DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4628

Application (Denied ✓
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓ Leases and assignments of leases
✓ Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
On-site Exam Report(s) (Tab) ✓
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order)
Interim Summary Reports by W. O. Engineers

Right Side

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

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

Please Return to Box 688, Cedar City, Utah

AGREEMENT

(Lease and Agreement with provisions for purchase)

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 7 1957

DATE	INITIALS	CODE

This agreement made and entered into this 16th day of October, 1956 by and between Wilford Fife, Otto Fife, Carl Fife and Wesley McEown, of Cedar City, Utah hereinafter called the "Owners" and the Ky-Tenn Exploration Company hereinafter called the "Operator", Witnesseth:

In consideration of the performance of the mutual covenants herein contained, the parties agree as follows:

The operator hereby agrees to explore and develop valuable minerals and materials for the expressed purpose of mining same on the following described mining claims:

New Arrowhead Mining claims No. 1, 2, 3, 4, 5 and 6

The same being formerly known as the New Arrowhead Mining Company property.

The operator agrees to conduct exploration and development activities in a miner-like manner. The operator shall have the total expense of development and mining operations and agrees to keep and miantain such workmen's insurance as is required by the laws of the State of Utah.

The operator agrees to perform a minimum of ten eight hour shifts per month, except during the winter months of January, February and March, when weather conditions may hamper operations. If such be the case, it is agreed that such loss of time may be made up during the following months.

As payment for the exploration, development and mining of ores and materials therefrom, as herein set forth, and as a division of the proceeds received from the mining operations; it is agreed

that owners are to receive 10% of the net Smelter or Mill Returns less transportation on ores selling for $30.00 per ton or less and 15% of the net Smelter or Mill returns less transportation on ores selling for more than $30.00 per ton and the operator is to receive and retain all other returns from the ores and materials.

The operator agrees to keep accurate records of all ore shipped and to account for and pay to the owners their share of the proceeds, as shipment is made, whether monthly, semi-annually or annually.

The operator agrees to perform and file the annual proof of labor on the six claims herein described and the operator shall assume all responsibilities and liabilities of operations hereafter incurred.

The owners agree that after receipt of royalties totaling $100,000.00 from this operation, the properties herein described shall become the property of the operator with full title and deed being given to the operator by the owners. The owners having no further claim or royalty rights thereafter.

This agreement shall be binding upon and extend to the heirs, executors, administrators and assigns of the respective parties hereto.

Witness the hands of the parties the day and year first above written.

Wesley McEown

Carl Fife

Otto J. Fife

W R Fife

OWNERS

Signed in the presence of

Subscribed and sworn to before me this 20th. day of October, 1956.

Maeser Dalley, Notary Public, Cedar City, Utah.
My Commission expires May 8, 1960.

KY-TENN EXPLORATION COMPANY

By Blaine W. Sykes
Operator

Be it further agreed by the Operator that transportation charges on ores and meterials from the mine to the Railroad shall not exceed $2.50 per ton. And that other public conveyances shall be contracted at the usual published rates.

Signed Ky-Tenn Exploration Co.
By Blanc W. Sykes

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

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 7 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

February 4, 1957

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid (lead-zinc) Ky-Tenn Exploration Company (New Arrowhead claims Nos. 1-6 inclusive) Iron County, Utah

Enclosed are the original and two copies of the subject application in the amount of $68,500.00.

Only one copy each of the lease agreement and list of settlements for lots of ore nos. 1-49 inclusive was furnished and they are attached to the original MF-103 form.

We have written the applicant for the maps he mentions as included with the application and will forward them as soon as received.

One copy of the incomplete application is being retained in our files.

for W. M. Traver

Enclosures

MF-103
(Revised April 1952)

DMEA
DEPARTMENT OF THE INTERIOR
FEB 4 1957
REGION III
DENVER, COLORADO

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

RECEIVED FEB 2 1957 D.M.E.A.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 4628
Metal or Mineral Lead-Zinc
Date Received 2-7-57
Estimated Cost $68,500.
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: KY-TENN. EXPLORATION CEDAR CITY, UTAH (Partnership)
Blane W. Sykes box 688 Cedar City, Utah
Wesley McEown 25 N. 800 West Cedar City, Utah
Carl Fife N. 800 West Cedar City, Utah

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
New Arrowhead Mining Claims Nos. 1, 2, 3, 4, 5, and 6
The same being formerly known as the "New Arrowhead" Mining Company Property.
Located in Iron County, State of Utah, T. SHIP 31 S., R. 16 W., SEC. 12

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Purchaser Under Contract (by Lease)

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it ✓

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore LEAD + ZINC

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 10 days and be completed within 15 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

☐ Money ☑ Use of equipment owned by you ☑ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated Jan. 30, 1957

Shane W. Sykes
(Applicant)

By

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—66551-1

Physical description 4 (a) Included in this application is ancopy of maps and and production figures showing the property has been explored and mined at least three times prior to the present time.

(b) Attached is a copy of production by the New Arrowhead Mining Co.

(c) TheBbureau of Mines, have made study of the property during World War II. The past mining records show a bedded formation of Lead, Zink, of commercial value, and tracies of Silver and Copper. The present exploration is baised on the beleif that the main body of commercial Ore was not found during the earlier workings. And it is the intentions of the present operation to open the formations approximately one hundred and fifty feet westward from the former diggings.

(d) The property lies south and west of Lund, Utah and the Union Pacific R.R. approximately 30 miles. The road for the first 20miles is a county road and the last 10 miles of road was constructed by the U.S. Bureau of Mines, but maintained by the County at this time.

(e) The availability of manpower, materials, supplies, equipment, water, and power are indeed adquate and plentiful.

The Exploration P roject 5 (a) Lead and Zink

(b) The proposed work at this time consists of driving two tunnels and one shaft one hundred and fifty feet to the west of the earlier mines. A faulted condition was found to exist there between, giving rise to the hopes that the ores would take up again in better qualities and quantities on the opposite side of that fault. This opinion is held by the former owners of the property, who in part are still interested in the development of the claims.

(d) Blane W. Sykes (Applicant) has had two years of prospecting and mining experience, one year in the area of the property now leased.
Wesley McEown (Partner) has had thirty years of mining experience in Utah and was a partner in the New Arrowhead Mining Co. operations on this property.
Carl Fife (partner) has had approximately thirty years of mining experience and likewise was a partner in the New Arrowhead co.

Estimate of Costs: (Unit Plan)

Units per contract- (including labor and supplies & equip.)		
One thousand feet of Tunnel at $40.00 per ft.—	$40,000	
Two hundred feet of shaft at $60.00 per ft.——	12,000	
Two hundred feet of raise at $60.00 " " ——	12,000-?	
		$64,000.00
Buildings and improvements-		
Repairs to existings buildings ——————	$ 1,000	
Bins , shops, and hoists house ——————	3,000	
Buldozing of grounds and roads ——————	500	
		4,500.00
		$68,500.00

Since the Ky-Tenn Co. ownes equipment in the form of hoists, Compressors, ore cars, tract, and other necessary tools for mining and exploration it is the company's wish that it may be allowed to furnish the equipment needed, and to do the most of the labor— for it's share of the costs.

R.F.C. Loan was made on this property during W. war II.

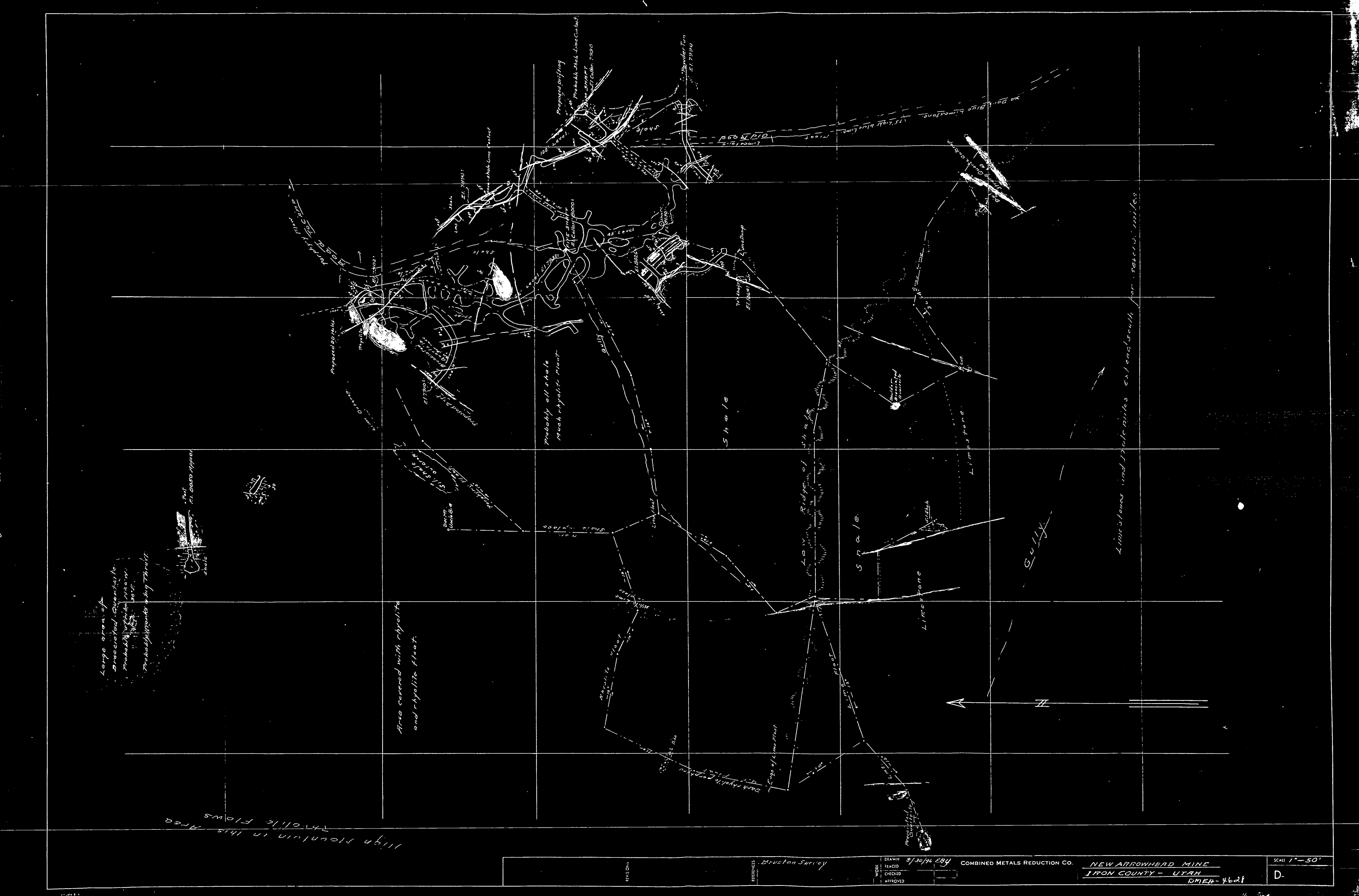
To- International Smeltering & Refining Co.
Kearns Bldg. Salt Lake City -

