might be convenient to give us a little more detail concerning this property. We always appreciate receiving as much detailed and specific information as possible, such as extent and location of the new work, tonnage of additional ore, present and contemplated expenditures, etc. Obviously, in a case of this sort, where the total Government contribution has already been repaid, it would not be in order to go much out of your way to obtain such information.

In any event, kindly let us have anything which you might have available.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (24B)

APPROVED:

Frank D. Lamb (24B)
Member, Bureau of Mines

N. E. Nelson (24B)
Member, Geological Survey

WRGriswold/er (9/4 & 5/56)
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

R.R.B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

Mr. Spangler Ricker
Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA-2441 (Lead-Zinc)
L. D. Foreman, Mary R. Foreman
and Ida L. Cannon, partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

Dear Mr. Ricker:

With reference to the Semi-Annual Report of the cited certified project, for the period January 1 - June 30, 1956, we note the statement:

"Development and exploration work recently performed by the Operator has disclosed additional ore reserves."

In such reports we would appreciate receiving more specific and detailed information such as extent and location of the work, tonnage of additional ore, future prospects, etc. Obviously, in a case of this sort where the total Government contribution has already been repaid, it would not be in order to go to any expense to obtain such information. However, kindly let us have anything which you might have available.

Sincerely yours,

Chairman, Operating Committee

APPROVED:

O. M. Bishop
Member, Bureau of Mines

W. P. Williams
Member, Geological Survey

Talbert
Chambers

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

FEB 3 1955

Mr. George Mavor
DMEA Auditor
420 Custom House
555 Battery Street
San Francisco 11, California

Re: Idm-E424, DMEA-2441
L. D. Foreman, N. R. Foreman,
and I. L. Cannon

Dear Mr. Mavor:

Your Monthly Work Load Report dated February 1, 1955, indicates that the referenced project has been programmed for a royalty audit during February.

Our records indicate that the Operator of this project has made royalty payments in the aggregate amount of $6,120.00, which fully repays the amount contributed by the Government under the exploration contract. Accordingly, no purpose would be served by a royalty audit.

Royalty audits are for the purpose of establishing that the Government is receiving all royalties properly due under the terms of the contract until the total amount contributed by the Government has been fully repaid. Once full repayment has been effected no audit is required.

Sincerely yours,

Jay L. Chambers, Chief
Contract Administration
and Audit Division

EDTalbert/ama
February 3, 1955

Copy to: Docket
Admr. Reading File
Mr. Chambers

noted JH

RECEIVED

420 Custom House
555 Battery Street
San Francisco 11, California

December 13, 1954

Mr. L. D. Foreman
1354 - 2nd Avenue
Salt Lake City 3, Utah

RE: Idm-4424, DMEA-2441
L. D. Foreman, Mary R. Foreman
and Ida L. Cannon, Partners
Defense Mine
Inyo County, California

Dear Mr. Foreman:

Enclosed herewith for your information and files, is copy of First Royalty Audit Report, pertaining to subject contract.

Sincerely yours,

"(SIGNED) GEORGE MAVOR"

George Mavor,
Auditor

Copy — Jay L. Chambers

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

NOV 26 1954

Mr. George Mavor
DMEA Auditor
420 Custom House
555 Battery Street
San Francisco 11, California

Re: Idm-F68, DMA-1599X
U. S. Tungsten Mine

and

Idm-F424, DMEA-2441
Foreman, Foreman & Carmon

Dear Mr. Mavor:

Receipt is acknowledged of your First Royalty Audit Reports covering the referenced Exploration Project Contracts.

The Reports are acceptable and normal distribution may be effected.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

WBorovies/wb
November 26, 1954

Copy to: Docket (2)
Admr. Reading File
Mr. Chambers

File Copy
Surname

Chandler
Martin
Griswold
Johnson
Mattendorf

500

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

AUG 27 1954

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
420 Custom House
555 Battery Street
San Francisco 11, California

Re: Docket No. DMEA-2441 (Lead-Zinc)
L. D. Foreman, Harry R. Foreman
and Ida L. Cannon, Partners
Defense Mine
Inyo County, California
Contract No. Idm-2424

Dear Mr. Miller:

A review of the cited docket shows that we have no settlement sheets in our files covering the ore shipments upon which royalty payments have been made.

In all cases of royalty payments, we should receive copies of the settlement sheets. Therefore, it will be appreciated if you will forward whatever copies are needed to bring us up to date and to keep our information current.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (JB)

APPROVED:

J. H. Hedges
Member, Bureau of Mines (JB)

s/Thor N. Kulsgard
Member, Geological Survey (JB)

WRGriswold/bjl (8/27/54)

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals
Mr. Bishop
Mr. Gildersleeve
Chron.

R.C.G.

FILE COPY
SURNAME: 500

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

OCT - 5 1953

Mr. Irving Gumbel, Director
Materials Division
Emergency Procurement Service
General Services Administration Building
Washington 25, D. C.

Re: Docket No. DMA-2441 (~~Lead-Zinc~~)
L. D. Foreman and partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

My dear Mr. Gumbel:

Enclosed is a copy of a "Certificate of Discovery or Development" related to Exploration Project Contract No. Idm-E424, together with a copy of the final Field Team report.

The contract was dated October 27, 1952, with the Government participating to the extent of 50 per cent in an exploration project estimated to cost $12,240.00. The total of this amount was actually expended, the Government's share being $6,120.00.

The total amount of work provided for under the contract consisted of two thousand feet of diamond drilling. Work actually accomplished totalled this figure.

The discovery consisted of lead ores with auxiliary amounts of silver, occurring as a replacement deposit in limestone rocks. The ore reserves are estimated to be 4,000 tons of a grade of 18.6 per cent lead and 14.6 ounces of silver.

WRGriswold/hmj

Sincerely yours,

Frank E. Johnson
657
ACTING Administrator

CC to: Docket
Cont. Adm. & Audit Div.
Region III (2)
Base Metals Div.
Adm. R. File
Op. Committee
Mr. Hedges, 4604
Enclosure Mr. Thayer, Rm 5216, GSA Bldg.
Mr. F. E. Johnson
Mr. Griswold
Chron.

FILE COPY
300
SURNAME:

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

Samuel
~~Hedges~~
~~Hayes~~
Selfridge

OCT - 5 1953

Mr. L. D. Foreman
1354 - 2nd Avenue
Salt Lake City 3, Utah

Re: Docket No. DMEA 2441 (Lead-Zinc)
L. D. Foreman, Harry R. Foreman
and Ida L. Cannon, Partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

Op. Committee
Mr. F. E. Johnson
Mr. W. R. Griswold
Chron.

Dear Mr. Foreman:

Transmitted herewith is a "Certificate of Discovery or Development" related to the Exploration Project Contract No. Idm-E424, dated October 27, 1952, on the lands described in the contract.

By the terms of the Exploration Project Contract and of the Certification, all production from the parcels of land described in the contract, with its amendments, after October 27, 1952, the date of the contract, are subject to the Government's percentage royalty as set forth in the said contr ct until the sum of $6,120.00, which the Government has advanced as its participating interest is repaid, or until October 27, 1962, whichever occurs first.

Irving Gumbel, Dr. MD, EPS
Adm. R. File
Mr. Hedges, 4604
Mr. Thayer, 5216 GSA
Adm. R. File

Payments should be made to Mr. H. C. Miller, Executive Officer, DMEA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California. Checks should be drawn in favor of the Treasurer of the United States. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward the checks to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Miller of any changes in ownership or production rights that might affect the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period please notify Mr. Miller at six-month intervals that such is the case.

Sincerely yours,

FRANK E. Johnson 257
ACTING Administrator

Enclosure

WRGriswold/hmj (/0/5/53)
CC to: Docket
Region III (2)
Base Metals Div.
Cont. Adm. & Audit Div.

FILE COPY 500
SURNAME:

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

Trimmel
agl Cal
Parker
Chamber

OCT - 5 1953

Mr. L. D. Foreman
1354 - 2nd Avenue
Salt Lake City 3, Utah

Re: Docket No. DMEA 2441 (Lead-Zinc)
L. D. Foreman, Harry R. Foreman
and Ida L. Cannon, Partners
Defense Mine
Inyo County, California
Contract No. Idm-E424

Dear Mr. Foreman:

Transmitted herewith is a "Certificate of Discovery or Development" related to the Exploration Project Contract No. Idm-E424, dated October 27, 1952, on the lands described in the contract.

By the terms of the Exploration Project Contract and of the Certification, all production from the parcels of land described in the contract, with its amendments, after October 27, 1952, the date of the contract, are subject to the Government's percentage royalty as set forth in the said contract until the sum which the Government has advanced as its participating interest is repaid, or until October 27, 1962, whichever occurs first.

Payments should be made to Mr. H. C. Miller, Executive Officer, DMEA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California. Checks should be drawn in favor of the Treasurer of the United States. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward the checks to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Miller of any changes in ownership or production rights that might affect the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period please notify Mr. Miller at six-month intervals that such is the case.

Sincerely yours,

Frank E. Johnson
ACTING Administrator

Enclosure

WRGriswold/hmj (9/29/53)
CC to: Docket
Region III (2)
Base Metals Div.
Cont. Adm. & Audit Div.
Irving Gumbel, Dr. MD, EPS
Adm. R. File
Mr. Hedges, 4604
Mr. Thayer, 5216, GSA
Adm. R. File
Op. Committee
Mr. F. E. Johnson
Mr. W. R. Griswold
Chron.

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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

September 14, 1953

Memorandum

To: Ernest Wm. Ellis, Acting Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2441 (Lead-Zinc)
L. D. Foreman and partners
Defense Mine, Inyo County, California
Contract Idm-E424

Reference is made to your memorandum of September 8, 1953.

Final Field Report was mailed to your office with our covering memorandum dated September 10, 1953, and doubtless has now come to your attention.

Operator's report dated June 5, 1953, transmitted to you with our memorandum of July 3, is their final report on the project.

S. Ricker for H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS

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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

September 10, 1953

Memorandum

To: Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2441 (Lead-Zinc)
Defense Mine, Inyo County, California
Contract Idm-E424

Attached are four copies of the final report on the subject property entitled "DMEA-2441, Defense Mine, Inyo County, California," by B. H. Sheahan, Mining Engineer, U. S. Bureau of Mines, and E. M. MacKevett and W. E. Hall, Geologists, U. S. Geological Survey, dated August 26, 1953.

S. Ricker for H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno
George Mavor
F. Horton

Copy of F.T. final Rept may be found in this file

Reviewed by
DMEA OPERATING COMMITTEE
9-21-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

Final Report

Idm-E424

DMEA-2441, Defense Mine, Inyo County, California

(Lead-Zinc)

B. H. Sheahan, Mining Engineer
U. S. Bureau of Mines

E. M. Mackevett, Geologist
U. S. Geological Survey

W. E. Hall, Geologist
U. S. Geological Survey

August 26, 1953

Reviewed by
DMEA OPERATING COMMITTEE
9-21-53
(date)

Final Rept

FINAL REPORT

Docket No.: DMEA-2441 (Lead-Zinc)

Name and address of operator: L. D. Foreman, Mary R. Foreman and Ida L. Cannon, partners
1354 2nd Avenue,
Salt Lake City 3, Utah

Name and location of property: Defense Mine, Inyo County, Calif. Located 11.3 miles by road southwesterly from Panamint Springs Station, Calif., in sec. 28 and 29, T. 19 S., R. 42 E., M.D.B.&M. (projected) on the east slope of the Argus Range.

Contract No.: Idm-E424

SUMMARY

Detailed mapping of the new workings at the Defense mine by W. E. Hall and E. M. Mackevett of the U. S. Geological Survey revealed that the ore body discovered as a result of the DMEA diamond-drilling program is controlled by a flatly east-dipping fault that is confined to a zone between two steep northwest-trending, northeast-dipping faults (Plate II. Map of Underground Workings of the Defense Mine). This is the same structure in which the upper and intermediate ore bodies are localized.

As a result of the DMEA diamond-drilling program and subsequent development work by the operators, a little more than 1,000 tons of indicated ore averaging 22.0 percent lead and 18.0 ounces per ton of silver has been found, and further exploration may result in finding an additional tonnage. The likeliest future exploration possibility is to cut the down-dip parts of the gentle-dipping, ore-controlling structure southeast of the known ore bodies by diamond drilling up-

holes from the lower workings.

Ore mined from the development crosscut and drift amounted to 500.76 tons. Net value after smelting and haulage charges were deducted was $19,064.57. Royalty payments to the Government were $953.22. The first four shipments, amounting to 203.3 tons, averaged 22% lead and 18 oz. silver per ton.

The chief ore minerals are galena and cerussite in an iron and manganese-stained gangue with silica and calcite. The ore bodies occur as replacements in limestone. Low angle faulting, considerably flatter than the dip of the marble bedding, has important bearing upon the control of ore deposition. The main ore controlling features are described in the section under GEOLOGY of this report.

Composite map (fig. 1) shows the location of completed diamond drill holes on the contract, and development headings completed by the operator.

The exploration, development work, and mining was supervised by Robert Foreman. All of the work was done by three men: the superintendent, a diamond drill operator, and a laborer. Mr. L. D. Foreman prepared monthly reports and Mr. E. W. Newman assisted the operator with his final report.

DESCRIPTION OF WORK COMPLETED

The property was examined by an engineer of the U. S. Bureau of Mines and a geologist of the U. S. Geological Survey on June 4 and 5, 1952.

Exploration contract Idm-E424 was signed by the operator on October 27, 1952 and work was started by exploratory diamond drilling on November 25, 1952 and completed on May 20, 1953.

Core drilling completed on the contract amounted to 2,057.5 feet. The holes were collared AX size and completed EX. All drilling was done from underground drill stations (fig. 1). Four drill stations were excavated.

Ore was intersected in holes 7 and 7b soon after the exploratory drilling was started. Encouraged by this discovery, the operator, on company account, extended a crosscut from the intermediate stope, cutting the ore body. Drifts were extended for a total distance of 90 feet on the ore. An 80-foot raise was driven by the operator from the lower tunnel to the development drift. Shipments, amounting to approximately 500 tons, were made to the American Smelting and Refining Co. The first four shipments averaged about 22.0% Pb and 18.0 oz. Ag per ton. The operator's final report lists indicated reserves of at least 2,500 tons of similar ore.

A development drift was extended 70 feet northwesterly from the southern end of the intermediate stope to the development drift after diamond drilling was completed.

Exploration work under the contract was described by the engineer of the Bureau of Mines by the following interim reports:

First - January 26, 1953.
Second - April 17, 1953.
Third - June 18, 1953 (included with this final report).

Amendment No. 1 to the contract extended the completion date one month from April 27, 1953 to May 27, 1953.

GEOLOGY

Rocks

Marble and silicated limestone are the dominant rock types in the Defense mine area (Plate I. Geologic Map of the Defense Mine Area). The meta-sedimentary rocks are cut by several dioritic bodies that are probably offshoots of a large granitic mass southwest of the mine area.

White, coarsely recrystallized limestone is the commonest rock type in the marble. Blue-gray, medium-grained marble is abundant in the northeast part of the mapped area, and banded marble, consisting predominantly of 4- to 6-inch white marble layers intercalated with 1- to 2-inch dark-gray bands occur locally. Much of the white marble contains white chert lenses 1- to 3-inches thick traceable for several feet parallel with the bedding. In some places chert is sufficiently abundant to constitute about a fourth of the rock. Poorly preserved fossils, resembling the coral genus Syringopora, a common Lower Mississippian fossil in the general area, occur in the blue-gray limestone in the northern part of the mine area where metamorphic effects were less intense.