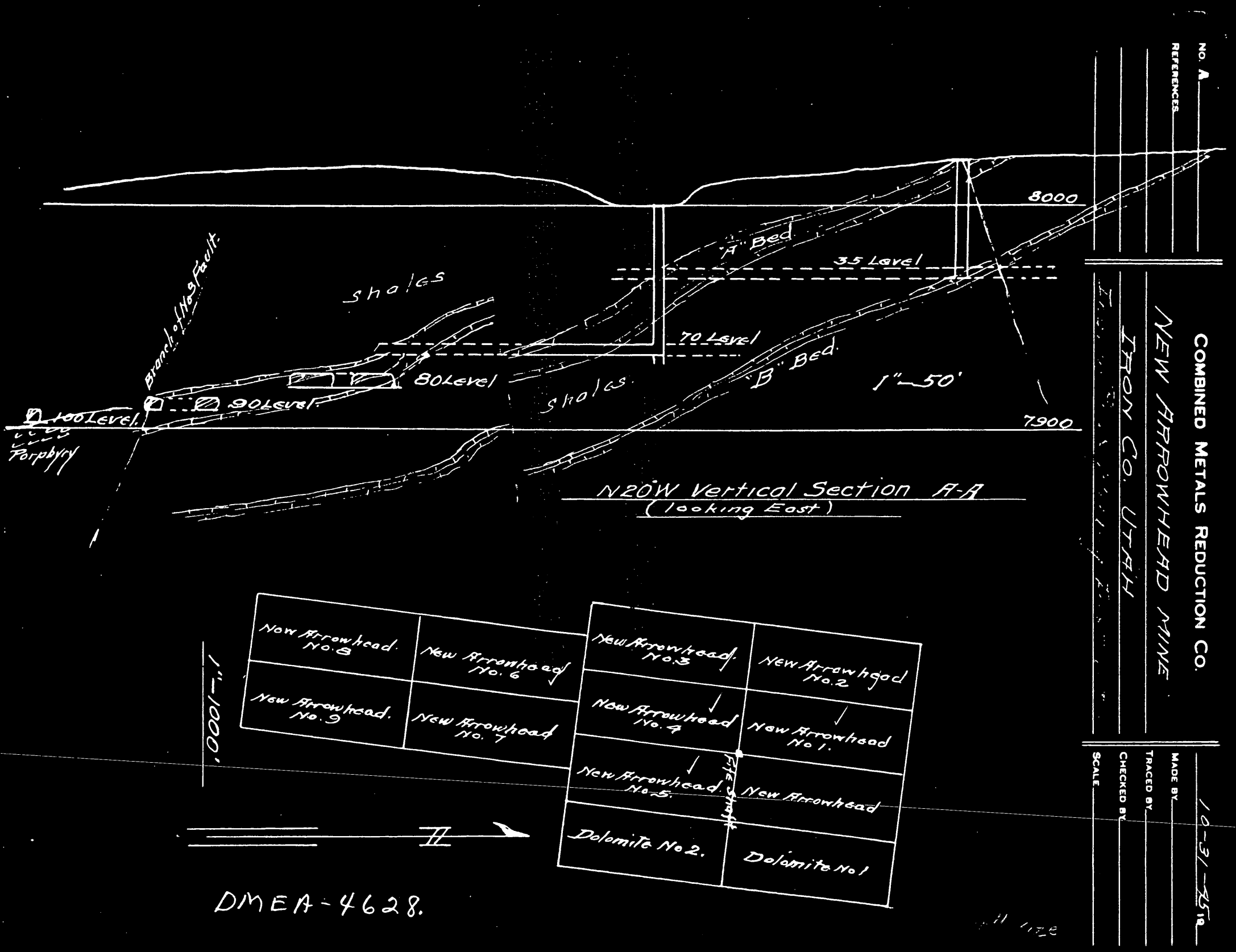
NEW ARROWHEAD MINING COMPANY

Date of Settlement	Mine Lot Number	Dry Weight Pounds	Settlement % Lead	Settlement % Zinc
6/10/43	1	103,771	4.9	27.2
7/16/43	2	106,496	8.3	20.5
9/20/43	3	98,395	4.8	27.0
9/22/43	4	96,927	4.9	23.3
10/5/43	5	91,280	4.3	23.2
12/9/43	6	106,396	11.4	25.0
12/9/43	7	104,165	10.4	22.6
12/22/43	8	60,618	1.8	14.0
12/31/43	9	57,283	.6	16.3
1/27/44	10	120,201	10.4	23.4
1/27/44	11	115,779	9.5	21.5
2/14/44	12	121,927	11.5	22.5
3/ 2/44	13	105,271	11.2	19.9
5/16/44	14	114,488	11.1	19.1
5/23/44	15	107,808	10.6	18.7
7/ 6/44	16	108,417	10.0	13.9
7/31/44	17	90,665	6.0	17.3
8/ 4/44	18	77,682	3.4	15.8
9/ 7/44	19	93,432	2.7	14.8
9/14/44	20	93,944	3.0	17.1
10/17/44	21	87,207	1.7	19.8
10/ 2/44	22	75,612	2.1	25.7
12/14/44	23	72,092	1.1	20.0
12/26/44	25	69,519	2.1	12.4
1/ 8/45	26	64,604	2.1	11.3
1/23/45	27	103,145	5.3	20.6
2/ 7/45	28	84,443	1.3	34.6
2/20/45	29	79,041	.3	25.6
3/15/45	30	65,877	2.0	17.3
3/13/45	31	66,122	1.8	20.2
5/ 7/45	32	65,588	.4	19.7
5/11/45	33	66,427	.7	19.7
5/17/45	34	81,115	5.4	16.1
5/25/45	35	50,659	-	19.8
6/ 6/45	36	58,436	1.7	16.0
6/26/45	37	80,272	-	14.7
7/ 3/45	38	80,514	-	9.6
7/ 3/45	39	62,878	-	12.6
7/ 6/45	40	58,956	-	8.7
9/ 1/45	41	74,649	2.6	14.3
9/19/45	42	66,191	1.4	24.5
10/1/45	43	55,069	1.4	20.0
1/12/46	44	79,190	7.4	13.2
1/24/46	45	89,887	4.5	21.3
2/23/46	46	89,488	6.4	14.7
3/ 6/46	47	63,310	1.4	8.9
5/ 2/46	48	108,640	8.1	6.8
6/ 7/46	49	86,742	6.3	10.5

Note:- Mine Lot #24 dumped as "Waste"

Note! 1941 to 1943 shipments made to "American Smeltering and Refining Co. Salt Lake City" "This showed higher Lead percent."


Proposed Drifting
Probable Shale Line Contact
Shaft
Collar 7920
Bender Tun
El. 7920
Shale
Probably all shale
Much rhyolite float
Fox Ridge of
Shale
Limestone
Gully
Limestone and Dolomites on landscape for several miles
Area covered with rhyolite
and rhyolite float
Large area of
Brecciated Quartzite
Probable Quartzite
Probable Quartzite by Thrust
High Mountain in this area
Rhyolite Flows
Drawn 8/30/96 CBY
Traced
Checked
Approved
Work
Revisions
Bruton Survey
Combined Metals Reduction Co.
NEW ARROWHEAD MINE
IRON COUNTY - UTAH
DMEA-4628
Scale 1"=50'
D-


COMBINED METALS REDUCTION CO.
NEW ARROWHEAD MINE
IRON CO. UTAH
NO. A
REFERENCES
MADE BY
TRACED BY
CHECKED BY
SCALE
10-31-25
8000
7900
"A" Bed
"B" Bed
35 Level
70 Level
80 Level
90 Level
100 Level
shales
shales
branch of No 3 Fault
Porphyry
1"=50'
N20W Vertical Section A-A
(looking East)
New Arrowhead No. 8
New Arrowhead No. 6
New Arrowhead No. 9
New Arrowhead No. 7
New Arrowhead No. 3
New Arrowhead No. 2
New Arrowhead No. 4
New Arrowhead No. 1
New Arrowhead No. 5
New Arrowhead
Dolomite No. 2
Dolomite No. 1
File Shaft
1"=1000'
DMEA-4628.

NO. A

REFERENCES

COMBINED METALS REDUCTION CO.