The silicated limestone unit consists mainly of a white to grayish-white, hard dense rock rich in calc-silicate minerals, probably mainly diopside and tremolite. Chert lenses in the silicated limestone are generally altered to hornfels minerals. Light-brown tactite, a lesser constituent of the silicated limestone near the quartz diorite, contains abundant garnet and calcite, lesser idocrase, chlorite, oxidized iron minerals, and minor amounts of scheelite.

Diorite occurs as dikes commonly along faults and as salients. It is a light-gray, plagioclase-rich rock speckled with elongated black hornblende and augite phenocrysts, some of which attain 1 cm. in length.

Structure

The meta-sedimentary rocks strike N. 50°-80° W. and dip steeply northeast except for local vertical and steep southwesterly dips in the western part of the mine area. The meta-sedimentary rocks are cut by several near-parallel faults that range in strike from N. 45° W. to N. 80° W. and dip 70°-80° northeast. The faults are marked by conspicuous breccia zones, most of which are 2 to 3 feet thick but locally they are as much as 30 feet thick. The breccia zones contain comminuted meta-sedimentary rocks and podlike masses of jasper, oxidized manganese minerals, and local quartz and limonite.

A flat ore-controlling fault, which does not crop out at the surface, is confined to a zone between the two northernmost northwest-trending faults, shown as faults A and B on the surface map, Plate I. This nearly flat fault strikes, in general, northerly and dips 6°-12° east, except between the upper and intermediate ore bodies where it is steeper.

Ore Deposits

The main ore-controlling feature is a northeast-trending, gently southeast-dipping fault in marble, apparently confined to the zone between faults A and B. Ore is not continuous along the gentle fault, but it is localized, in part at least, in crestal parts of corrugations or rolls. The gentle fault is believed to be a manifestation of differ-

ential movements on the two northwest-striking, steep boundary faults A and B, and continued movement along these main faults probably produced flexures within the gentle fault and the open spaces accessible to ore-bearing solutions.

Mineralogy

Galena and cerussite, the chief ore minerals, are in an iron- and manganese-stained gangue that is rich in calcite and silica minerals. Argentiferous galena is the probable source of the silver. Locally galena occurs as crudely spherical masses as large as a foot in diameter surrounded by cerussite and minor anglesite. Pyromorphite is in small amounts in the upper stopes. In places oxidized manganese minerals are abundant, locally intimately associated with lead minerals, and a lead-manganese mineral has been reported from the mine by Norman and Stewart[1/]. Minor specks of chrysocolla are rare in the ore bodies, and no zinc minerals were observed.

Ore Bodies

The ore body found as a result of the DMEA program is in the crestal part of a roll in the gently dipping fault that plunges S. 65° E. at an average of 6° (Plate II). Where the ore body is intersected by the crosscut from the northwest part of the intermediate workings, the limbs of the roll strike N. 68° W. and dip 26° to the northeast and at about the same angle to the southwest. The roll flattens to the southeast, and the ore body likewise thins to the

1/ Norman, L. A., Jr. and Stewart, R. M., 1951, Mines and Mineral Resources of Inyo County: California Jour. Mines and Geology, vol. 47, p. 68.

southeast. The upper ore body, which has accounted for the major part of the mine's production and the richest ore, appears to lie in a similar roll. A cursory examination of the intermediate or lower ore body did not reveal a similar control was operative there.

The new ore body is exposed for 135 feet along the recently driven drift. It averages about 5 feet in thickness, and is believed to be about 15 feet wide, although little development work has been done to expose its width. Ore is still exposed in the northwest heading of the drift. The ore body so far exposed contained a little more than 1,000 tons of indicated ore, of which approximately 400 tons was mined during development work. The grade of ore, based on four 50-ton shipments to the American Smelting and Refining Company, is 22.0 percent lead and 18.0 ounces of silver per ton. Inferred ore occurs in an unpredictable amount northwest of the drift and probably lower on the flanks of the roll, although the ore thins and probably extends only a short distance down the flanks of the roll. Minor pockets of ore are irregularly distributed in the upper and intermediate workings, but the exposed aggregate total is only a few tons and selective mining methods would be required to exploit it.

Future Exploration

Inasmuch as all known ore bodies lie within the gentle southeast-dipping fault zone, exploration in the immediate future should concentrate on unexplored parts of this structure. Ideally the prime targets should be rolls within the gentle fault zone, but the current exposures are inadequate to enable one to predict the distribution of the rolls.

Exploration could be most efficiently carried out by diamond drilling the parts of the gentle fault southeast of the intermediate stope. This zone could be satisfactorily explored by a series of diamond drill holes fanning out southwesterly from the lower workings at the sites of undrilled holes 4 and 5 of the DMEA program, and by similar drill holes northeasterly from the southeast end of the lower drift that follows fault A (Plate II). Diamond drilling unexplored upper projections of the gentle fault zone also seems worthwhile.

The possibility of other gentle ore-controlling structures occurring at depth between the two boundary faults might also be investigated by deep diamond drill holes.

ORE RESERVE ESTIMATE
(By U. S. Bureau of Mines engineer)

Total of measured, indicated and inferred ore:

	Tons	Grade
First class ore	2,500	22% Pb; 18 oz. Ag
Second class marginal ore .	1,500	8% Pb; 8.9 oz. Ag

PRODUCTION
(From data submitted by operator)
August 8, 1953

Shipments to smelter from ore body discovered by contract

Lot	Tons	Royalty Paid	Net Before Royalty
1	51.09	$ 80.51	$ 1,610.29
2	47.64	131.10	2,622.02
3	55.05	144.59	2,891.82
4	49.54	99.75	1,995.08
6	97.75	154.18	3,083.61
8	103.33	195.78	3,875.62
10	96.36	149.31	2,986.13
Totals	500.76	$953.22	$19,064.57

DMEA should certify that the project was successful and that the Government is entitled to royalties from production.

Production is economically feasible.

DIAMOND DRILL HOLE LOGS

Note: For other diamond drill logs and remarks see figure 1.

Hole No.	Interval, Feet From	To	Description
7	0	94	Limestone.
	94	110	Ore consists of a mixture of Pb CO_3, with manganese, iron oxides, silicates and silicated limestone. Traces of PbS were found. From 107.5 to 108 feet Pb CO_3 assaying 59.2% Pb and 12 oz. Ag.
7b	0	97	Limestone.
	97	108	Siliceous limestone with PbS and Pb CO_3 with iron and manganese oxides and silicates.
	108	115	Limestone.
7a	0	69	Limestone.
	69	70	No ore. Traces of pink manganese carbonate or silicates. No Pb mineralization observed.
	70	91	Limestone.
	91	93	Porphyry dike.
	93	105	Limestone.
8	0	95	Limestone; no ore.
	95	105	Limestone, 104.8 to 105.2 iron oxide stains and silicates, no lead mineralization.
	105	150	Limestone.
9	0	98	Limestone.
	98	98.1	Few small crystals PbS and Pb CO_3 in part of core.
	98.1	106	Limestone.
	106	107.5	Traces Pb in siliceous limestone.
	107.5	112.5	Hole bottom in siliceous limestone with slight iron and manganese oxides stains.

Hole No.	Interval, Feet From	To	Description
11a	0	15	Limestone.
	15	19	Siliceous limestone with iron and manganese oxides. Traces Pb CO_3 and PbS.
	19	25	Limestone.
	25	30	Brown to black stained limestone and traces Pb CO_3.
	30	33	Limestone.
	33	35	Altered stained limestone.
	35	60	Limestone; altered on joint seams.
14	0	82	Limestone.
	82	84	Low grade ore, oxides of manganese and iron with Pb CO_3 in limestone.
	84	98	Limestone.
	98	100	Two 3-inch seams Pb CO_3 with PbS; iron and manganese stained.
	100	110	Limestone.

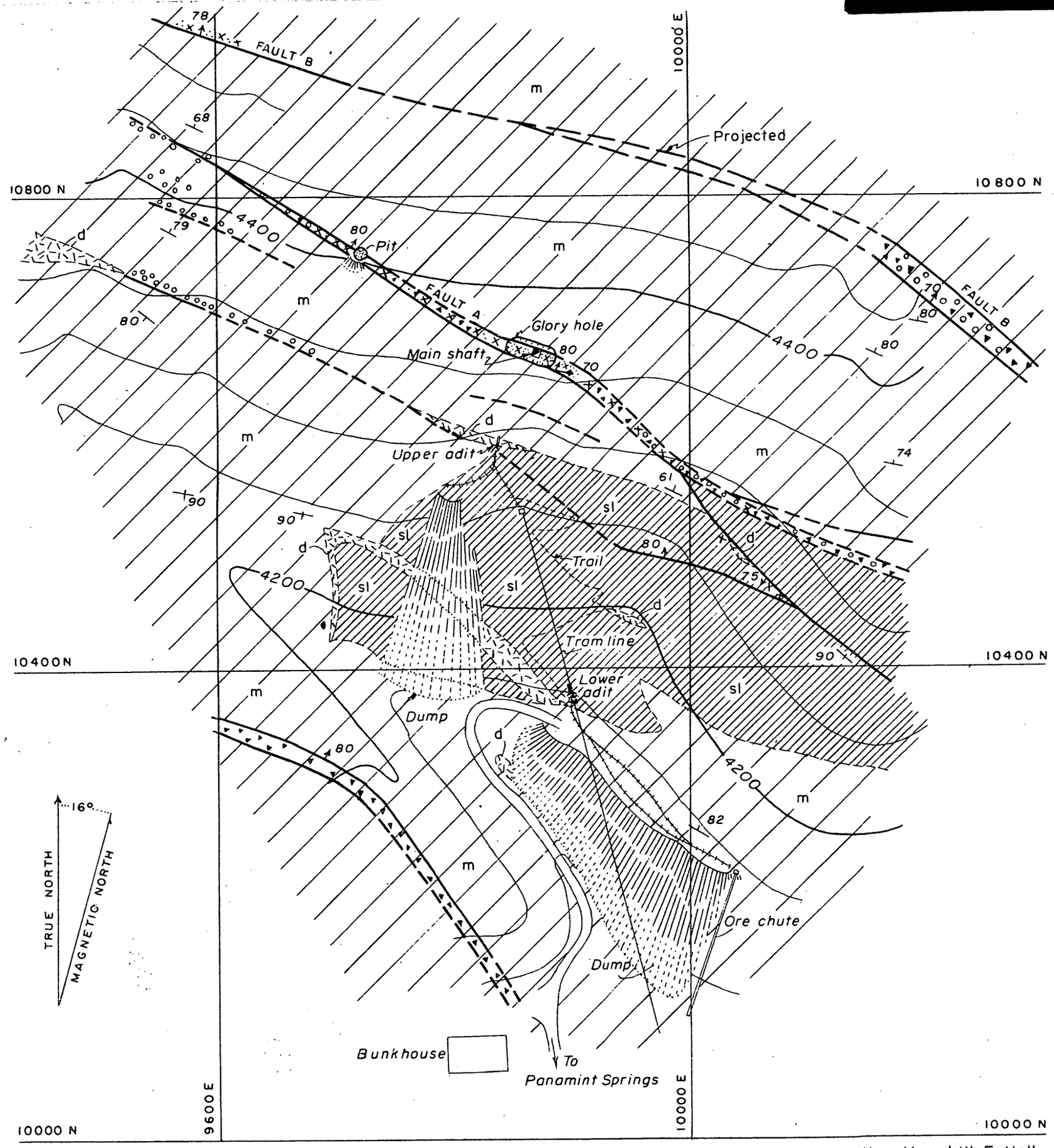
EXPENDITURES

Total approved:	$12,240.00
Total cost of project:	$12,240.00
Government's share of cost:	$ 6,120.00
Government's share unexpended:	0.00
Value of production during operations:	$19,064.57
Government's royalty from shipments:	$ 953.22

EQUIPMENT PURCHASED FOR PROJECT

No equipment purchases were made.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Mapped by E. M. MacKevett and W. E. Hall, July 1953

100 0 100 200 Feet

Contour interval 50 feet

EXPLANATION

METAMORPHIC ROCKS

m — Marble (Includes white and blue-gray marble, locally banded)

sl — Silicated limestone (Includes white silicated limestone, tactite, and minor amounts of marble)

IGNEOUS ROCKS

d — Diorite

Contact, approximately located

Concealed contact

Fault, showing dip (Dashed where approximately located)

Fault, showing bearing and plunge of slickensides

Fault breccia

Strike and dip of beds

Oxidized manganese minerals

Oxidized iron and lead minerals

Jasper

PLATE I. GEOLOGIC MAP OF DEFENSE MINE AREA
INYO COUNTY, CALIFORNIA

FILE COPY
SURNAME:

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

SEP 8 1953

Mr. H. C. Miller, Executive Officer
DMA Field Team, Region III
1012 Flood Building
370 Market Street
San Francisco 2, California

Re: Docket No. DMA-2481 (Lead-Zinc)
L. A. Foreman, and partners
Defense Mine
Inyo County, California
Contract No. Idm-8424

Dear Mr. Miller:

We have received the final audit of the above project, and we presume that the Operator's report of June 5, 1953, submitted with maps, may be considered as their final report.

We lack the final Field Report before making certification. However, we note that the field report of April 17, 1953, by Mr. G. H. Cheahan covered the project in a comprehensive manner, and it would appear that all that is now required from the Field is a brief summation, covering estimated ore reserves, etc.

Sincerely yours,

Ernest Wm. Ellis
ACTING Chairman, Operating Committee

APPROVED: 8

J. H. Hedges
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

WRGriswold/hmj
(9/2/53)
CC to: Docket
Adm. R. File
Op. Committee
Base Metals Division
Mr. Kinkel
Mr. Bishop
Chron.

HHR 9-8-53

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RE
JUL 20 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

July 16, 1953

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2441 (Lead-Zinc)
Defense Mine, Inyo County, California
Contract Idm-E424
Amendment No. 1

Attached are the original and two copies of Amendment No. 1, dated July 8, 1953, extending the completion date of the subject contract to May 27, 1953.

A justification sheet is attached to each copy of the amendment.

The usual distribution has been made of the remaining copies of the amendment.

RECEIVED
JUL 24 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

Cae 7-20-53

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachments

Copy to: A. C. Johnson, Reno (With copy of amendment)
Finance Officer, Region III (With copy of amendment)
E. H. Bailey, USGS
George Mavor

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

RECEIVED
JUL 1 3 1953

1012 Flood Bldg.
870 Market Street
San Francisco 2, California

July 9, 1953

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments

In accordance with instructions in the Minutes of the Operating Committee for March 20, 1953, below is a list of the projects in Region III that were producing ore subject to royalty payments as of June 30, 1953:

Contract	Docket	Operator	
Idm-E153	DMA-67X	Marshall Mining Co.	(Copper)
E424	DMEA-2441	L. D. Foreman, Mary R. Foreman, and Ida L. Cannon	(Lead-Zinc)

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Copy to: E. H. Bailey, USGS

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 8 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

July 3, 1953

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Final Report - Docket DMEA-2441 (Lead-Zinc) Defense Mine, Inyo County, California, Contract Idm-E424

Attached are four copies of Final Report on the above project submitted by Mr. L. D. Foreman, dated June 5, 1953.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno
George Mavor

DEPARTMENT OF THE INTERIOR
Bureau of Mines
RECEIVED
JUN 8 1953

Operations Final Rept

Salt Lake City, Utah.
June 5th, 1953.