NEW ARROWHEAD MINE

IRON CO. UTAH

Indian Peak Mining District

10-31-45 19

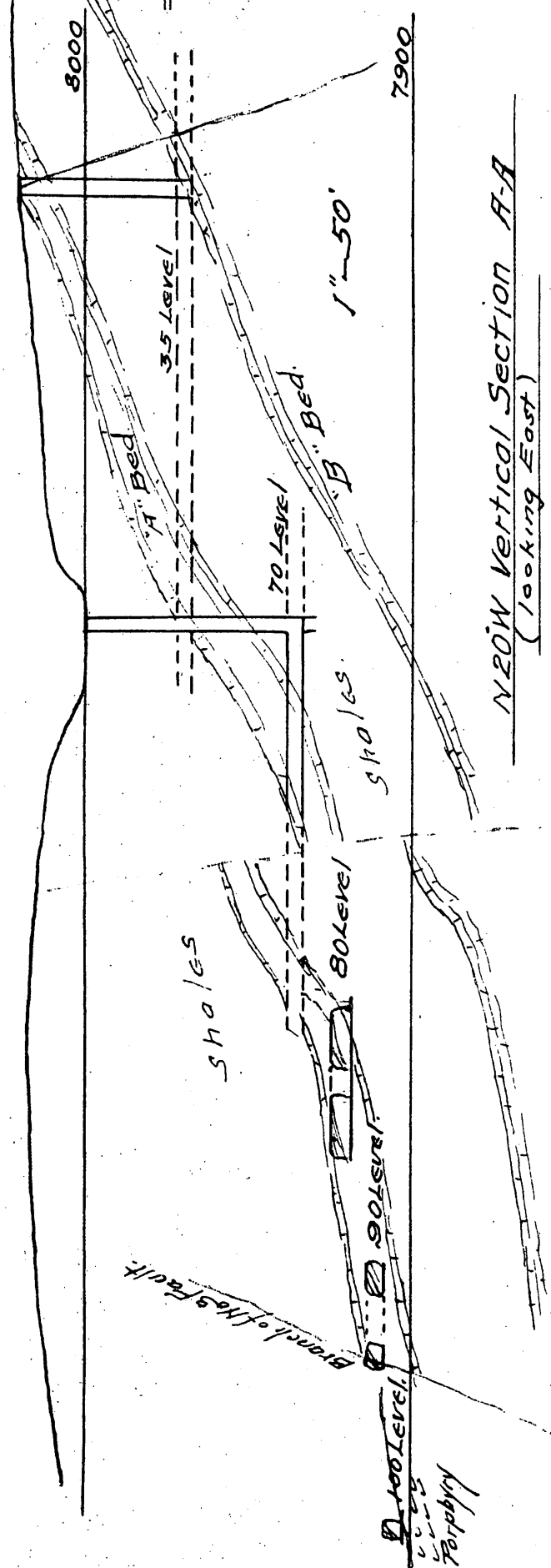
MADE BY

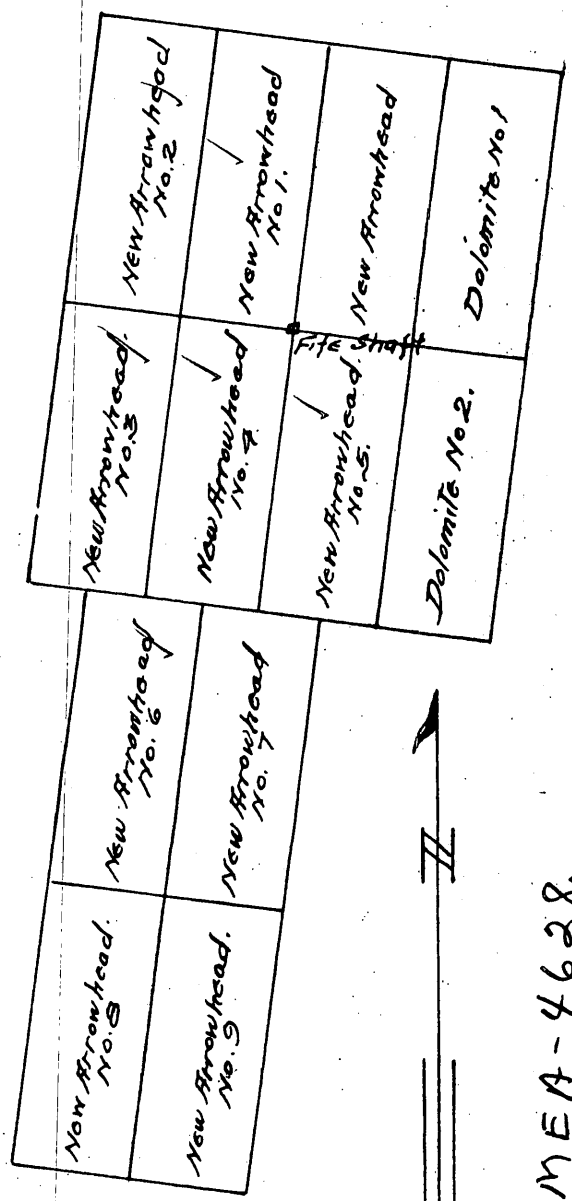
TRACED BY

CHECKED BY

SCALE

Full size





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DATE	INITIALS	CODE

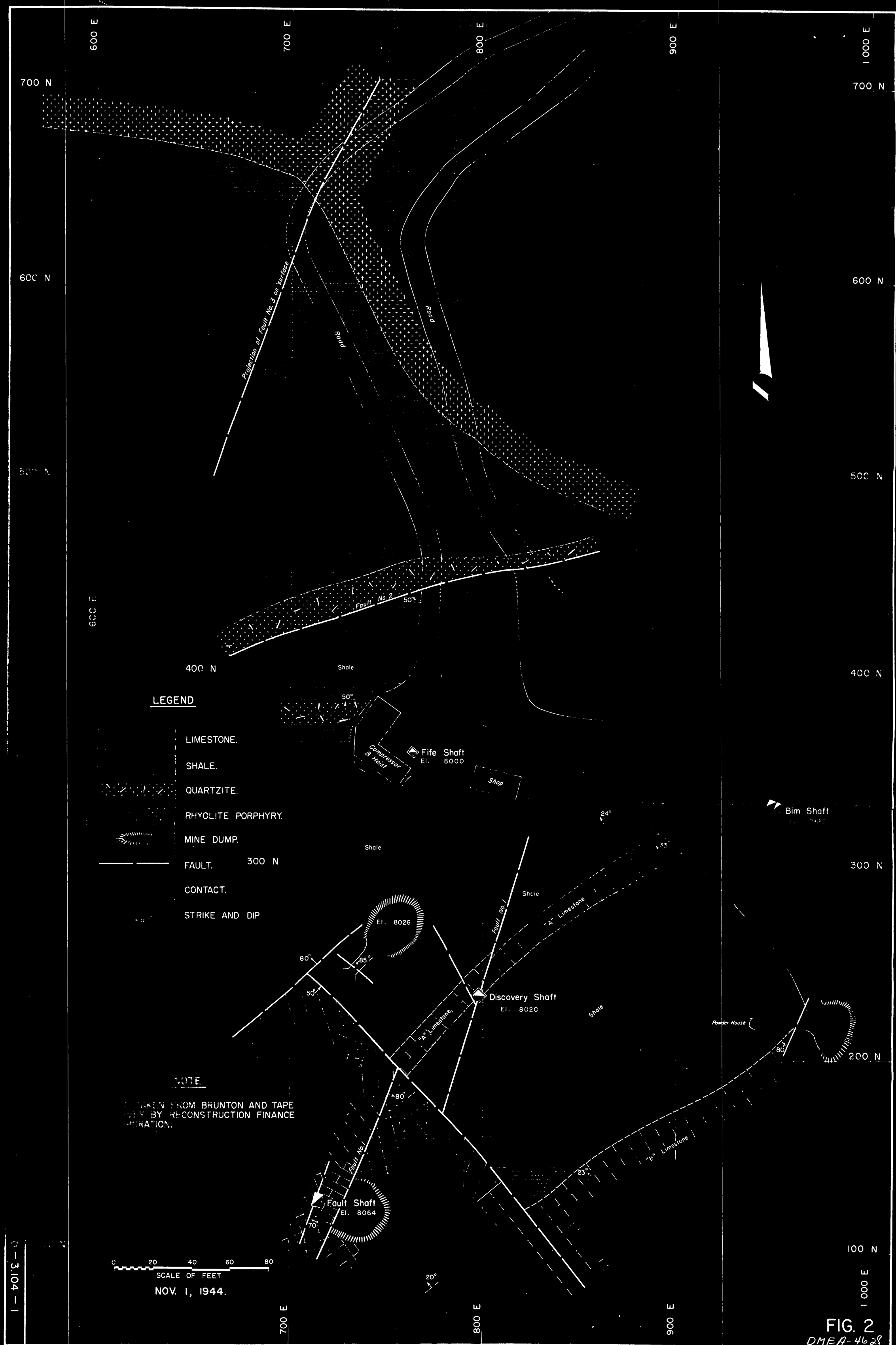
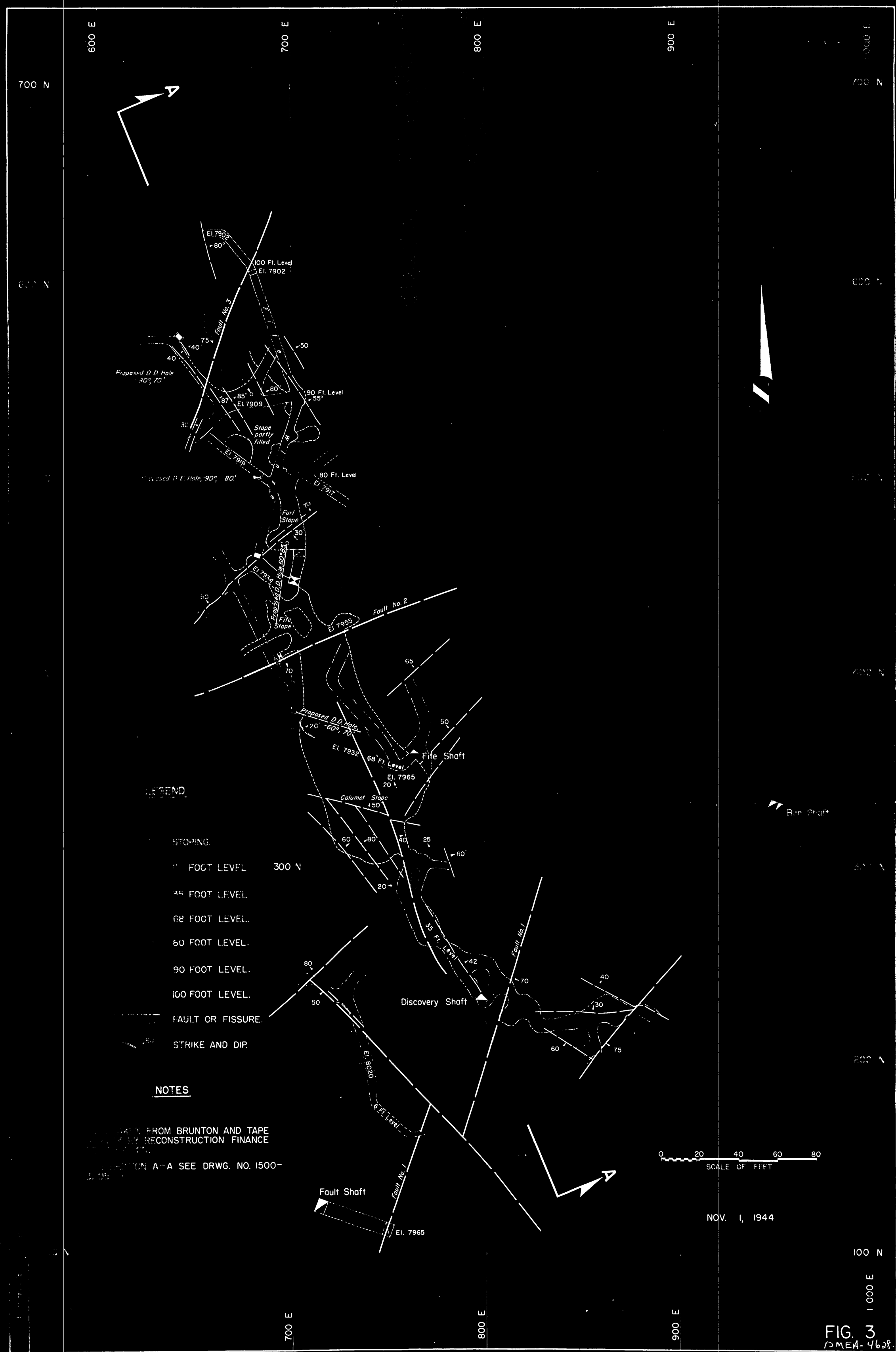
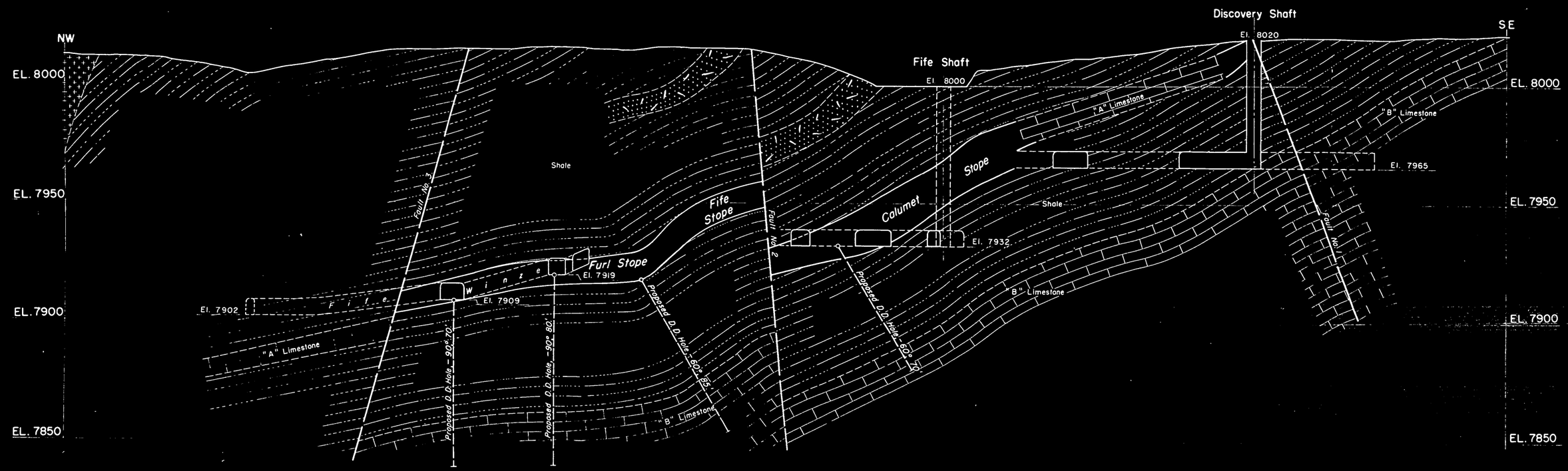


FIG. 2
DMEA-4628

Surface Map of New Arrowhead Mine, Iron County, Utah.



Plan of Underground Workings of New Arrowhead Mine, Iron County, Utah.



Section A — A

LEGEND

- LIMESTONE.
- SHALE.
- QUARTZITE.
- RHYOLITE PORPHYRY.
- CONTACT.

0 20 40 60 80
SCALE OF FEET

NOV. 1, 1944.

NOTES

1. DATA TAKEN FROM BRUNTON AND TAPE SURVEY BY RECONSTRUCTION FINANCE CORPORATION.
2. FOR LOCATION OF SECTION A-A SEE PLAN OF UNDERGROUND WORKINGS, DRWG. NO. 1500 — 3.105 — 1.

FIG. 4
DMEA-4628

1500 — 3.106 — 1

½ SIZE

Section of New Arrowhead Mine, Iron County, Utah.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/19	Klugesheid	500
		100

November 19, 1957

Memorandum

To: The Administrator

From: Director, Division of Base Metals

Subject: Denial of Application, Docket No. DMEA-4628, Ky-Tenn Exploration Company, New Arrowhead Claims, Iron County, Utah, Lead-Zinc.

The cited application, dated January 30, 1957, was received by this office on February 11, 1957.

The Applicant proposed to explore the property by means of 1,000 feet of drifting, 200 feet of shaft sinking and 200 feet of raising. Although maps were alleged to accompany the application none could be found by the Field Team, and on February 4, 1957, Mr. J. W. Townsend, DMEA Field Team, Region III, informed Mr. Sykes (one of the partners) that no maps had been sent. After considerable correspondence with the Applicant, the maps were finally received on June 10, 1957.

The property was examined by Walter Bank, Bureau of Mines, and Fred R. Shawe, Geological Survey, on August 21, 1957.

This property has been previously worked on several occasions and a loan of $15,000.00 was obtained from the Reconstruction Finance Corporation in February 1943. The mine was in production from May 1943 until the fall of 1945 when the "C" bonus for zinc terminated. The operators then reached an agreement with Combined Metals Reduction Company, which formally took over the mine on June 30, 1946. Some exploratory work was done with no resultant production. In 1949 the Bureau of Mines prepared a report of the area. In 1956 the Applicant secured a lease on the property. No work of importance has been done of late. The application states that the Applicant's share of the costs would be supplied by furnishing the equipment and the partners' own labor.

Production to date has come from a single limestone bed which is faulted and is apparently not widely mineralized. All ore in the producing sections has been removed and the workings are now inaccessible.

The Applicant wishes to search for and explore an assumed faulted extension of the bedded lead-zinc structure by drilling to locate the favorable limestone horizon, then driving to a point below the limestone bed, and then raising to test the ore. If the location of the limestone bed were unfavorable with respect to driving an adit, an additional shaft would be required.

The conclusions of the examining team are: "The examiners believe that the proposed project has merit, but it is in the realm of prospecting at the present time. Until more evidence is presented to locate the target and to infer the size of the ore body, no worthwhile project can be designed. It is recommended that Government assistance be denied without prejudice."

As there seems to be no real target at the present time, and as the Applicant is composed of a group of practical miners with very little money to contribute, we concur with the findings of the examiners and the Field Team. The commodity members also concur.

W. R. Griswold

W. R. Griswold

WPKlugescheid/er
Copy to: Docket
Admr R File
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/19	Klugescheid	500
	Fleisner	500
11/21	Selfridge	130
11/20	Smith	130
11/20	Kiilsgaard	130
" 21	Johnson	110
"	Mittendorf	100
		~~HB~~
11/21	gb	220
		225

NOV 21 1957

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Post Office Box 688
Cedar City, Utah

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

Dear Mr. Sykes:

Your application for aid for an exploration project and other reports available to us in Washington relating to the above-named property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting a small amount of lead-zinc mineralization on your lease, indicates to us that the probability of disclosing significant ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We regret the necessity of taking such action; however, it is taken without prejudice to your property. If you do additional work which reveals evidence that could materially alter this opinion, and which would provide a definite target for the exploration work, be assured that we will be pleased to consider a new application.

We wish to thank you for your interest in the Defense Mineral Program and for bringing your property to our attention.

WPKlugescheid/er 11/19/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

Sincerely yours,

C. O. Mittendorf

Administrator

8623

IN REPLY REFER TO:

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

November 15, 1957

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of Field Examination Report, DMEA 4628, (lead-zinc), Ky-Tenn Exploration Company, New Arrowhead Claims, Iron County, Utah

The applicant proposes to explore for lead-zinc ore deposits at the site of an old mine shaft in southeastern Utah.

The examining team do not believe the property is favorable for the presence of significant ore bodies. They state that the potential ore zone, an ore-bearing limestone bed, may not be present on the property. A lower part of the limestone bed has been explored from old mine workings and not more than a trace amount of lead and zinc was found. Old dumps on the property showed only low grade material.

I agree with the recommendations of the examiners for denial of the application because the Field Team was unable to find geologic evidence indicating that a worthwhile ore discovery would result from the proposed work.

W. P. Williams

W. P. Williams

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

November 8, 1957

Re: DMEA 4628 (Lead-Zinc);
$68,500
Ky-Tenn Exploration Co.
New Arrowhead Claims
Iron County, Utah

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Review of joint report of field team transmitted October 25, 1957.

An application dated January 30, 1957 by the above designated partnership for DMEA assistance to explore a lead-zinc prospect was referred to the field team for examination.

The joint report concludes exploration is unwarranted at this time due to the following conditions:

1. Lack of geologic information and inaccessibility of old workings
2. Applicant's lack of a specific objective
3. Inability of the field team to determine a justifiable exploration target

It is evident the property has merit as a prospect, but the work now needed seems outside the sphere of DMEA objectives.

After consideration of the field team's report, I concur with their conclusion and recommend assistance be denied without prejudice.

O. M. Bishop

O. M. Bishop

cc: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
F I L E S

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

October 29, 1957

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Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4628 (Lead-Zinc) Ky-Tenn Exploration Company (New Arrowhead claims) Iron County, Utah - Joint Report of Examination

Enclosed are the original and two copies of a Joint Engineering and Geologic Report of Examination on the subject property.

The mine workings are inaccessible and the report is based on a surface examination of the property, data furnished by the Applicant, and data from various reports on the property.

The examiners were unable to determine the position of any exploration target, if one is present, and; therefore, conclude that the proposed work is prospecting.

They recommend, and we concur, that the application for DMEA assistance be denied without prejudice.

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
11-4-57
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
DEPARTMENT OF THE INTERIOR

OCT 28 1957
REGION III
DENVER, COLORADO

P. O. Box 360
Grand Junction, Colorado

October 25, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Nasler

Subject: Transmittal of a joint engineering and geologic report, DMEA docket No. 4628 (Uranium), Ky-Tenn Exploration Company, New Arrowhead claims, Iron County, Utah

Transmitted herewith is a joint engineering and geologic report recommending a denial of an application by the Ky-Tenn Exploration Company on the New Arrowhead claims, Iron County, Utah.

The Ky-Tenn Exploration Company, a partnership, applied for Government assistance to explore for lead and zinc in the New Arrowhead claims, Iron County, Utah. The application was referred to the field and a field examination was made on August 21 by Fred R. Shawe and Walter Bank, accompanied by the applicant's Blane W. Sykes, J. T. Sykes, and Carl Fife.

The claims lie in Section 12, T. 31 S., R. 13 W., S.L.B. and M., on the eastern slope of the Indian Peak Mountains and within the Washington Mining District, Iron County, Utah.

The New Arrowhead claims contain lead-zinc ore which has selectively replaced limestone and shale members in a poorly understood stratigraphic sequence. Premineral and postmineral faulting, weathering effects, and igneous intrusions and extrusions have complicated the geological picture.

The operator wishes to search for and explore an assumed faulted extension of a bedded lead-zinc ore structure by drilling to locate the favorable limestone bed and raising to test the ore.

The examiners believe that the proposed project is in the realm of prospecting at the present time. Until more evidence is presented to locate the target and to infer the size of the ore body,

Reviewed by
DMEA OPERATING COMMITTEE
11-4-57
(date)

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no worthwhile project can be designed. It is, therefore, recommended that Government assistance be denied without prejudice. I concur with the conclusions and recommendations.

Enclosed are figures 1, 2, and 3 (attached to the joint report). The brochure also is returned herewith.

J. William Hasler

J. William Hasler,
Geologist

JWH/mlr

Enclosures
Report (10) w/figs. 1, 2, 3
Brochure
DMEA 4228, report on Pine Grove Mines
DMEA 1853, report on North Star Mining Dist.
DMA 989, Final report, Harrington Mines Co.
DMA 262, report on Metal Producers, Inc., Horn Silver Mine

FOR UNITED STATES GOVERNMENT USE ONLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DMEA
DEPARTMENT OF THE INTERIOR
OCT 28 1957
REGION III
DENVER, COLORADO

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

TRANSMITTED
OCT 29 1957

DMEA 4628

Ky-Tenn Exploration Company

New Arrowhead claims

Iron County, Utah

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ON SITE REPORT

Lead-Zinc

Joint Geologic and Engineering Report

by

Walter Bank
Bureau of Mines

Fred R. Shawe
Geological Survey

October 1957

Reviewed by
DMEA OPERATING COMMITTEE
11-4-57
(date)

DMEA 4628
KY-TENN EXPLORATION COMPANY
NEW ARROWHEAD CLAIMS
IRON COUNTY, UTAH

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DMEA 4628
KY-TENN EXPLORATION COMPANY
NEW ARROWHEAD CLAIMS
IRON COUNTY, UTAH

INTRODUCTION

The Ky-Tenn Exploration Co., a partnership of three men, c/o Blane W. Sykes, Box 688, Cedar City, Utah, applied for Government assistance in a $68,500 program under the Defense Minerals Exploration Administration, docket no. 4628, to explore for lead-zinc at the New Arrowhead claims, Iron County, Utah. The applicant wishes to explore a potential ore-bearing limestone-shale contact area adjacent to a fault.

The application is dated January 30, 1957. After asking for and receiving additional information, the Operating Committee, in a letter dated July 11, 1957, requested a field examination of the property. An examination was made August 21, 1957, by Fred R. Shawe and Walter Bank, accompanied by the applicant's representatives, Blane W. Sykes, Joe Thomas Sykes, and Carl Fife.

A general reconnaissance of the area was made. A geological map furnished by the applicant (product of Combined Metals Reduction Co. geologists) and another geological map (obtained from U. S. Bureau of Mines files) were compared with surface exposures. Underground workings are inaccessible, and available cross sections could not be checked. No samples were collected for assay purposes, but oxidized zinc specimens were noted on dumps and in various crops scattered over the claims. Minor amounts of galena were noted in some specimens which reportedly

came from recently-driven underground workings.

Reports listed below were examined in the office:

1. War Minerals Report, New Arrowhead mine, September 1943; examining engineer, Robert L. Jones, U.S.B.M.

2. War Minerals Report, New Arrowhead mine, January 1945; examining engineer, S. R. Wilson, U.S.B.M.

3. Supplemental Examination and Road Report, New Arrowhead mine, April 18,1945; examining engineer, S. R. Wilson, U.S.B.M.