1 Final Report November 1952 to May 1953 Docket DMEA 2441 Contract No. IDM - E 424

L. D. & Mary R. Foreman & Ida L. Cannon Pb Zn Ag
1354 Second Ave., Salt Lake City, Utah.

2 Summary:
A - Additional exploration and development is warranted.
B - DMEA should certify that project was successful.
C - Production is economically feasible.

3 Description of work completed:
Project started November 27th, 1952 and completed May 20th, 1953.
2000 Ft. plus diamond drilling completed in 23 holes
Cut four stations.

Raising and drifting done during and since diamond drilling has developed 3000 plus tons of commercial ore. This work is still being carried on to make actual mining as economical as possible. Four carloads of ore shipped from discovery were as follows and indicate probable grade of the ore body.

	Ag	Pb
Lot 1 - 8683	14.75	17.3
2 - 8689	18.68	26.75
3 - 8711	20.48	25.57
4 - 8719	19.8	20.3

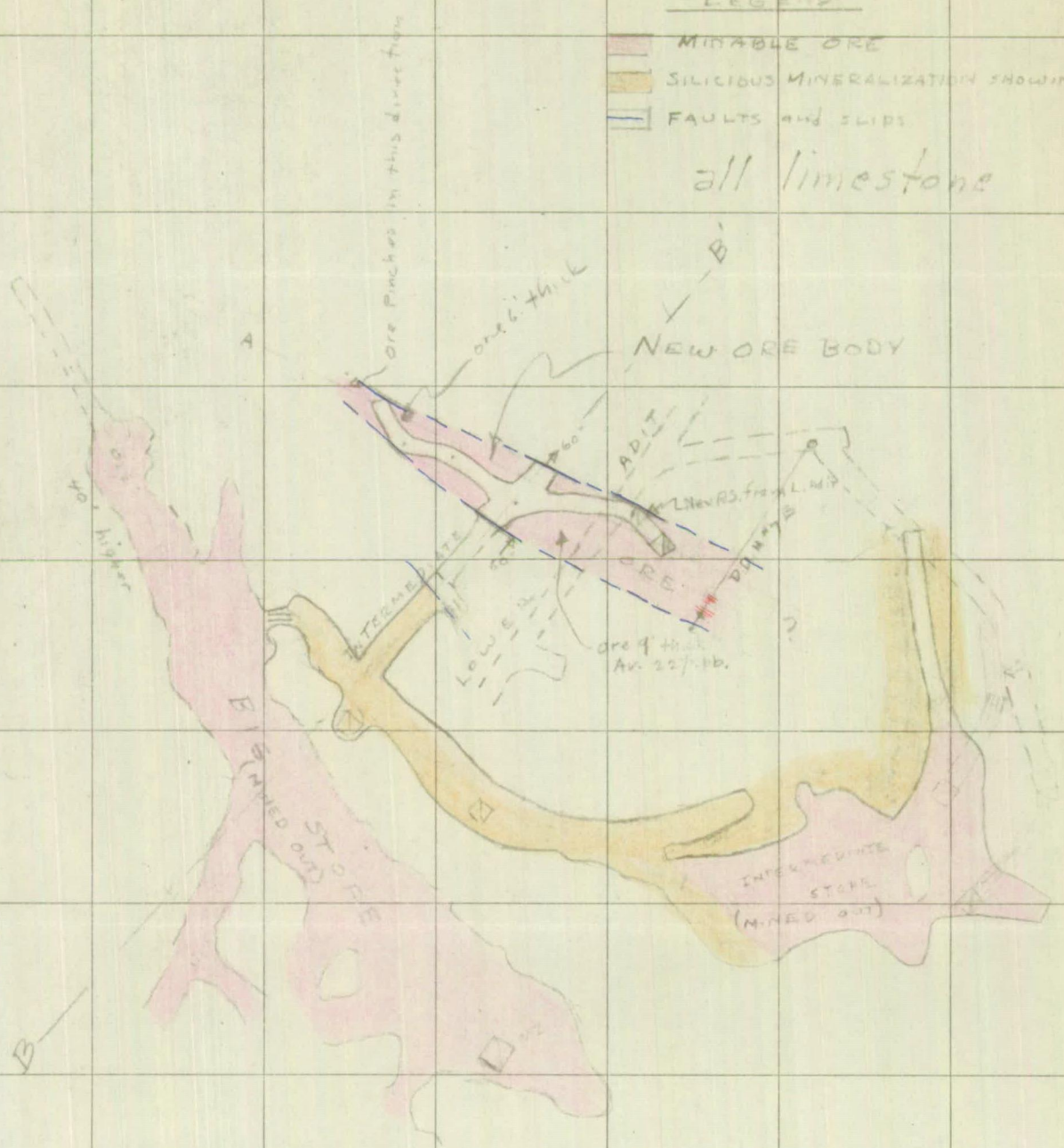
Maps as requested are enclosed herewith.

June 5th, 1953. L. D. & Mary R. Foreman & Ida L. Cannon

Per L D Foreman Title Partner.

MAP OF PORTION OF DEFENSE MINE

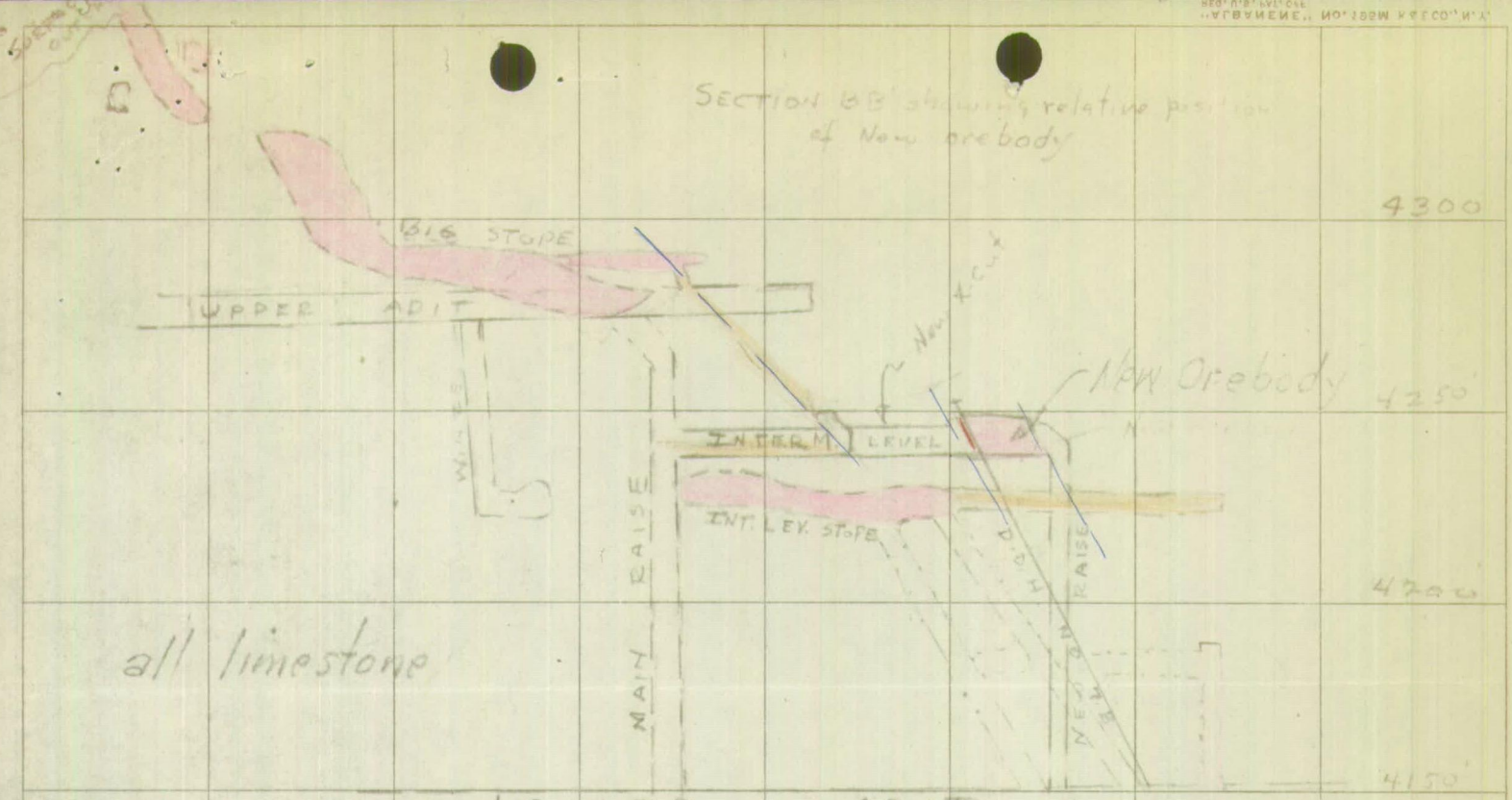
SHOWING NEW LENS OF ORE



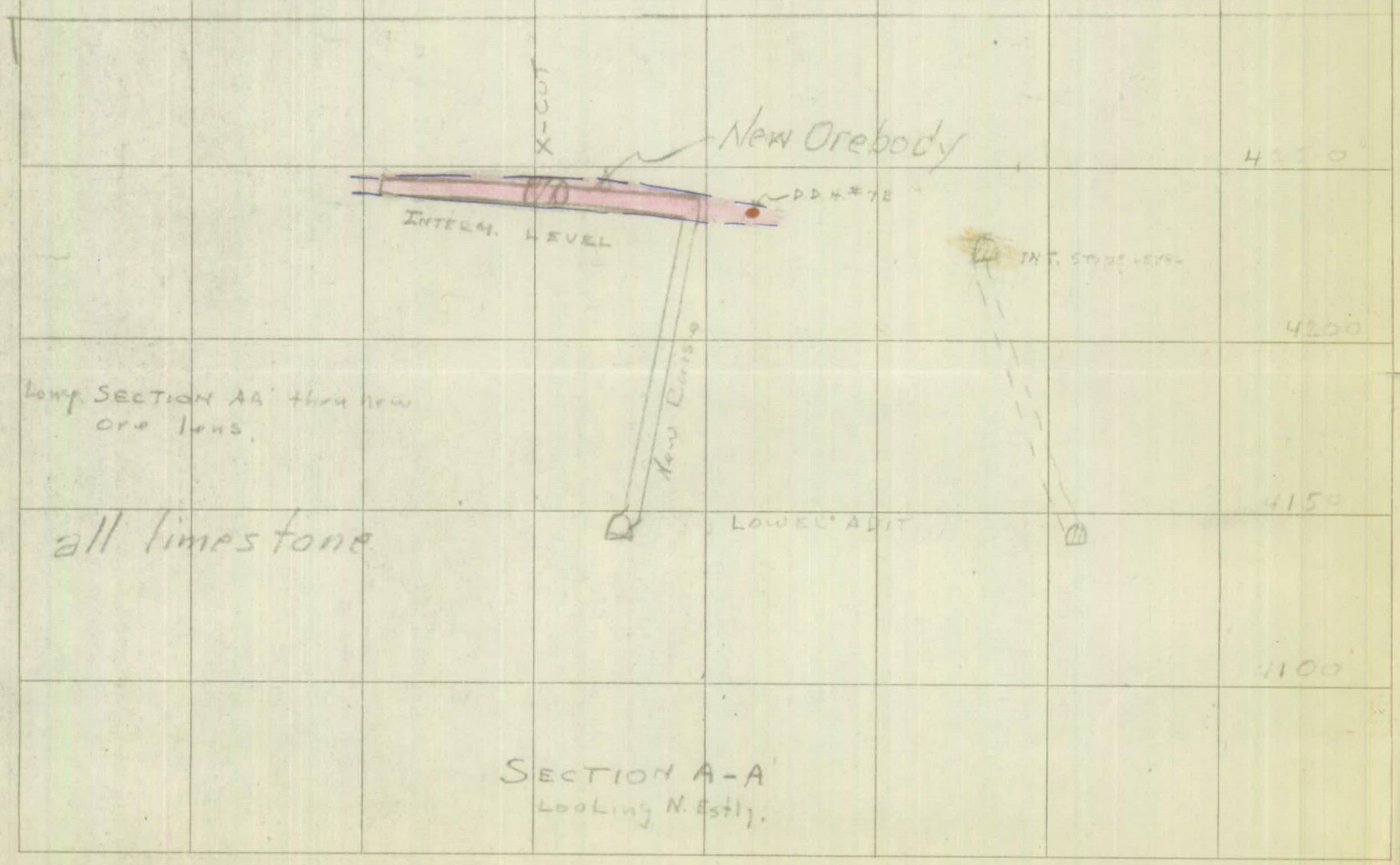
MINE DEFENSE LOCATION PAN. SPGS., CAL. LEVEL INTERMEDIATE

GEOLOGY BY E.L.D.N. SURVEY Tape & Brunton SCALE 1" = 50' DATE 5/2/53

SECTION BB' showing relative position of New orebody



SECTION B-B'
Looking N.westly



SECTION A-A'
Looking N. Estly.

MINE DEFENSE LOCATION INYO CO - CALIF LEVEL SECTIONS
GEOLOGY BY SURVEY SCALE 1" = 50' DATE May 1953

FILE COPY
SURNAME:

500

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

Mr. H. C. Miller, Executive Officer
Field Team, Region VII
1012 Flood Building
870 Market Street
San Francisco 2, California

MAY 1 2 1953

Re: Docket No. [illegible]-2441 (Lead-Zinc)
[illegible] Foreman, and partners
Defense Line
Inyo County, California
Contract No. [illegible]-424

Dear Mr. Miller:

Referring to your letter of April 22, 1953, regarding the above project, it has not been our customary procedure to make certification of projects while they are still active, unless there is some special reason for so doing.

To answer your inquiry on the six-month time interval for certification on projects which were written on the old form contracts, certification should be made within six months after actual completion of work at the property. Hence, in the event that a final Field Team report might be long delayed, we should at least be furnished with a summary stating actual work accomplished, ore grade, tonnage estimate and a general summation.

When project contracts are written on the new forms (1952), we then have a six-month time interval beginning from the date of receiving the Operator's final report, which usually is considerably later than actual work completion.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

APPROVED:

J. H. Hedges
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

WRGriswold/hmj
(5/7/53)
CC to: Docket
Adm. R. File
Op. Committee
Base Metals Division
Mr. Kinkel
Mr. Bishop
Mr. Griswold
Chron.

J.C. 5/12/53

Griswold
Betty

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

RECEIVED
MAY 4 1953
MAY 4 1953

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

April 28, 1953

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2441 (Lead-Zinc)
L. D. Foreman, Mary R. Foreman & Ida L. Cannon, partners
Defense Mine, Inyo County, California
Contract Idm-E424

Four copies of the Interim Report dated April 17, 1953, on the subject operation, written by E. H. Sheahan, Mining Engineer, Bureau of Mines, were sent to you on April 22.

According to Mr. Sheahan's report, this property should be certified as a discovery. The operators have extended a crosscut from the intermediate stope and drifted 90 feet in ore. Four 50-ton shipments have been made to the American Smelting and Refining Company that averaged 22 percent lead and 18 ounces silver per ton. He also states that four additional shipments have been mined from the development drift and are in ore chutes and bins. The full extent of the ore body has not been determined. The work indicates a strike length of 150 feet, an average horizontal width of 15 feet and a thickness of 10 feet.

This would indicate in the neighborhood of 2,250 tons of ore that will average $60.00 per ton, at the present prices of metals, which should be sufficient to pay back the exploration loan that has been made on the property.