4. New Arrowhead lead-zinc mine, April 1949 (supplemental to W. E. Young 1941-1); examining engineer, W. E. Young, U.S.B.M.

5. New Arrowhead mine, Combined Metals report, dated May 23, 1947, from Earl B. Young to E. H. Snyder.

CONCLUSIONS AND RECOMMENDATIONS

The New Arrowhead claims contain lead-zinc ore which has selectively replaced limestone and shale members in a poorly understood stratigraphic sequence. Premineral and postmineral faulting, weathering effects, and igneous intrusions and extrusions have complicated the geological picture.

The operator wishes to search for and explore an assumed faulted extension of a bedded lead-zinc ore structure by drilling to locate the favorable limestone horizon, then driving to a point below the limestone bed, and raising to test the ore. If the location of the limestone bed is unfavorable with respect to driving an adit, an additional shaft would be required.

No consideration was given to cost estimates because the proposed program is too indefinite with respect to the type and extent of work.

The examiners believe that the proposed project has merit, but is in the realm of prospecting at the present moment. Until more evidence is presented to locate the target and to infer the size of the ore body, no worthwhile project can be designed. It is recommended that Government assistance be denied without prejudice.

LOCATION, ACCESSIBILITY, AND LOCAL FACILITIES

The claims lie in sec. 12, T. 31 S., R. 18 W., S.L.B. and M., on the eastern slope of the Indian Peak Mountains and within the Washington Mining District, Iron County, Utah. The approximate (assumed) altitude ranges from 7,800 to 8,500 feet.

The isolated property is about 63 miles by road northwest of Cedar City, Utah, and about 30 miles from Lund, Utah (fig. 1). Good graveled roads extend to within 10 miles of the operations; and the mine access road with gentle grades is open to passenger cars, except in unusually wet weather. The climate is temperate, with an annual precipitation of 10 to 15 inches. The summer is relatively dry; occasional heavy snowfalls hinder winter operation.

A small spring at the campsite once handled the needs of eight men; however the spring is occasionally dry. The flooded Bim shaft workings could be tapped for additional water. Operator plans to bring

a power plant into camp; and a gasoline-powered compressor, 105-c.f.m. capacity, is available. Timber, mining supplies, and labor are obtainable at Cedar City or Salt Lake City. A Union Pacific Railroad siding is located at Lund, and truck rates from operations to Lund are estimated at $2.00 a ton.

HISTORY, PRODUCTION, PROPERTY, AND OWNERSHIP

The New Arrowhead property reportedly was discovered by a stagecoach driver or freighter who traveled the route between the railhead at Milford, Utah, and the mining camp at Delamar, Nevada. Early production figures and ownership records are not available, but old stopes and dumps of small size indicate that production did occur prior to 1916. In 1920 an organization known as the Uncle Bim Mining Co. sank a shaft less than 200 feet from the Fife shaft, drifted about 900 feet, but shipped no ore. This property now is included in the New Arrowhead property.

In 1938 the claims of the present group were relocated by the Fife brothers several years after the original locations were abandoned. The claims were worked actively during 1942, and an application was made to the Reconstruction Finance Corp. for a development loan. A $15,000 loan was granted in February 1943, and the mine was in production from May 1943 to the fall of 1945 when the "C" bonus for zinc terminated. Operators then reached an agreement with Combined Metals Reduction Co., which formally took over the mine on June 30, 1946. Some exploratory

work was done with no resultant production. The project was shut down May 15, 1947. In 1949 Messrs. William E. Young and Floyd D. Everett of the U. S. Bureau of Mines prepared a report with a topographic and geologic map of the area. In 1956 the Ky-Tenn Exploration Company secured a lease on the property and continued sinking on one of Combined Metal Reduction Company's exploratory pits.

Production

No records are available on shipments that were made from the property prior to 1916. During 1916 to 1918 shipments were made from the Calumet and Fife stopes on the 35- and 68-foot levels as follows:

	Tons	Pb, percent	Ag, ounces
Calumet stope	1,500	22.0	1.3
Fife stope	200	24.6	1.7

This ore contained considerable zinc for which no return was received. Smelter penalties on excessive zinc led to a shutdown of operations.

Shipments made from May 1943 to January 1, 1945, amounted to 1,206.92 tons with values as follows:

Total Au, oz.	Total Ag, oz.	Pb,%	Cu, %	Zn, %
6.3609	599.70	7.57	0.304	19.54

Records covering shipments made after January 1, 1945, are not available in this office.

Ore was shipped to the International Smelting Company plant at Tooele, Utah. Shipments consisted dominantly of oxidized ore, but sulphides were present also. Ore was selectively mined or sorted to yield high lead or zinc values as desired.

Property and Ownership

New Arrowhead claims Nos. 1-6 inclusive are recorded in the office of the County Recorder, Parowan, Utah, in Book L, pages 1-3, dated October 8, 1939. These claims were relocated and re-recorded under the claim names of New Arrowhead and New Arrowhead Nos. 1-5 inclusive in Book M, pages 285-287 dated June 6, 1951. The earlier names are entered on figure 2. No depth limitations are established for the project area.

Ground to the northwest is open and will be located by the applicants if necessary. Assessment work was not kept up on all the claims to the southwest (New Arrowhead Nos. 7-10 inclusive) and to the east (Dolomite Nos. 1 and 2), and some of these claims may not be available to the applicants. These abandoned claims are not pertinent to the proposed project.

Claims are owned by Carl Fife, Otto Fife, W. R. Fife, and Wesley McEown, all of Cedar City, Utah.

A 3-man partnership, consisting of Blane W. Sykes, Box 688, Cedar City, Utah, Wesley McEown, and Carl Fife, has acquired a suitable lease from the owners. The applicants furnished a single copy of the

lease with the original MF-103 form, which is not available in this office. Consents to Lien and subordination agreements will be procured by the applicants and submitted to the DMEA upon request.

Mr. Blane W. Sykes is a prospector with 3 years experience and has the financial backing of friends in Kentucky and elsewhere. Carl Fife, a competent practical miner with 30 years of experience, at present is operating a hauling and contracting business. Wesley McEown, who has 30 years of experience in various phases of mining, is a competent carpenter who could easily handle or direct the rehabilitation work necessary in camp or in the underground workings. Applicants propose to furnish their share of the costs mainly in labor and equipment.

DEVELOPMENT

The Fife shaft, a vertical shaft 70 feet deep, is the main working entry to the mine. This represents an old working shaft which was rehabilitated by the Fife brothers. From this shaft two levels were driven, the 35-foot level from which stopes extend up-dip in a southeasterly direction, and the 70-foot level which extends down-dip northwesterly. Stopes have been carried between the two levels. From the north end of the 70-foot level an inclined winze was driven which follows the ore down the dip of the "A" limestone. From this winze, 3 short levels were driven on the 80-, 90-, and 100-foot levels. On the 80-foot level a short drift to the southeast follows a fissure. On the 90-foot level, a 74-foot drift to the west was driven into heavy ground. On the 100-foot

level, 2 diamond-drill holes 114 feet and 72 feet respectively and directly northerly, located rhyolite porphyry (diorite?) and other contacts. The Fife shaft and workings require rehabilitation.

The Bim shaft, sunk about 1920, is reported to be 225 feet deep with about 900 feet of drifts and crosscuts to the north and south of the shaft. The upper 100 feet of shaft and the 100-foot level were rehabilitated in 1946-47 by the Combined Metals Reduction Company, who then drifted 70 feet along a dolomite-shale contact and drove 2 raises, 45 feet and 114 feet respectively, on crossfaults. Two diamond-drill holes, 29 feet and 32 feet, directed in a northeasterly direction from old Bim workings, located the dolomite-shale contact. Below the 110-foot point, the shaft and the lower workings are flooded. The entire shaft and workings are inaccessible.

The Fault shaft and the Discovery shaft are each less than 50 feet in depth. The Discovery shaft connects with the 35-foot level of the Fife shaft. An adit has been driven in the massive limestone southwest of the Discovery shaft.

About 600 feet northwesterly from the Fife shaft is a 30-foot shaft (Prospect shaft) as well as 2 tunnels 61 feet and 22 feet long. A dolomite-shale contact, with little mineralization, was found. This area is involved in the proposed project.

The Bim shaft headframe requires minor repairs, but the remaining shaft timber should be replaced. The Fife shaft headframe and timber are in poor condition. The hoisthouse, blacksmith shop, change house,

bunkhouse, and other buildings (except for the cook house) are in need of repairs. The 60-ton ore bin could be used after minor repair work. The spring used for culinary water requires cleaning, and the water pipelines should be replaced or reconditioned.