The question has arisen as to the time a certification of discovery should be made. The subject contract does not expire until May 27, 1953, yet as a result of the work done under it, four royalty payments have already been made and more will follow. We know, of course, that the Washington office will issue the certificate of discovery, and in the present case there is no question but that a certificate should be issued; we will await your action.

In connection with other contracts there are several questions on which we need enlightment. We know that certification

of discovery must be made within six months, but we are not clear as to the date that that six-months' period starts. Is it six months after ore has been found, six months after the termination date of the contract, or six months after the operator ceases work under the contract, if for some reason or other he does not complete the contract? The date of certification may become a very important date in cases where a property changes hands and the borrower is anxious to get a clear title. There may be other reasons why the date of certification is a very important date.

These questions may be academic, but Mr. Bailey and I would appreciate your thoughts on them at an early date.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

March 24, 1953

Mr. George H. Playter
Assistant Manager
American Smelting & Refining Co.
405 Montgomery Street
San Francisco 2, California

Re: Docket DMEA-2441 (Lead-Zinc)
Defense Mine
Inyo County, Calif.
Contract Idm-2424

Dear Mr. Playter:

In answer to your telephone inquiry and also in reply to the letter dated March 23, 1953, from Mr. L. D. Foreman, of which you received a copy, royalty checks to the Government for shipment of ore from the Defense Mine, Inyo County, California, should be made payable to the Treasurer of the United States. The checks should be sent to:

H. C. Miller, Executive Officer, Region III
Defense Minerals Exploration Administration
1012 Flood Building
870 Market Street
San Francisco 2, California

Attached herewith is a copy of DMEA Order-1, a copy of which is also being sent to Mr. Foreman along with a copy of this letter. Section 10 of that order entitled, "Repayment by operator", gives the percentage of royalty which the Operator shall pay to the Government.

Thanking you for your interest in this matter, I am

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Enclosure

Copy to: L. D. Foreman, Salt Lake City, Utah

DMEA, Washington, D. C.
E. H. Bailey, USGS
A. C. Johnson, Reno

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Bldg.
870 Market Street
San Francisco 2, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 25 1952

November 21, 1952

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Contract Idm-E424
Docket DMEA-2441 (Lead-Zinc)
L. D. Foreman
Defense Mine, Inyo County, California

Reference is made to Mr. Frank E. Johnson's letter of October 27, transmitting to this office the original and five copies of subject contract.

The contract has been executed on the part of the Operator and one copy retained by him. Proper distribution has been made of the Field Team's and Finance Officer's copies, and the original and two remaining copies are returned herewith.

H. C. Miller
Executive Officer,
DMEA Field Team, Region III

Attachment

cc 11-26

Copy to: E. H. Bailey, USGS
George Mavor
A. C. Johnson, Reno (With copy of contract)
Finance Officer, Region III (With copy of contract)

FILE COPY
SURNAME:

500

Corbett
Keller
Bishop
Hoffman

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

Mr. H. C. Miller
Executive Officer, Region III
Mineral Field Team
1012 Flood Building
870 Market Street
San Francisco 2, California

OCT 27 1952

Re: Docket No. DMEA-2441 (Lead-Zinc)
L. D. Foreman
Defense Mine, Inyo County, California

Dear Mr. Miller:

Enclosed please find the contract for exploration work on the L. D. Foreman et al, property.

Mr. Foreman has satisfactorily resolved the questions raised by the legal department, and they find the contract as now drawn satisfactory in form.

If the contract meets with approval, kindly have it signed and return the original and two copies to this office.

Sincerely yours,

(signed) FRANK E. JOHNSON (HB)

Chairman, Operating Committee

10-27-52

Enclosures 6

APPROVED:

Charles N. Merrill (HB)
Member, Bureau of Mines

A. R. Kinkel, Jr. (HB)
Member, Geological Survey

FXCorbett/bw (written 10/21/52)
Copy to: Docket
Admr. R. File
Op. Comm.
H. F. Keller (2)
F. X. Corbett
Mr. Bishop
Mr. McKnight
Chron.

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

DEPARTMENT OF THE INTERIOR
Bureau of Mines
OCT 3 0 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

October 16, 1952

Memorandum

To: Ernest Wm. Ellis, Acting Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2441 (Lead), Defense Mine, Inyo County, California

Reference is made to your letter to me, dated September 26, concerning the question of ownership of the subject property and the identity of the partners.

In reply to my letter of October 3 to Mr. L. D. Foreman (carbon copy to DMEA), Mr. Foreman replied in an undated letter, received in this office on October 15 as follows:

"As to Item 4 A - Form MF 100:
We answered this giving the parties in charge of the operation of the property. R. L. Foreman (Husband of Mary R. Foreman) is Superintendent in charge of mine operations. L. D. Foreman handles the business and accounting end of the operation.

"As to Question 8 Form MF 100:
The owners of the land and business are one and the same. You are correct in assuming that the applicant for this loan is L. D. and Mary R. Foreman and Ida L. Cannon. The property and business is owned and operated by "Foreman & Foreman, Partnership." This partnership consists of L. D. & Mary R. Foreman and Ida L. Cannon.

"In answering Item 4 A - Form MF 100 we were under the impression this was to ascertain who was handling the operation for the Partnership."

I trust that the above information will clear up the matter of ownership of the involved property.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to E. H. Bailey, USGS

2441

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 1 1952

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

October 3, 1952

Docket file

Mr. L. D. Foreman
1354 Second Avenue
Salt Lake City 3, Utah

Re: Docket DMEA 2441 (Lead)
Defense Mine
Inyo County, California

Dear Mr. Foreman:

The Washington Office of the Defense Minerals Exploration Administration informs us that before the contract, covering the above-numbered exploration project can be completed, the question of ownership of the property involved and the idenity of the partners will have to be clarified.

It is stated on Form MF-103 that the property is owned by "Foreman & Foreman, Partnership." Form MF-100 states that the property is ".... in operation by L. D. Foreman and R. L. Foreman," and that the applicant is a partnership comprised of L. D. Foreman, Mary R. Foreman and Ida L. Cannon. Our examining engineers in their report on your property, dated July 8, 1952, state that "In April of 1951, Mr. L. D. Foreman and family obtained control of the entire property."

It is not clear from these recitals whether the owners of the land and the owners of the business are one and the same. Are we correct, therefore, in assuming that the applicant for this loan is L. D. and Mary R. Foreman, and Ida L. Cannon? This assumption is based upon the answers to question 8 on Form MF-100. On the other hand, if the assumption is incorrect and if R. L. Foreman holds an interest in the land in addition to L. D. and Mary Foreman, and Ida L. Cannon, then the partnership is owner and lessee of the property and a copy of the lease must be furnished, and the Owner's Consent to Lien of the lessor must be obtained and furnished to us.

Will you, therefore, kindly furnish us with a statement clarifying the question of ownership of the property and the idenity of the partners.

Sincerely yours,

H. C. MILLER

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to DMEA, Interior Bldg., Wash., D.C.
E. H. Bailey, USGS

FILE COPY
SURNAME:

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

Keating
Hatfield
Fogman

SEP 2 6 1952

Mr. R. C. Miller
Executive Officer, Region III
DMEA Field Team
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMA 2441 (Lead-Zinc)
L. D. Foreman
Defense Mine, Inyo County, Colorado

Dear Mr. Miller:

A contract has been prepared covering the above-numbered proposed exploration project. However, before the agreement can be completed, the question of ownership of the property involved and the identity of the partners should be clarified and properly stated in the contract form. We call your attention to the following:

Form DF-105 states that the property is owned by "Foreman & Foreman, Partnership." Form DF-100 states that the property is "*** in operation by L. D. Foreman and M. L. Foreman" an that the applicant is a partnership comprised of L. D. Foreman, Mary R. Foreman and Ina L. Cannon. In the Field Team Report dated July 6, 1952, it is stated that "In April of 1951, Mr. L. D. Foreman and family obtained control of the entire property."

It is not clear from these recitals whether the owners of the land and the owners of the business are one and the same. It has been assumed, for the purposes of drafting the contract, that the applicant is L. D. and Mary R. Foreman, and Ina L. Cannon. This assumption is based upon the answer to question 8 on Form DF-100. If this assumption is correct, and if all the interest in the land is held among these three, then the contract form, as now drafted, contains the proper recitals. However, if this assumption is correct and if all the interest in the land is not held among these three, for example if the son, M. L. Foreman, holds any interest in the land, then the contract form, as now drafted, must be modified to restate that the partnership is owner and lessee of the property, a copy of the lease must be furnished, and the Owner's Consent to Lien of the lessor must be obtained.

Will you be kind enough to obtain the required information from the Applicant and forward the data to this office so that the contract can be completed.

Sincerely yours,

Ernest Wm. Ems (B.H)

ACTING Chairman, Operating Committee

B.H.
9.29.52

Approved:

C. H. Johnson (B.H)
Member, Bureau of Mines

A. R. Kriebel, Jr. (B.H)
Member, Geological Survey

AGKeating/bw (written 9/24/52)

copy to: Docket
Admr. R. File
Op. Committee
H. F. Keller (2)
A. G. Keating
Mr. Bishop
Mr. McKnight
Chron.

140

FILE COPY
SURNAME:

Bruhin

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

September 15, 1952

Memorandum

To: Administrator

Through: R. F. Keller

From: Chief Counsel

Subject: L. D. Foreman et al, Docket No. DMEA 2441

There is attached a draft of a contract covering the above-described project. However, prior to execution of the contract, the question of ownership of the property involved and of the identity of the partners must be clarified and properly stated on the contract form.

Form MF-103 states that the property is owned by "Foreman & Foreman, Partnership." Form MF-100 states that the property is "*** in operation by L. D. Foreman and R. L. Foreman" and that the applicant is a partnership comprised of L. D. Foreman, Mary R. Foreman and Ida L. Gannon. In the Field Team Report dated July 8, 1952, it is stated that "In April of 1951, Mr. L. D. Foreman and family obtained control of the entire property."

It is not clear from these recitals whether the owners of the land and the owners of the business are one and the same. It has been assumed, for the purposes of drafting the contract, that the applicant is L. D. and Mary R. Foreman, and Ida L. Gannon. This assumption is based upon the answer to question 8 on Form MF-100. If this assumption is correct, and if all the interest in the land is held among these three, then the contract form, as now drafted, contains the proper recitals. However, if this assumption is correct and if all the interest in the land is not held among these three, for example if the son, R. L. Foreman, holds any interest in the land, then the contract form, as now drafted, must be modified to restate that the partnership is owner and lessee of the property, a copy of the lease must be furnished, and the Owner's Consent to Lien of the lessor must be obtained.

Of course, if the initial assumption is incorrect, then the form must be redrafted properly.

A copy of the map must be attached to each copy of the contract prior to execution.

J. L. Hefflund
J. L. Hefflund
Chief Counsel

N.S
R&R

Attachments

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

August 21, 1952

RE: DMEA-2441
Defense Mine
Modoc District
Inyo Co., Calif.
$12,240

Memorandum

To: H. F. Keller

From: E. L. Newcomb, U.S.G.S. & O. M. Bishop, U.S.B.M.

Subject: Recommendation for approval

The applicant requests assistance to explore his property by 2,000 feet of diamond drilling on three levels. If the drilling results are favorable, he proposes to do additional exploratory drifting and raising.

The field team recommends the diamond drilling program outlined in their report for approval. The project will explore for oxidized lead-silver orebodies in limestone.

Two lens-shaped orebodies have been mined on the Upper and Intermediate levels. Reported production has been 8,621 tons with an average grade of 15-24 percent lead and 9-15 oz./ton silver. Two-thirds of this production has probably come from the Upper level stopes. Values of five samples taken by the field team range from 9.5-36.4 percent lead, less than 1 percent zinc, less than 0.3 percent copper, less than .03 oz./ton gold and 9-103 oz./ton silver over widths of 8-42 inches. As these samples were from the old workings, they roughly indicate the tenor of the orebodies and the ore remaining in pillars and old stopes.

Mineralization occurs in irregular flat-lying fissures and replacement orebodies which rake about 25 degrees eastward. The main structural controls are believed to be flat-lying shear zones in limestone between two steep, north dipping faults.

The diamond drilling program recommended by the field team will test for possible extensions of the two known orebodies, but its main objective is to locate new orebodies near the present workings. A series of short holes (100-150 feet) will test the ground adjacent to the workings on all three levels of the mine.

HCRubin/mef
cc to: Mails and Files
Mr. Keller
Mr. Hofflund
Mr. Rubin
Chron.

Although the project is speculatory, the proposed drilling appears to be the most suitable exploration for the property. We concur with the field team recommendation that the application be approved.

E. L. Newcomb
U. S. Geological Survey

O. M. Bishop
U. S. Bureau of Mines

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

July 29, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2441 (Lead), Defense Mine, Inyo County, California, L. D. Foreman, 1354-2nd Avenue, Salt Lake City 3, Utah, $10,000

Reference is made to subject "Review of Application for Exploration Assistance," dated April 3, 1952 and to your letter to me, dated April 10, 1952, requesting additional data on the proposed exploration program at the Defense lead-silver mine.

Attached are four copies of a report - DMEA-2441, Defense Mine, Inyo County, Calif., Lead-Silver, by Benjamin H. Sheahan, Mining Engineer, U. S. Bureau of Mines, and E. M. MacKevett, Geologist, U. S. Geological Survey, dated July 8, 1952.

The engineer and geologist are in agreement that a program of diamond drilling is warranted on the property. The oxidized lead-silver ore occurs as irregular replacements in limestone. The only difference in the reports submitted by the geologist of the U. S. Geological Survey and the engineer of the Mining Division are that Mr. Sheahan believes that some of the ore in old stopes should be mined before a drilling program is started. In other words, in this type of deposit, he is more inclined to follow the ore instead of doing blind prospecting work by diamond drilling. However, he is in agreement with the recommendations that have been made by Mr. MacKevett of the Survey; that a certain amount of drilling is warranted to prospect for lenses of oxidized lead-silver ore. Mr. Newman's report on the property more or less suggests the same program.

We concur with the recommendations that have been made and recommend that favorable consideration be given the applicant's request for a defense loan.

The answers to the questions raised in your letter, dated April 10 are as follows:

1. Diamond drilling will be done under contract at a price of approximately $5.50 per foot.

2. A complete inventory of equipment has been taken and is listed in the report, however, only part of the equipment will be used in the exploration program as outlined in the engineer's and geologist's report.

3. The claims are unpatented claims and valid location certificates are recorded at Independence, Calif., as follows:

Defense Claim, Book 55, page 205, 11/18/41
Defense No. 1, " 55, page 470, 7/20/42
Defense No. 2, " 55, page 470, 7/20/42.

Mr. L. D. Foreman and Mr. W. V. Skinner purchased the property under bond and lease in 1946 and 1947. Terms included a $25,000 purchase price with 12 percent royalty. In April of 1951, Mr. L. D. Foreman and family obtained control of the entire property.

4. The property was surveyed by Mr. E. W. Newman in December 1950. Mr. MacKevett of the Survey has used Mr. Newman's map and spotted holes for diamond drill exploration of the property. This map is attached to the report.

5. A reasonable estimate of costs for the exploration of the Defense claims would be as follows:

Supervision, Engineering and Accounting 20 weeks at $90/week	$1,800
Power, Compressed Air, Water and Supplies $60/week.	1,200
Diamond drilling by contract as stated by operator $4.50/foot - 2,000 feet. .	9,000
	$12,000

Estimated cost 2,000 feet diamond drill hole at $6.00/ft	$12,000
Repairing four drill stations at $60.00 each	240
Total Cost	$12,240.