Not on the property, but available for use are:

2 ore cars, 1-ton capacity, used, good condition

200-300 feet of 20-pound rail, used

2 skips, 1-ton capacity, used

1 hoist (old automobile engine, gasoline driven)

1 compressor, 105-c.f.m., used, good condition

1 jackleg, used, good condition

Steel and miscellaneous items

GEOLOGY

The New Arrowhead mine is on the east flank of the Indian Peak range; the Indian Peak range is one of the narrow northerly trending mountain ranges characteristic of the Basin-Range physiographic province. Surface slopes are steep and exposures are poor in the immediate vicinity of the mine. The rocks exposed are: an apparently conformable sequence of limestone, siliceous shale, and quartzite that may correlate with the Harrington formation of Triassic age in the Star district to the north (Butler, p. 37-39), a quartz monzonite of late Mesozoic or Tertiary age, and a rhyolite of Tertiary age. The rhyolite is not exposed in the mapped area (fig. 3). The area is badly faulted

with numerous small wedges and blocks bounded by faults of small to moderate displacement.

The Harrington (?) formation (Mu, Mls, Msh, and Mqt on fig. 3) consists of interbedded limestone, shale, and quartzite. The limestone (Mls on fig. 3) is gray and coarse-grained to white and aphanitic and found in units from a few feet to several tens of feet thick; they are thin to thick bedded. The gray, coarse-grained limestone is principally calcite, but the dense white limestone is highly dolomitic. This dolomitic limestone is closely associated spacially with lead-zinc minerals and is probably secondary. The shale (Msh on fig. 3) is brown to dark olive green and almost black; in general it is highly siliceous and even cherty in a few places. Individual beds are from about 25 to over 100 feet thick. The quarzite (Mqt on fig. 3) is hard and dense, brown to almost white, and very well indurated. Grain size ranges from medium sized to cobble conglomerate. One conglomerate, exposed above the Prospect shaft, just outside the mapped area is a dense quartzitic rock that is so thoroughly reconstituted that the conglomeratic nature may be seen only on a few weathered surfaces. A tentative partial section of this formation, reconstructed from the faulted blocks in the mine area (sec. A-A'-A", fig. 3) shows:

Shale-thickness unknown, but greater than 100 feet
Quartzite-10 feet
Shale-20 to 40 feet
Limestone-5 to 15 feet
Shale-thickness unknown, but greater than 50 feet and probably less than 150 feet.
Limestone-thickness unknown, but greater than 50 feet

Fossil fragments collected from limestone a few hundred feet northeast of the mapped area, suggest a late Paleozoic age or an early Mesozoic age for this unit. A very tentative correlation, based upon the fossil fragments and upon lithologic similarity, is made with the Harrington formation of Triassic age (Butler, p. 37-39).

Quartz monzonite, intrusive into the Harrington (?) formation, crops out in a long narrow band that crosses the mine-access road about 250 feet north and a little west of the Fife shaft. It is also exposed in the lower-most workings of the mine (sec. A-A'-A", fig. 3). Diamond drilling done prior to this examination indicated that these exposures are the margins of a much larger mass. A little baking and other contact effects were noted in the intruded rock at the surface exposure, nothing is known of the nature of the contact in the underground exposures. The quartz monzonite is a medium-coarse grained, light gray-green rock that weathers to a pale reddish brown. No analyses were made of the intrusive plagioclase, hornblende and chlorite, and little quartz was noted in the rock. The term quartz monzonite is a field classification.

A pale reddish rhyolite caps the hill a few hundred feet northwest of the mapped area, and covers the entire ridge east of the mine.

A major NW trending and NE dipping normal fault bounds the mineralized area to the east. This fault is exposed in the easternmost workings of the Bim shaft and in the northeasternmost workings of the Fife shaft. At least two near-parallel faults are exposed west of the main fault and several cross faults cut the area. Movement on these faults is both

normal and reverse; throws range from a few feet to a few tens of feet. This fractured area represents a major northwesterly trending fault zone that can be traced for several thousand feet along strike. Movement along this fault zone is normal, estimated throw based upon the reported difference of lithology in Bim shaft workings and the difference in elevation of the base of the rhyolite on either side of the fault is in the order of magnitude of a few hundred feet. Ore grade material is confined to this fault zone, although traces of lead and zinc are found outside of the fault zone.

ORE DEPOSITS

The lead-zinc ore was in a single limestone bed and confined to the badly faulted area. The bodies were irregular in outline and contained small horses of waste-rock; the entire thickness of the limestone bed was usually mined as ore. Ore was present from the surface at the collar of the Discovery shaft to where it abutted against quartz monzonite in the northernmost workings of the Fife shaft. It was displaced, as much as 20 feet, by the cross faulting. Where ore was found, the limestone was highly dolomitic. Ore minerals replaced the dolomitic limestone. The ore minerals present were principally cerussite and smithsonite with some calamine. The upper portions of the bed were richest, particularly in lead content, and it is reported that ore even extended into the overlying shale in several places. Galena and sphalerite were present

in the richer upper portions of the ore and in one place (locality unknown) the ore was a sulfide ore.

ORE RESERVES

The ore has been completely mined out and no ore reserves remain in the mine.

PROPOSED EXPLORATION

The applicant, in his application for Government assistance, did not state clearly his exploration objective. The proposed exploration program submitted consisted of driving two adits and sinking one shaft in an area about 150 feet west of the existing mine workings. The purpose of this work would be to try to locate an extension of the mined-out ore shoot. No specific target area was given. The detailed cost estimate submitted was:

Unit costs:

1000 feet of drift at $40.00/ft.	$40,000.00	
200 feet of shaft at $60.00/ft.	12,000.00	
200 feet of raise at $60.00/ft.	12,000.00	
Total unit costs		$64,000.00

Miscellaneous costs:

Building repairs	1,000.00	
New buildings	3,000.00	
Bulldozing	500.00	
Total miscellaneous costs		$ 4,500.00

Total cost of this exploration program would be $68,500.00; Government participation at 50 percent would be $34,250.00. The applicant proposed

to furnish his share of the costs in labor and equipment.

The exploration program was discussed with the applicant and clarified at the time the field examination was made. During this discussion, the applicant proposed to drill a few holes, in the general vicinity of the Prospect shaft to determine whether the ore-bearing limestone bed is present in this vicinity and at what depth and if it has been mineralized. An adit would then be driven from somewhere in the canyon to intersect any favorable ground that might be found by the drilling. The type and extent of any subsequent work would be based upon the results of the initial work outlined above. No estimates of costs were discussed.

The possibility of exploring the limestone bed below the known ore-bearing limestone bed was also discussed. The applicant feels that this lower limestone is adequately explored by the Bim shaft workings and examination of the underground maps submitted by the applicant tends to confirm this belief.

The exploration program proposed by the applicant has no target and is in the nature of prospecting and not exploration. The examining team could not determine any suitable target; it is not known if the favorable bed is present or not in the area of the proposed work. The favorable bed, in the vicinity of the known ore deposit has been explored laterally from the present workings; the lower limestone bed has been explored from the Bim shaft and showed not more than a trace amount of lead and zinc. This lower bed has been considered as a target by previous

workers, notably by Combined Metals Reduction Company and the Reconstruction Finance Corporation. However, the depth of this bed below the Fife shaft working is conjectural and the Bim shaft workings suggest this bed is unfavorable for the occurrence of ore. Therefore the examining team recommends that the application be denied.

SAMPLING

No samples were collected for assay purposes because pertinent underground workings are inaccessible. Some character samples were collected from the dumps and outcrops. Assays of produced ore are given under the heading of "Production".

EXPLORATION COSTS

Applicant's proposal initially called for a total expenditure of $68,500. The original proposal upon which this cost figure is based has been changed, and the above figure is no longer valid. The current proposal is too indefinite in scope to warrant consideration under DMEA participation, and for this reason no cost figures are submitted in this report

REFERENCES CITED

Butler, B. S., 1913, Geology and ore deposits of the San Francisco and adjacent districts, Utah: U. S. Geol. Survey Prof. Paper 80.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
OCTOBER 1957
DOCKET 4628