The docket is being returned herewith.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachments
Copy to E. H. Bailey, USGS

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

DEFENSE MINERALS ADMINISTRATION

ON-SITE Report

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

AUG 4 1952

DMEA-2441, Defense Mine
Inyo County, Calif.

- Lead-silver -

Benjamin H. Sheahan, Mining Engineer
U. S. Bureau of Mines

E. M. MacKevett, Geologist
U. S. Geological Survey

July 8, 1952

Reviewed by
DMEA OPERATING COMMITTEE

8-8-52
(date)

DMEA-2441, Defense Mine

Inyo County, Calif.

SUMMARY

The Defense Mine is a lead-silver property, located in Inyo County, Calif., on the east slope of the Argus Range and 11.4 miles by road southwest of Panamint Springs.

The property is controlled by Mr. L. D. Foreman, the applicant for a Government exploration loan, docket DMEA-2441.

Oxidized lead-silver ore occurs as irregular replacements in Paleozoic limestone. The outcrop of the mineralization was discovered some time prior to 1941, and a few car loads of ore were shipped from the main discovery shaft. Mr. Foreman and partner purchased the property in 1946. They drove the upper tunnel approximately 95 feet, intersected the main stope ore body and produced over 7,000 tons of ore by 1949, which averaged about 21% lead and 11.2 oz. silver.

Following this early period of prosperity a lower tunnel was driven; considerable capital was invested but no ore was found to compensate for the expenditure.

In 1952 the owner requested Government assistance to conduct a diamond drilling exploration program. A revised program is plotted on (Plate 1), as determined by the recent examination. This program has some merit as described by the examining geologist.

The engineers conclusions are that several narrow streaks of ore along the walls of the stopes should be mined before undertaking a core drilling program. The ore bodies are irregular in shape and cannot be projected from one level to another.

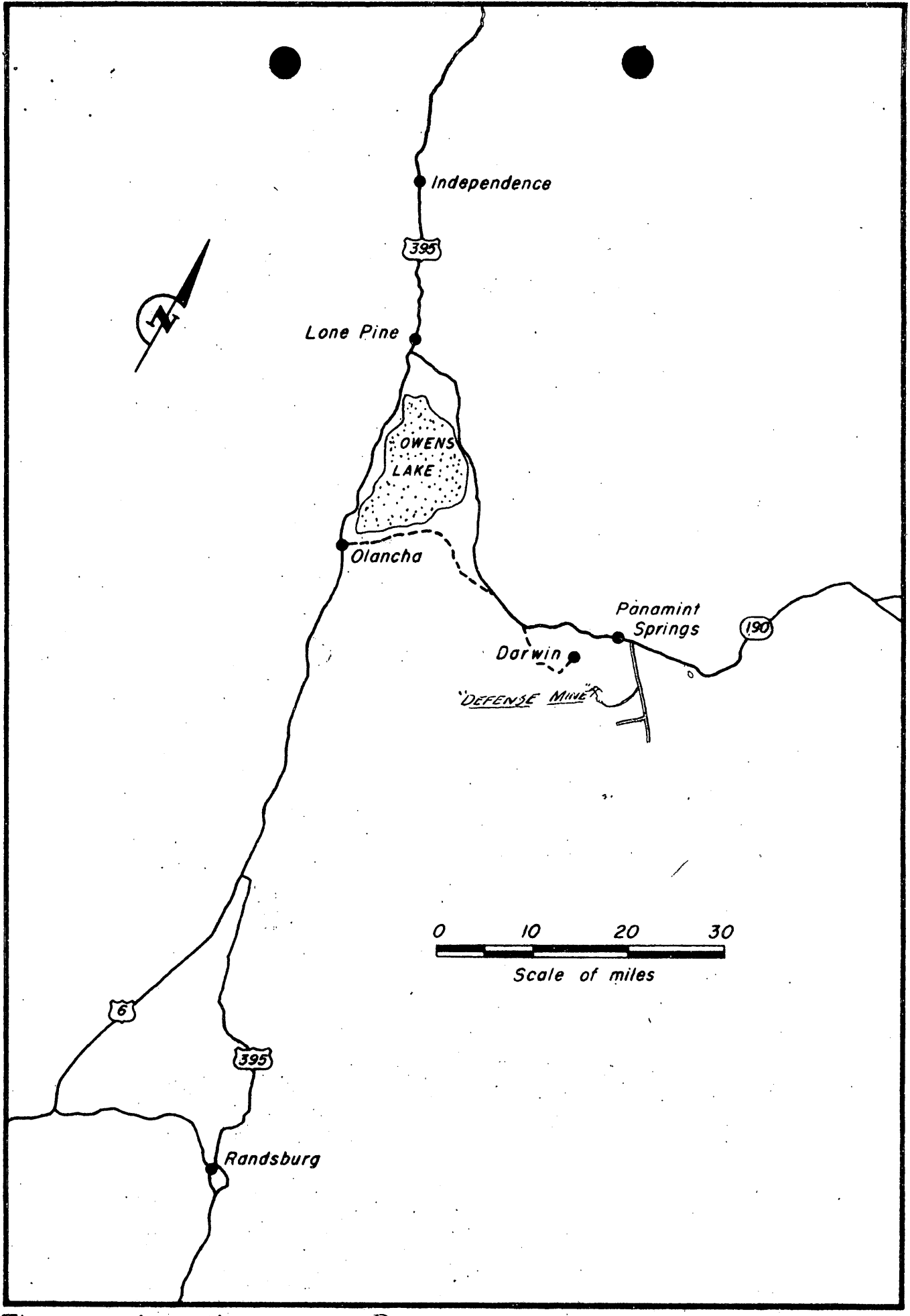


Figure 3 · Location map, Defense Mine, Inyo County, California

INTRODUCTION

The Defense (lead-silver) Mine, docket DMEA-2441, was examined by an engineer of the Bureau of Mines jointly with a geologist of the Geological Survey on June 4 and 5, 1952. Mr. Robert Foreman, superintendent of the property and son of L. D. Foreman, the principal owner, accompanied the examining engineer and geologist.

Property holdings consist of three unpatented mining claims known as the Defense, Defense No. 1 and Defense No. 2 situated in the Modoc Mining District, Inyo County, California; and are at an altitude of 4,300 feet, in T. 19 S., R. 42 E., M.D.B.&.M.

To reach the property from Panamint Springs, State highway 190 is followed easterly 1.8 miles on paved highway, turn right and follow graded road southerly 5.7 miles to road fork, turn right and follow rough gravel road westerly 3.9 miles up a steep canyon to the camp at the Defense Mine.

Prior to the recent examination of the Defense Mine, examinations were made by the following engineers and geologists:

1951 - Kenyon Richard, geologist, American Smelting & Refining Co.
1952 - E. W. Newman, geologist, " " " "
1951 - James R. Wilson, geologist, Anaconda Copper Co.
1943 - Frank J. Wiebelt, Mining Engineer, U.S. Bureau of Mines.

Conclusions of the examinations made by Mr. Richard for the A.S.&R. Co., and conclusions by Mr. Wilson for the Anaconda Copper Co. were not obtained by the examining engineer, however, the property was not purchased by either company.

PHYSICAL FEATURES

The mine is located in an area of rugged topography on the eastern slope of the Argus Range. Water is scarce in this region, but is sufficient for the domestic requirements of a small crew at the property. A spring, located 0.8 mile southeast of the mine, furnishes sufficient water for present requirements of a few hundred gallons per day which is hauled to the property.

The climate is very hot during summer months. Rain fall during winter months is light. Occasional cloudbursts during early summer may cause considerable damage to the road leading up the steep canyon from Panamint Valley to the mine.

Early production of ore from the property was hauled by truck to Cartago, a station on a branch line of the Southern Pacific Railroad. Recently the ore has been hauled by truck to Trona, Calif., at a cost of $5.50 per ton for the 46 mile haul. Railroad freight to the A.S.&R. smelter at Selby, Calif., averages about $4.80 per ton. No electric power is available at the property. Diesel fuel oil is hauled to the property from Panamint Springs by the mining Company.

Labor is scarce, but some miners are occasionally available from Darwin, Calif.

HISTORY AND PRODUCTION

The Defense Mine was discovered some time prior to 1941. In 1941, Mr. C. C. King and J. C. Hodge relocated the property. They did a small amount of development work at the outcrop and shipped a few carloads of ore which contained approximately 16% lead, 30% combined manganese and iron, and 3.0 oz. silver per ton.

The last valid location certificates are recorded at Independence, Calif., as follows:

Defense Claim, Book 55, page 205, 11/18/41
Defense No. 1, " 55, page 470, 7/20/42
Defense No. 2, " 55, page 470, 7/20/42

Mr. L. D. Foreman and Mr. W. V. Skinner purchased the property under bond and lease in 1946 and 1947. Terms included a $25,000 purchase price with 12 percent royalty. In April of 1951, Mr. L. D. Foreman and family obtained control of the entire property.

Production figures included with the docket are as follows:

Year	Ore Dry Tons	%, Pb	Oz. Ag/Ton
1947	518.8	23.72	8.73
1948	3,979.2	21.08	11.93
1949	2,695.4	19.98	12.92
1950	198.8	14.91	14.77
1951	1,229.0	16.76	14.73
	8,621.2		

A lower tunnel was started in June of 1949 and was driven under the mineralized zone. No ore was found on this level and many thousand dollars were spent in driving this lower adit with raises to the intermediate stope shown on plate I. The company is now driving two development headings in the vicinity of the intermediate stope.

SAMPLING

A few samples were taken from the upper and intermediate stope at locations shown on plate I. These samples indicate the existance of a small tonnage of ore in place which was left in pillars, or as scabs and narrow streaks along the walls of the stopes.

Sample No.	Width	%,Pb	%,Zn	%,Cu	Oz.Au/Ton	Oz. Ag/Ton	Location
S-106	8 inches	18.6	0.7	0.10	0.015	9.55	Small pillar upper stope
S-107	8 "	36.4	0.8	0.20	0.02	11.30	Do
S-108	12 "	20.4	0.5	0.10	0.04	63.20	Do
S-109	12 "	18.8	0.4	0.18	0.03	103.60	Do
S-110	42 "	9.5	0.4	0.30	0.015	8.90	Intermediate or lower stope

The samples were taken to show that some ore remains in the mine. All of the narrow streaks were not sampled as it was considered almost impossible to predict how far the mineralization would extend into the walls. Past production and shipment record data indicate the tenor of the ore mined.

DEVELOPMENT

Plate 1 shows the outline of the mine workings. The property was first developed by sinking on the outcrop at the main shaft. This work was done by Hodge and King who sank about 50 feet on the ore body.

In 1946, Mr. Foreman and Skinner drove the upper tunnel a distance of approximately 95 feet and struck the main ore body 81 feet below the discovery shaft. Most of the production from the mine was hauled out of this tunnel and by a 700 foot tramway; the ore was transported down the steep hillside to an ore bin where it could be hauled by truck. The mine workings have required practically no timbering. Most of the workings are open and in good condition. Some waste rock has been left on the floor of the stopes.

A lower haulage tunnel was started in 1949 and approximately 1,000 feet of workings were driven. Three raise connections were driven to the intermediate stope.

Ore from the intermediate stope is passed down the raises to the lower tunnel where it is hauled by one ton cars and trammer to the portal and dumped into an one hundred foot incline chute to an ore bin.

Mining is done by open stope methods with efficient use of slushers to transfer the ore to chutes leading to the haulage levels.

There is no mill at the property. Some hand sorting is done at the surface where coarse waste limestone is thrown out of the ore cars and ore bins.

Practically the entire production from the property has been shipped to the American Smelting and Refining Co. smelter at Selby, Calif. Smelting charges average about $4.00 per ton. Deductions are typical for direct smelting lead ore of this grade.

EQUIPMENT AND HOUSING FACILITIES

Housing facilities are sufficient for a crew of ten men and include a boarding house, a dwelling and a quanset hut bunk house.

Equipment Owned	Condition	Monthly rental rate quoted
1 Air compressor, 500 cfm	fair	$ 125.00
1 Trammer	"	30.00
2 Drifter machine drill with steel and bits	"	25.00
1 Stoper with steel and bits	used	15.00
1 Water truck, 2 ton	"	16.00
1 Jeep	good	10.00
3 Tuggers and 2 slushers	fair	-
1 Water pump	poor	5.00
Miscellaneous mine tools, track, water and air pipe	fair) fair)	30.00
1 Aerial tramway, 1200 lb. bucket capacity		-
1 Aerial tramway, 400 lb. service line		-
2 Ore bins, 100-ton capacity		-
5 Mine cars, 16 cu. ft. capacity		10.00
1 Pickup truck, 3/4 ton capacity		15.00
1 Machine shop for light repair work		

EXPLORATION COSTS

The superintendent at the property quoted the following cost data:

Labor:			
	Superintendent	salary	$90.00/week
	Miners	wages	15.00/day
	Muckers	wages	14.00/day
Supplies:			
	Diesel fuel oil	cost	0.147/gal.
	Powder, 40%	cost	0.185/lb.
	Blasting caps	cost	2.00 per hundred
	Fuse	cost	1.20 per hundred feet
Industrial insurance (Not including Social Security and unemployment insurance)			13.54 per $100
Freight by truck - ore haulage from mine to Trona			5.40 per ton

The superintendent stated that Mr. George Lewis, a diamond drill contractor at Darwin, Calif., made a preliminary bid of $4.50 per foot to do core drilling. The company would supply air and water.

The lower adit was driven at a cost of approximately $35.00 per foot. Small prospect drifts and crosscuts are said to cost $15.00 per foot.

Some engineering and geologic mapping work has been furnished to the company as a service by the American Smelting and Refining Co.

According to the superintendent, the main accounting records are prepared by his father, Mr. L. D. Foreman, at Salt Lake City, Utah.

ENGINEERS CONCLUSIONS

1. Several narrow streaks of ore and scabs along the walls of the stopes should be mined before undertaking a core drilling program. The ore bodies are irregular in shape and cannot be projected from one level to another. Under the circumstances it is believed that

better results would be obtained by following the ore by mining metheds. The drilling program has possibilities of indicating other flat lying tabular lenses of ore.

2. Some preliminary exploration work should be done by the operator at a manganese stained outcrop located northwest of the main shaft as mentioned by the geologist.

DISCUSSION

The superintendent requested that exploration work consisting of 2,000 feet of diamond drilling be given consideration. The drilling plan submitted with the applicant's docket was revised as shown on plates 1 and 2.

The applicant for Government exploration assistance has obtained a preliminary bid of $4.50 per foot of diamond drill hole by a contractor from Darwin, Calif.

The engineers estimate for the cost of this exploration work follows:

Supervision, Engineering and Accounting 20 weeks @ $90/week	$1,800	
Power, Compressed Air, Water and supplies $60/week	1,200	
Diamond drilling by contract as stated by operator $4.50/foot - 2,000 feet . . .	9,000	
Estimated cost 2,000 feet diamond drill hole @ $6/foot		$12,000.00
Repairing four drill stations @ $60/each		240.00
Total cost		$ 12,240.00

Repayment of the requested loan cannot be definitely determined. A production of several thousand tons of ore would be required from the property to repay the loan.

Defense Mine, DMEA 2441

Inyo County, California

Geologist's Contribution

E. M. MacKevett

Reviewed by
DMEA OPERATING COMMITTEE
8-8-52
(date)

Summary

Geologist's Recommendation

It is recommended that a revised exploration program consisting of 2,000 feet of diamond drilling be carried out. This program is outlined in the text and the drill hole locations are plotted on the accompanying composite map (Plate 1).

Geology

General Geology

The Defense mine lies on the rugged eastern slope of the Argus Range in an area underlain largely by beds of Paleozoic limestone. These beds in the vicinity of the mine strike northwest and dip northeast. They consist of several hundred feet of light-gray to white recrystallized limestone and a blue-gray limestone member less than 100 feet thick. Locally beds in both limestones contain light-gray chert lenses about 6 inches in maximum dimension that appear to be concordant with bedding. A cursory examination of the surrounding area revealed that the recrystallized limestones underlie dark-gray fossiliferous limestone. Based on lithologic similarity and apparent stratigraphic position the rocks of the mine area probably are members of McAllister's 1/ Devonian Lost Burro formation, which is the host for several other northern Inyo County lead-zinc-silver deposits, notably the Cerro Gordo and Lippincott mines. A stock-like body of gabbro 2/ crops out to the south and numerous salients of this intrusive occur in the mine area.

Contact-metamorphosed zones 5 to 40 feet thick, occurring near the gabbro-recrystallized limestone contact, are composed mainly of diopside (?) garnet, and epidote. The writers examined one of these zones cut by the lower tunnel with an ultra-violet lamp, but no scheelite was found.

Structure

The mine lies in a highly folded and faulted area. The recrystallized limestone is overturned and contorted in several places, especially in the proximity of intrusive salients; however, these features and others such as the local flattening and steepening of bedding seemed to have had little effect in localizing ore. The dominant faults trend northwest and dip steeply northeast, but there are also other irregular faults characterized by breccia zones in the vicinity of intrusive contacts.

The main structural control of the ore deposits seems to be thin, relatively flat-lying fissures between two northwest-striking faults that dip 70° northeast. One of the steep-dipping faults is exposed at the

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1/ McAllister, J. F., Rocks and structure of the Quartz Spring area northern Panamint Range, California: to be published by California State Div. of Mines.

2/ This rock was called gabbro by Kenyon Richard and E. W. Newman, American Smelting and Refining Company geologists, who have examined the property. The writer believes this hornblende-rich rock to be diorite but will use the name gabbros to concur with the terminology of the application.

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collar of the main shaft; the other has surface exposures about 300 feet north of the main shaft (beyond the limits of the surface map).

Ore Deposits

Both fissure filling and replacement were involved in the emplacement of the ore at the Defense mine. Local zones in flat-lying fissures apparently were the most favorable places for fissure filling, and replacement took place outwardly from these fissures. As only two ore bodies are known in the mine, most of the flat fissures likely were too tight to conduct ore solutions. The two ore bodies that are known in the mine are roughly tabular in shape and plunge gently east. Judging from the size of the upper stope, the irregularly shaped upper ore body had approximate maximum dimensions of 250 feet in length, 125 feet in width, and 30 feet in thickness. However, the average dimensions of the ore body were considerably less. The lower ore body, which is exposed on the intermediate workings, is at least 85 feet in length, 40 feet wide and 15 feet thick. Probably two-thirds or more of the total production of 8,621 dry tons came from the upper ore body, which contained most of the high-grade shoots. The ore shipped from 1947 to 1951 averaged 20.14 percent lead and 12.51 ounces of silver per ton.

The chief ore minerals are argentiferous galena, cerussite, and anglesite. Manganese staining is prevelant throughout most of the two ore bodies, subsidiary fissures, and surface outcrops, including the discovery outcrop of the main ore body. Minor quantities and pyromorphite, minium, chaclcopyrite, covellite, linarite, smithsonite, and pyrite have been reported from the ore bodies , and most of these minerals were observed during this examination. Most of the mined ore contained less than 1 percent zinc which is in marked contrast to other zinc-rich base metal mines of Inyo County. As far as could be ascertained, the two ore bodies are similar in composition. Their gangues are iron-and manganese-stained quartz, calcite, and jasper. The steep fissures and breccia zones, which have not yielded ore also contain jasper, limonite, manganese staining, and locally minor amounts of opal.

Reserves

The essential problem in considering the merit of the proposed exploration of the Defense mine appears to be not one of evaluating known reserves, but of weighing the chances of discovering new ore bodies. The known reserves in the mine included about 75 tons of indicated ore in the upper ore body consisting mainly of "scabs", pillars, and remnants of ore in incompletely mined stopes. This ore is similar in grade to that previously mined from the upper ore body and assays about 20 percent lead and 12 ounces of silver per ton. An indicated ore reserve of 560 tons remains in the intermediate ore body, which is believed to be 3½ feet in average thickness and leaner than the upper ore body. Ore shows on the intermediate stope for a length of 40 feet and a width of 40 feet from the crosscut from which sample S-110 was taken. Based on sample S-110, which is believed to be representative, this block contains 9.5 percent lead and 8.9 ounces silver per ton.

Probably several hundred tons of inferred ore occurs in uncovered ore bodies, and the proposed diamond drilling program should reveal much of this ore.

Proposed exploration

The applicants have proposed 2,000 feet of diamond drilling to find new ore bodies, but the locations of their drill holes are shown only in section in the application. The writer's, although agreeing in essence with the applicant's proposal, suggest a few revisions in locating the drill holes in order to prospect certain favorable zones. Near horizontal drill holes have been utilized in the few hundred feet of unsuccessful diamond drilling that has been done on the property in the past, but the use of steeper holes would greatly increase the target area. The length, location, and inclination of the drill holes suggested by the writers are plotted on the accompanying composite map of the workings (Plate 1). It is believed that the drilling program could be best be conducted by first drilling from the lower workings, than drilling from the intermediate workings, and, finally, drilling from the upper workings. Following is a tabulation of the proposed drill holes as revised by the writers:

	Diamond Drill Hole Number	Length (In feet)	Bearing	Inclination
Lower Level	1	100	S.40°W.	+80°
	2	100	N.20°E.	+45°
	3	100	E	-60°
	4	100	N.65°E.	+45°
	5	100	N.10°W.	+60°
	6	100	N.50°E.	+60°
	7	100	S.50°W.	+60°
	8	150	N.35°E.	+45°
	9	100	S.35°W.	-60°
	10	100	W	+60°
	11	100	W	+60°
Intermediate Workings	12	100	N.45°E.	+50°
	13	100	N.75°E.	+60°
	14	100	S.75°W.	-60°
	15	100	S	+45°
	16	150	N.45°E.	+45°
Upper Workings	17	100	N.70°W.	+50°
	18	100	N.60°E.	+60°
	19	100	N.60°E.	+60°

Two other exploration possibilities merit consideration. One is to sink on the manganese-stained outcrops northwest of the main shaft in the vicinity of coordinates 10,800 N. and 9,700 E. shown on the surface map accompanying the docket. The other is to mine the ore exposed

in the upper workings in the hope that the ore body has greater dimensions than believed or that a significant structure, such as a feeder fissure, will be revealed that will lead to more ore.

Geologist's Conclusions

The property appears to be a good exploration bet, and it is recommended that the revised exploration program be undertaken. Factors favorable to exploration are:

(1) The mine is young and has not been thoroughly explored.

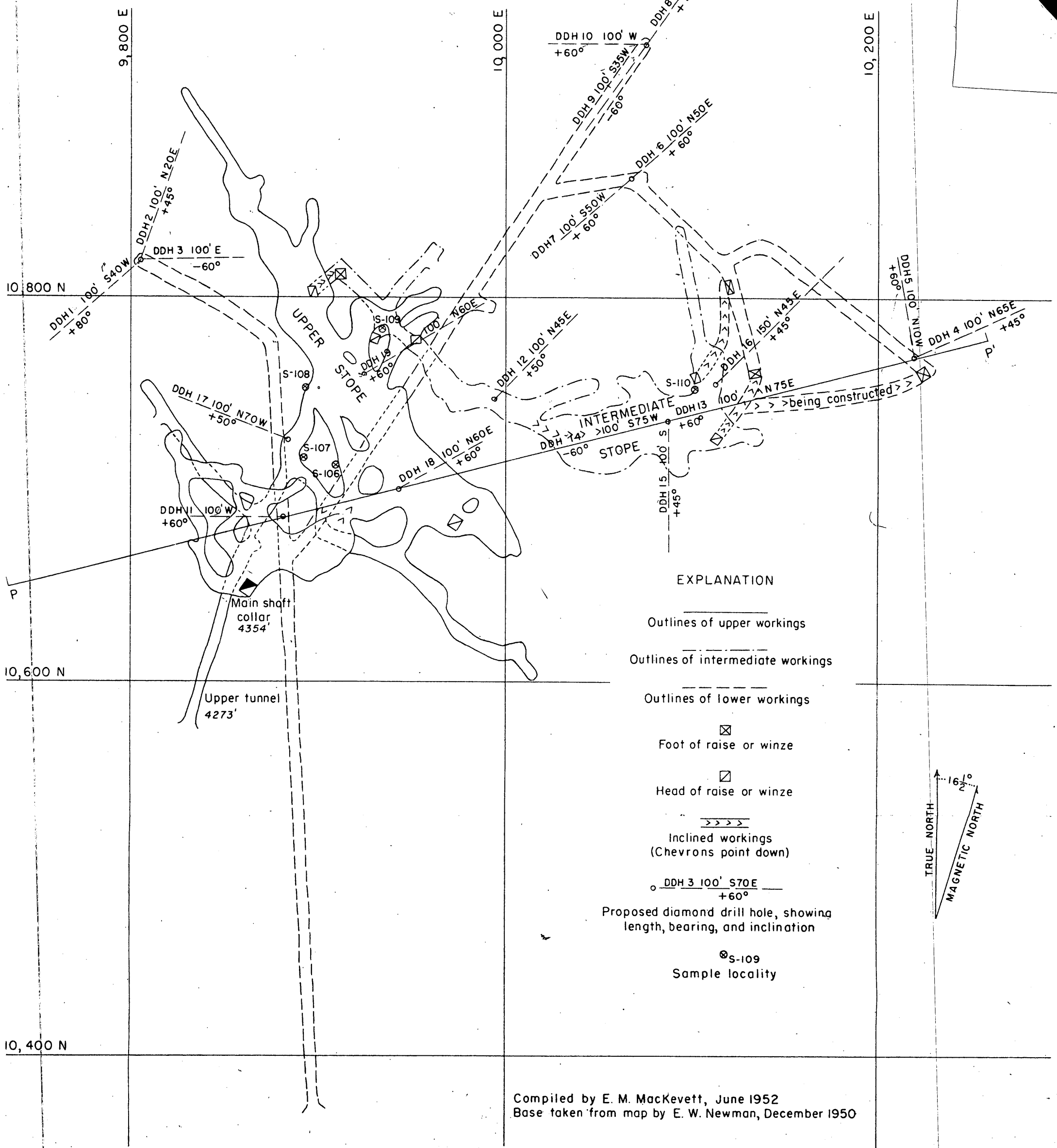
(2) The chances of encountering an ore body similar to the upper ore body are good; the value of such an ore body would compensate many fold for government participation.

(3) There is a possibility of a large reserve being proven and the mine becoming a major producer.

(4) The country rock is amenable to diamond drilling.

(5) The mine operators appear to be competent.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

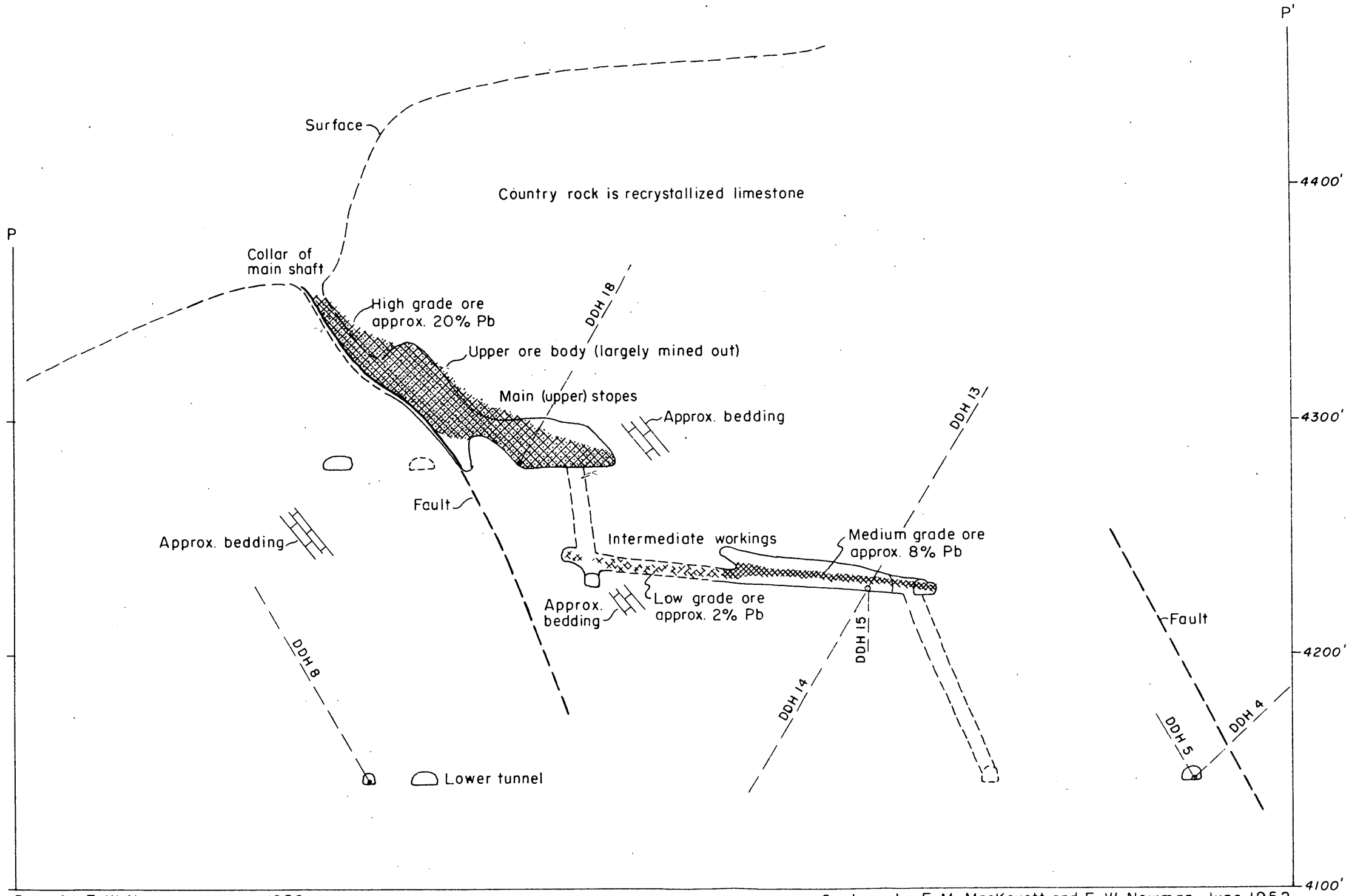


COMPOSITE OF UNDERGROUND WORKINGS SHOWING LOCATIONS OF PROPOSED DIAMOND DRILL HOLES

DEFENSE MINE, INYO COUNTY, CALIFORNIA

Plate 1.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Base by E. W. Newman, January 1952

Geology by E. M. MacKevett and E. W. Newman, June 1952

GEOLOGIC SECTION P-P', DEFENSE MINE, INYO COUNTY, CALIFORNIA

50 0 50 100 FEET

Plate 2.

FILE COPY
SURNAME:

Corbett
Moulds

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

APR 10 1952

Mr. L. D. Foreman
1354 Second Avenue
Salt Lake City, Utah

Re: Docket No. DMEA 2441
Defense Silver Lead Mine

Dear Mr. Foreman:

We acknowledge receipt of your letter of March 28, 1952, and advise you that your application for assistance in exploring your mining claims in Inyo County, California, has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration, and has been referred to Mr. H. C. Miller, Executive Officer, Region III, DMEA Field Team, 1012 Flood Building, 870 Market Street, San Francisco 2, California.

The Region Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

D. E. Moulds (meh)

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

DEMoulds/FXCorbett/meh/hmj
4-8-52
CC to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region IV (2)
Mr. Moulds
Mr. Corbett

J.N.
4-10-52

500 FILE COPY
SURNAME:

Corbett
Moulds

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

APR 10 1952

Mr. H. C. Miller
Executive Officer, Region III
DMEA Field Team
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2441, Lead-zinc
Defense Silver, Lead Mine
L. D. Foreman

Dear Mr. Miller:

We are transmitting, herewith, a "Review of Application for Exploration Assistance" and a copy of a letter referring to the subject application. Our review of the application indicates that information in addition to the usual field examination will be necessary to properly evaluate and draw up a contract. The following points are presented for your consideration:

1. The diamond drilling is not definitely stated as to whether it will be done on contract or by the Company utilizing their own equipment.

2. The list of equipment and facilities furnished by the applicant is not segregated. The necessity for the equipment and the present value of equipment to be furnished for the benefit of the project will have to be determined.

3. The property is indicated to be located mining claims and the book, page and place of recording will be necessary.

4. The project is indefinite. It is stated to consist of 2,000 feet of diamond drilling, plus drifts, raises or crosscuts dependent upon the information secured from diamond drilling. The entire project will require definite presentation as to footage and location, shown on a map, in relation to the present workings.

5. A breakdown of the costs for work and for the project as a whole will be required.

These points are presented as brought to our attention in the "Review", and we will appreciate receipt of your usual field recommendation.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee (FEJ)
Defense Minerals Exploration
Administration

Enclosures

APPROVED:

E. H. Hedges (FEJ)

Member, Bureau of Mines

T. P. Thayer (FEJ)

Member, Geological Survey

FXCorbett/DEMoulds/hmj/meh
4-8-52
CC to: Adm. Reading File
Docket File Copy
Operating Committee
Region III
Mr. Bishop
Mr. McKnight
Mr. Corbett
Mr. Moulds

4-10-52

Defense Minerals Administration

Review of Application for Exploration Assistance

Mr. Harold C. Miller
Executive Officer, Field Team
Region III
1012 Flood Building
870 Market Street
San Francisco, California

Docket No. DMEA-2441

Commodity Lead

Total Amount $20,000 (?)

Govt. Participation 50% (~~10,000~~ ?) $10,000 ?

1. Name and Address of Applicant L. D. Foreman, 1354 Second Avenue, Salt Lake City 3 Utah.

2. Location of Property Defense mine, Modoc mining district, T. 19 S., R. 42 W., Inyo, County, California

3. Mineral or metal Lead-silver Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination X

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes, (owners)
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202? _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

10. Exhibit A. (question 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Apparently

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? **NO**

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? **No** If so, attach a draft.

e) Are the cost estimates reasonable?_____

f) Should more information be requested from applicant?_____

g) Is a field examination necessary to complete Exhibit A? **Yes**

11. Exhibit B (question 23-d)*

a) Is it applicable? **No**

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed?_____

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? **Yes**

b) Sufficient data? **No** If so, attach a draft.

c) Are rents and charges reasonable? **Not stated**

d) Is a field check needed?_____

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data?_____

b) Is the schedule adequate for the work proposed?_____

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed? **Yes**

14. Exhibit E (question 23-c)*

a) Is it applicable? **No**

b) Sufficient data?

c) Reasonable?

d) Field check needed?

15. In your judgment, can the proposed work be done in the proposed time?

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? **The application lacks detailed information on the exploration program, and hence cannot be evaluated. In addition to determining the kind, amount and location of the proposed exploration, the field team should secure rental rate data from the applicant.**

Reviewed by: Erwin J. Lyons
Erwin. J. Lyons, GS
O M Bishop
O. M. Bishop, BM-3-31-52

Date 4-3-52

L. D. FOREMAN

R. L. FOREMAN

DEFENSE MINE

P. O. BOX 175
DARWIN, CALIFORNIA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

March 28, 1952.

U. S. Department of the Interior,
Defense Minerals Exploration Administration,
Washington, 25, D. C.

Subject: DMEA 2441
Re: Exploartion Loan
Defense Silver Lead Mine
March 25th, 1952.

Dear Mr. Adams:-

I wish to thank you for your acknowdgement of the 25th in connection with Loan Application for the above mentioned mine.

In response to the last paragraph of your letter beg to advise that it is estimated that the total cost of the project we contemplate will be $20000.00 to $25000.00. Should it prove necessary to spend above the $20000.00 we are prepared to take care of the excess.

Very truly yours,

L D Foreman

1354 Second Ave.
Salt Lake City, 3 Utah.

EXPLORATION

Subject: DMEA-2441
Re: Exploration Loan
Defense Silver Lead Mine
March 25, 1952

Mr. L. D. Foreman
1354 Second Ave.
Salt Lake City 3, Utah

My dear Mr. Foreman:

This will acknowledge receipt of your application dated March 19, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2441 and referred to the Base Metals Division.

Kindly refer to DMEA-2441 in any future correspondence relating to your application.

Kindly submit to this office the total cost of your project.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Acting Administrative Officer

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

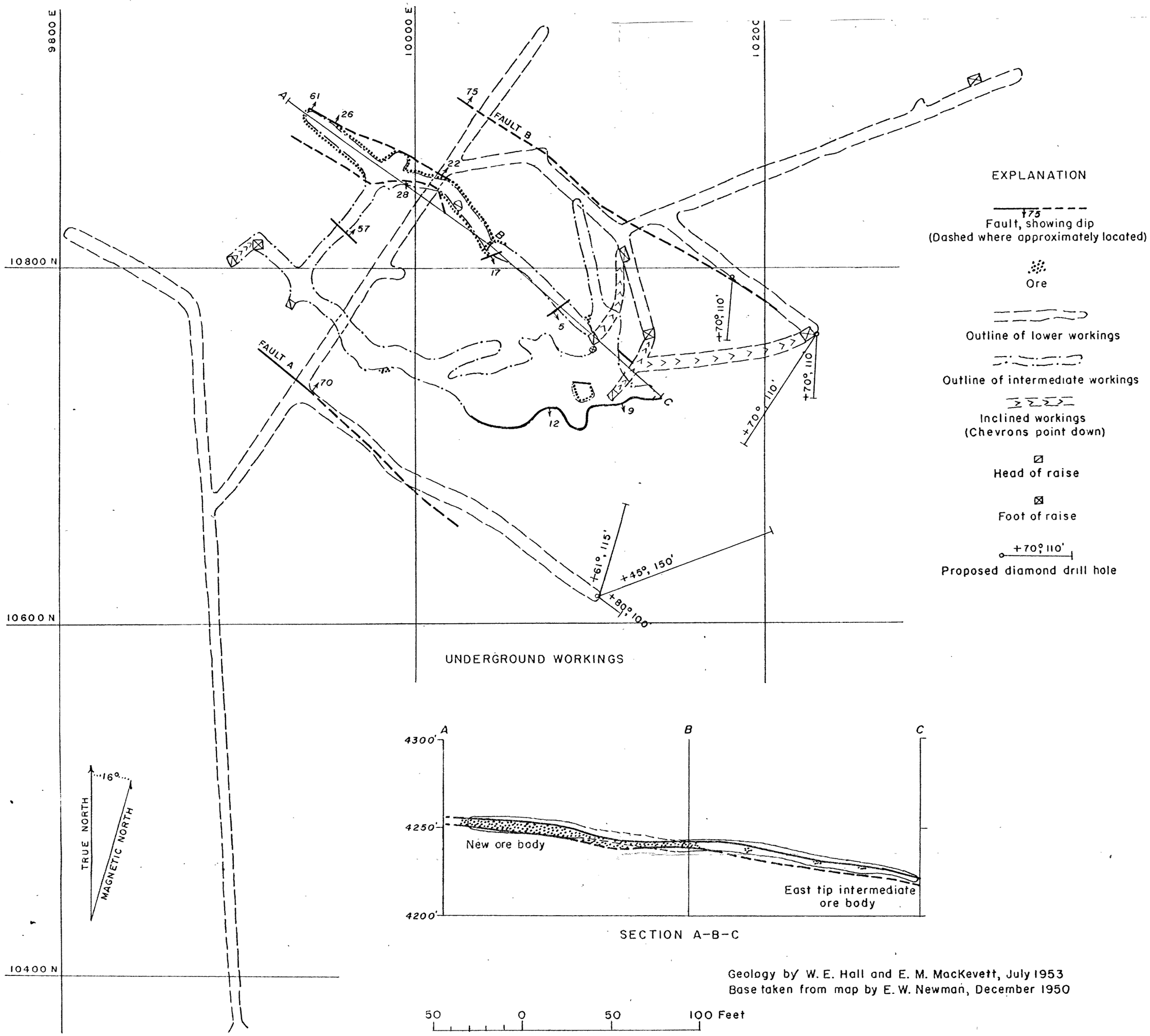


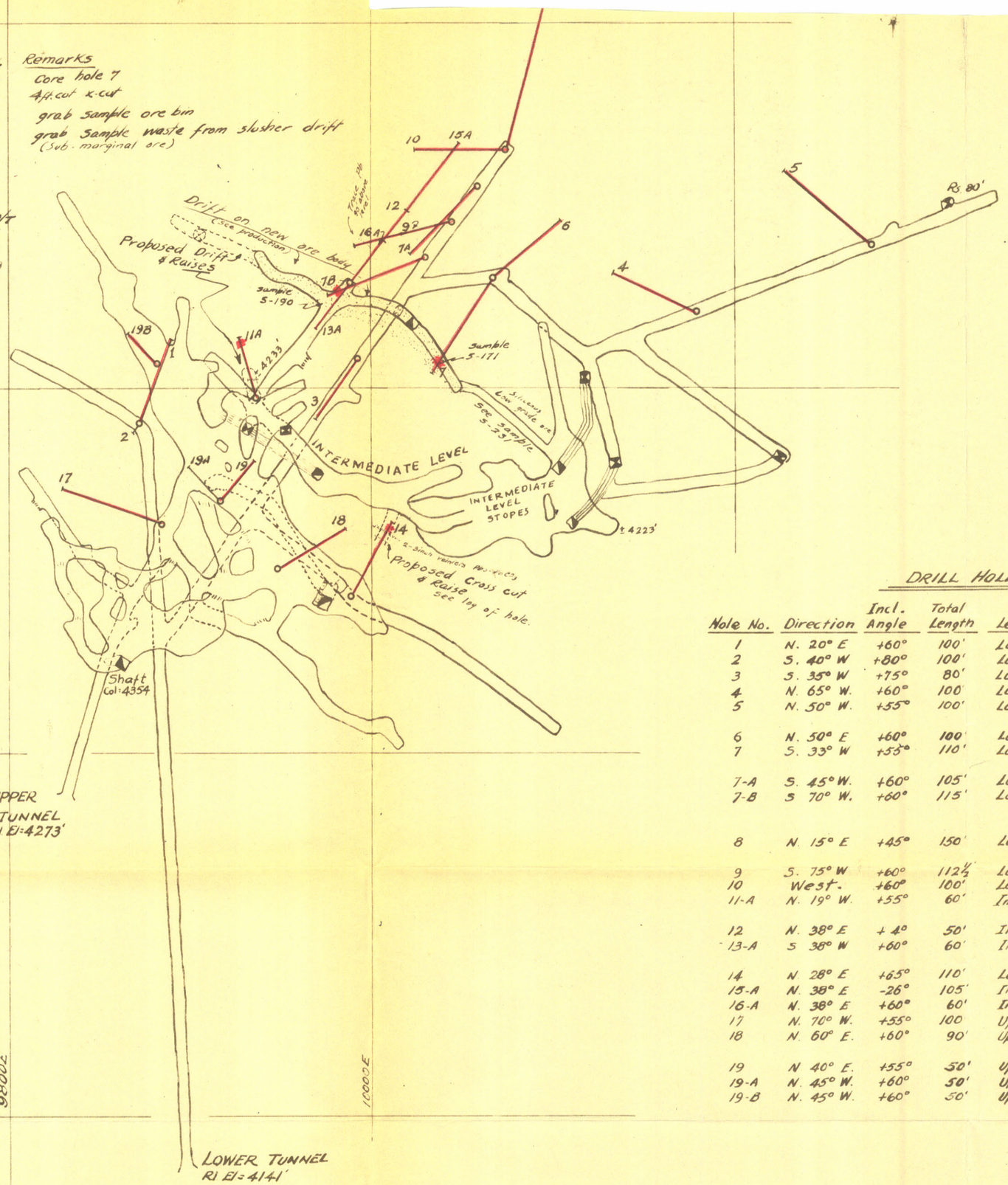
PLATE II. INTERMEDIATE AND LOWER LEVELS, DEFENSE MINE, INYO COUNTY, CALIFORNIA

Samples

No	% Zn	% Pb	Oz Au/T	Oz Ag/T	Remarks
5-171	0.4	59.2	0.01	12.0	Core hole 7
5-190	0.6	34.7	0.03	16.7	4 ft. cut x-cut
5-230	1.0	20.5	0.01	6.6	grab sample ore bin
5-231	0.5	7.2	0.015	14.3	grab sample waste from slusher drift (Sub-marginal ore)

Production

Lot No	Tons	% Pb	Oz Ag/T
1	51.09	17.3	14.75
2	47.64	26.75	18.68
3	55.05	25.57	20.48
4	49.54	20.3	19.8
6	97.75		
8	103.33		
10	96.36		
Total 8-8-53	500.76		



DRILL HOLE DATA

Hole No.	Direction	Incl. Angle	Total Length	Level	Remarks
1	N. 20° E	+60°	100'	Lower	No ore.
2	S. 40° W	+80°	100'	Lower	No ore.
3	S. 35° W	+75°	80'	Lower	No ore.
4	N. 65° W.	+60°	100	Lower	No ore.
5	N. 50° W.	+55°	100'	Lower	No ore.
6	N. 50° E	+60°	100	Lower	No ore.
7	S. 33° W	+55°	110'	Lower	Ore 94' to 110' 2' Assay 52% Pb 23 oz. Ag.
7-A	S. 45° W.	+60°	105'	Lower	No ore.
7-B	S 70° W.	+60°	115'	Lower	Ore 97' to 108' (no core assay 3 cars shipped averaged 23% Pb and 20 oz. Ag.
8	N. 15° E	+45°	150'	Lower	No ore.
9	S. 75° W	+60°	112½'	Lower	No ore.
10	West.	+60°	100'	Lower	No ore.
11-A	N. 19° W.	+55°	60'	Intermediate	Ore 13' to 15' and 25' to 30' No assay
12	N. 38° E	+ 4°	50'	Intermediate	No ore.
13-A	S 38° W	+60°	60'	Intermediate	No ore.
14	N 28° E	+65°	110'	Lower	Ore 98' to 100' - No assay.
15-A	N. 38° E	-26°	105'	Intermediate	No ore.
16-A	N. 38° E	+60°	60'	Intermediate	No ore.
17	N. 70° W.	+55°	100	Upper	No ore.
18	N. 60° E.	+60°	90'	Upper	No ore.
19	N 40° E.	+55°	50'	Upper	No ore.
19-A	N. 45° W.	+60°	50'	Upper	No ore.
19-B	N. 45° W.	+60°	50'	Upper	No ore.

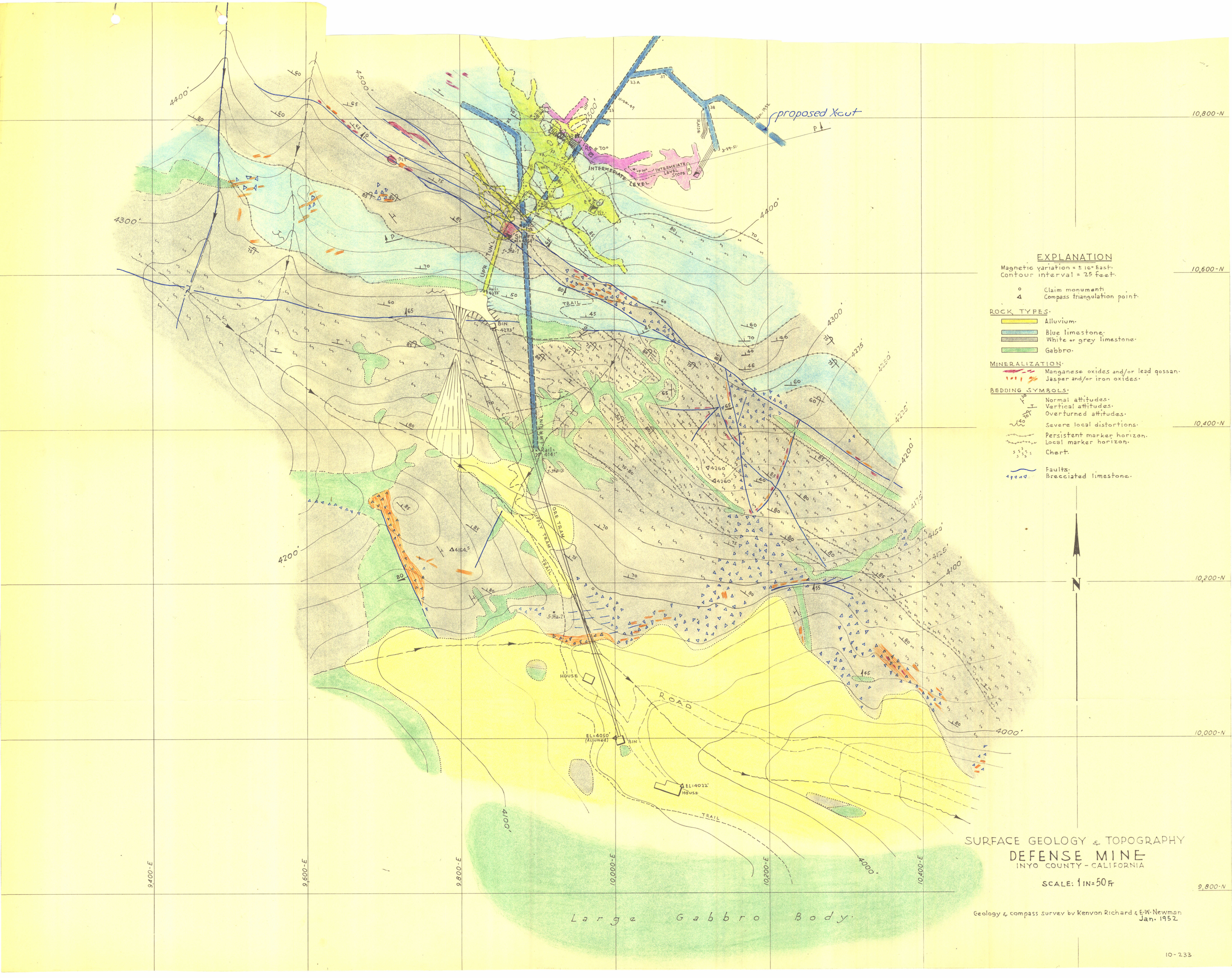
COMPOSITE PLAN

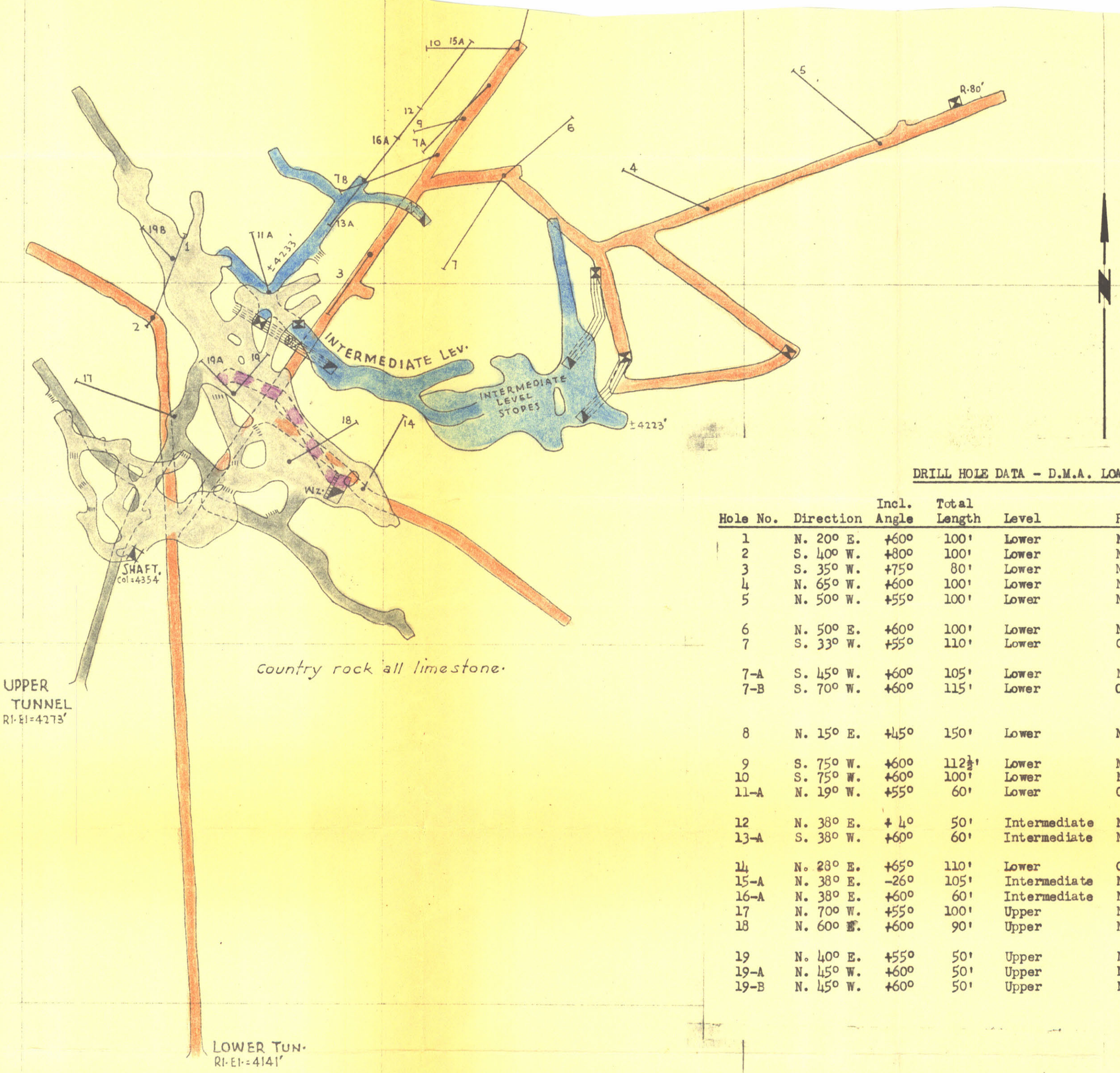
Note:
From Company map.

June 1953

DEFENSE MINE, INYO COUNTY CALIFORNIA — DMEA 2441 (Lead zinc), Contract Idm-E424

Figure 1


proposed Xcut
INTERMEDIATE LEVEL
INTERMEDIATE LEVEL STOPE
RAISE
SHAFT
UPR TUNL
LWR TUNL
TRAIL
BIN
ORE TRAIL
SUPPLY TRAIL
HOUSE
ROAD
EL=4050' (Assumed)
EL=4022'
Large Gabbro Body
EXPLANATION
Magnetic variation = ± 16° East.
Contour interval = 25 feet.
Claim monument.
Compass triangulation point.
ROCK TYPES.
Alluvium.
Blue limestone.
White or grey limestone.
Gabbro.
MINERALIZATION.
Manganese oxides and/or lead gossan.
Jasper and/or iron oxides.
BEDDING SYMBOLS.
Normal attitudes.
Vertical attitudes.
Overturned attitudes.
Severe local distortions.
Persistent marker horizon.
Local marker horizon.
Chert.
Faults.
Brecciated limestone.
N
SURFACE GEOLOGY & TOPOGRAPHY
DEFENSE MINE
INYO COUNTY - CALIFORNIA
SCALE: 1 IN = 50 FT
Geology & compass survey by Kenyon Richard & E.W. Newman
Jan. 1952
10-233



DRILL HOLE DATA - D.M.A. LOAN

Hole No.	Direction	Incl. Angle	Total Length	Level	Remarks
1	N. 20° E.	+60°	100'	Lower	No ore.
2	S. 40° W.	+80°	100'	Lower	No ore.
3	S. 35° W.	+75°	80'	Lower	No ore.
4	N. 65° W.	+60°	100'	Lower	No ore.
5	N. 50° W.	+55°	100'	Lower	No ore.
6	N. 50° E.	+60°	100'	Lower	No ore.
7	S. 33° W.	+55°	110'	Lower	Ore 94' to 110' 2' Assay 52% Pb 23 oz. Ag.
7-A	S. 45° W.	+60°	105'	Lower	No ore.
7-B	S. 70° W.	+60°	115'	Lower	Ore 97' to 108' (no core assay) 3 cars shipped averaged 23% Pb and 20 oz. Ag.
8	N. 15° E.	+45°	150'	Lower	No ore.
9	S. 75° W.	+60°	112½'	Lower	No ore.
10	S. 75° W.	+60°	100'	Lower	No ore.
11-A	N. 19° W.	+55°	60'	Lower	Ore 13' to 15' and 25' to 30' No assay.
12	N. 38° E.	+ 4°	50'	Intermediate	No ore.
13-A	S. 38° W.	+60°	60'	Intermediate	No ore.
14	N. 28° E.	+65°	110'	Lower	Ore 98' to 100' - No assay.
15-A	N. 38° E.	-26°	105'	Intermediate	No ore.
16-A	N. 38° E.	+60°	60'	Intermediate	No ore.
17	N. 70° W.	+55°	100'	Upper	No ore.
18	N. 60° E.	+60°	90'	Upper	No ore.
19	N. 40° E.	+55°	50'	Upper	No ore.
19-A	N. 45° W.	+60°	50'	Upper	No ore.
19-B	N. 45° W.	+60°	50'	Upper	No ore.

DRILLING PROJECT - D.M.A. LOAN

DEFENSE MINE

INYO CO - CALIF

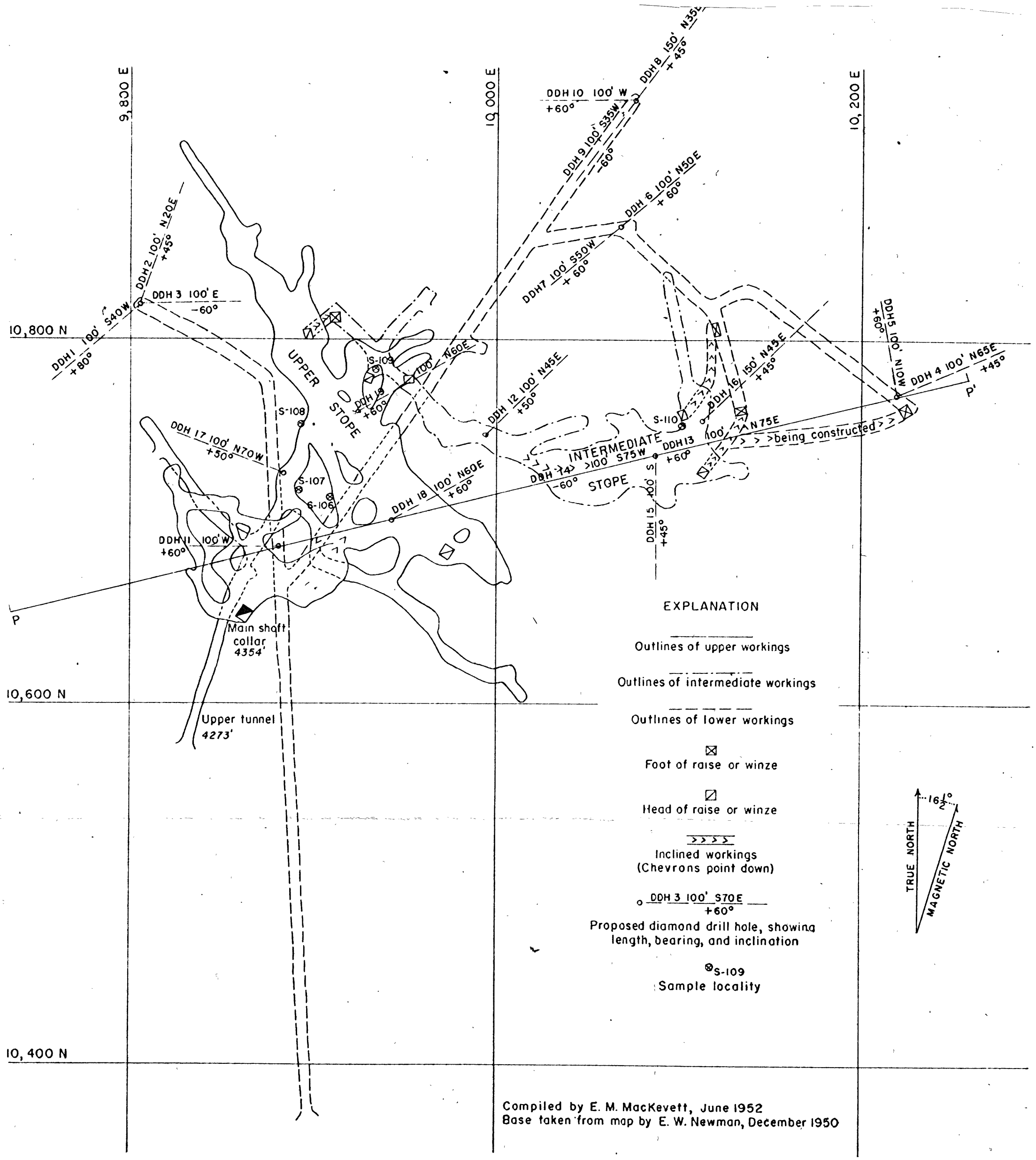
SCALE: 1 IN = 50 FT.

Accompanying final report by L. D. Foreman - May 1953.

10-720A

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
2441



COMPOSITE OF UNDERGROUND WORKINGS SHOWING LOCATIONS OF PROPOSED DIAMOND DRILL HOLES
DEFENSE MINE, INYO COUNTY, CALIFORNIA

Plate I.