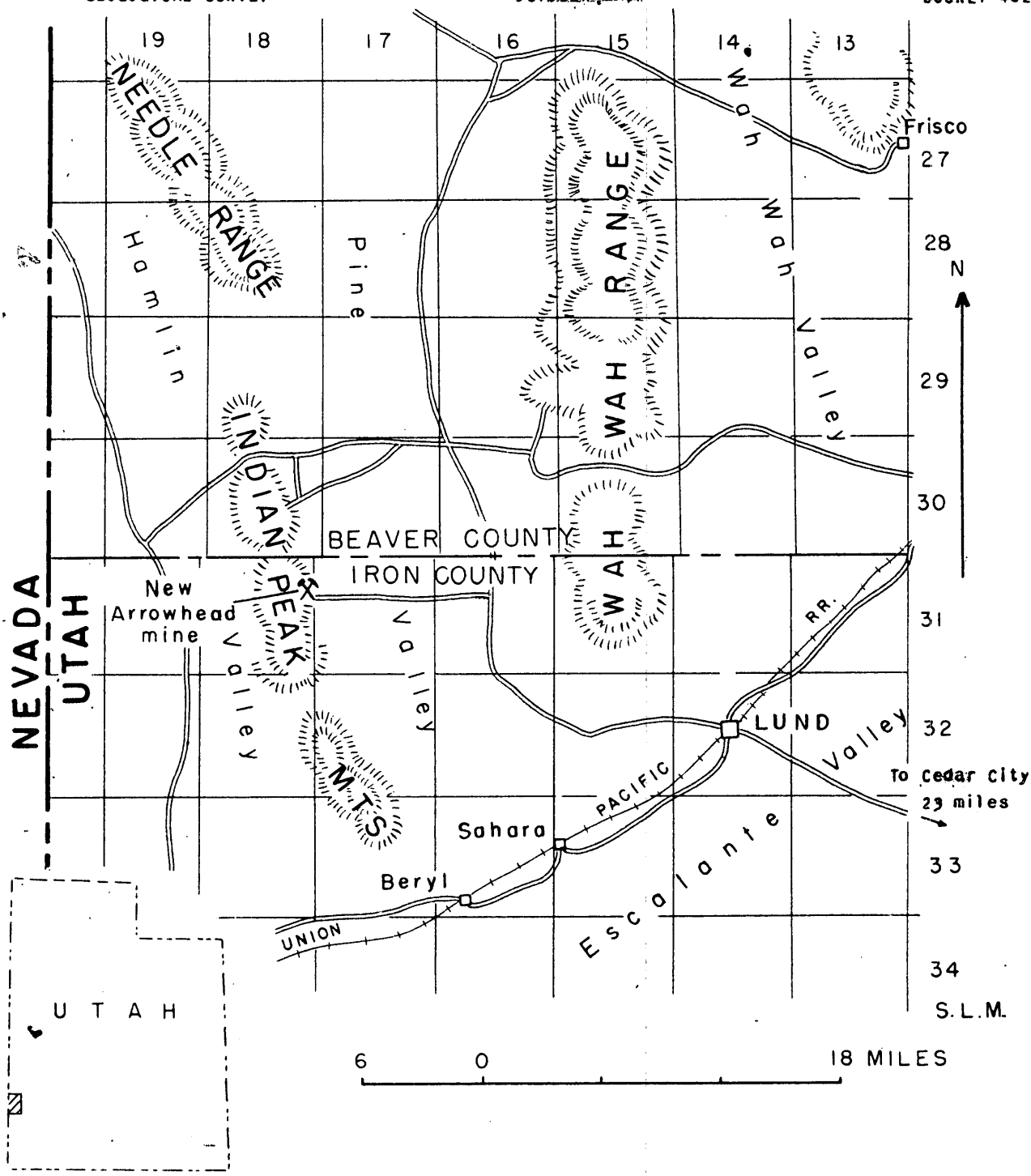

FIGURE 1.--INDEX MAP OF PART OF WESTERN UTAH SHOWING THE LOCATION OF THE NEW ARROWHEAD MINE, KY-TENN EXPLORATION COMPANY, IRON COUNTY, UTAH.

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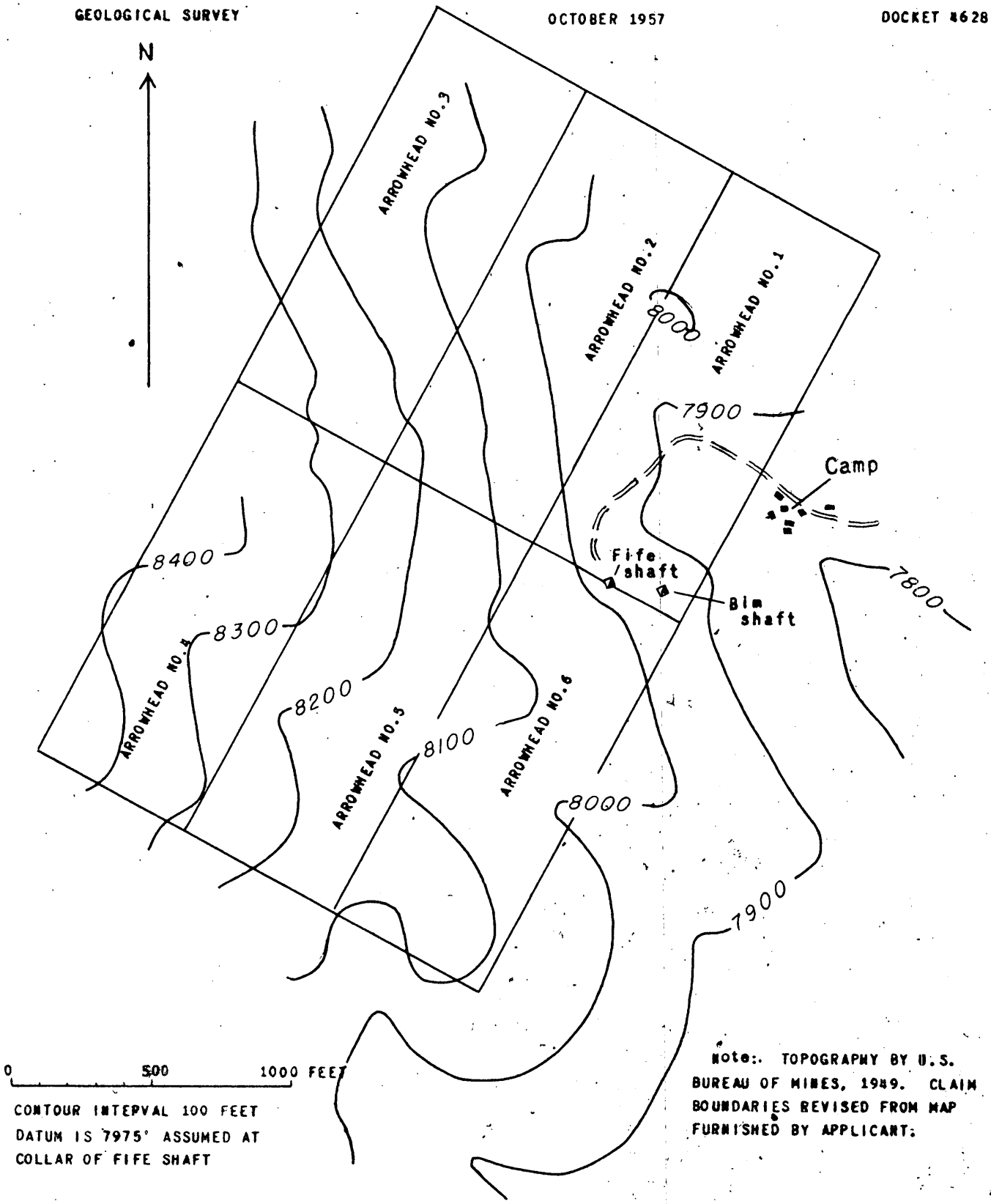

FIGURE 2.--MAP OF THE NEW ARROWHEAD MINE AND VICINITY SHOWING THE NEW ARROWHEAD 1-6 CLAIMS, KY-TENN EXPLORATION COMPANY, IRON COUNTY, UTAH.

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7/24	C	220
7/24	Klez	500

224 New Customhouse
Denver 2, Colorado

July 22, 1957

Memorandum

To: E. N. Harshman) W/enclosures, Items 1-5 Below
DMEA/SLC) W/enclosures, Items 1-5 Below

From: DMEA Field Team, Region III

Subject: Docket DMEA 4628 (Lead-Zinc) Ky-Tenn Exploration Company (New Arrowhead Claims) Iron County, Utah

Enclosed is the following material relating to the subject docket:

1. Copy of application for Government assistance in exploration work under the DMEA program.
2. Memorandum of Review by O. M. Bishop, USBM.
3. Memorandum of Review by N. E. Nelson, USGS.
4. Letter of transmittal of the foregoing to this office, dated July 11, 1957, from the Chairman, Operating Committee, DMEA
5. Routing Control Sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

The field examiners are requested to take into consideration the items listed in the Chairman's letter if they view the project proposal favorably.

If the field examiners recommend Government participation in the proposed exploration program, please submit eleven extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries.

The Bureau of Mines' copy of the application should not be returned to this office, but is to be kept for the Examining Engineer's file. The Routing Control Sheet, however, is to be completed, detached from the application, and forwarded to the Executive Officer with the Joint Examination Report. The Survey's copy of the application is to be returned to Mr. Harshman's office.

Original signed by
W. H. KING

W. H. King
Executive Officer

Enclosures

MEM:eh

cc: Sec. Op. Comm. (2)
Harshman
Docket
Chron.

FC 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/9	Klugerchief	500
/		500
7/10	GCS	120
7/10	Johnson	110
"	Matthewson	100
		225
		500

500

JUL 11 1957

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

Dear Mr. King:

The cited application for exploration assistance is being referred to your office for a field examination and recommendations.

If the project is favorably considered by the Field Team, the following matters will have to be taken into consideration:

1. We have finally received the maps, which we have been requesting for some months, and which were apparently obtained from the Combined Metals Reduction Company. There is no project plotted on them and the proposed drilling which shows on some of the maps does not have anything to do with this application. We are sending you five copies of these maps. The Applicant apparently does not have the slightest idea as to how to correctly prepare an application and so, if the property looks promising, it will be necessary to help in this direction.

2. Only the New Arrowhead claims 1 - 6 are included in the application and judging by the position of the Fife shaft on map of the claims, it may be that not enough of the claims have been included.

3. The claims are not plotted on any of the maps of the mine workings or topographic maps. As we do not have sufficient data at hand for this purpose it will be necessary to do so in youroffice.

8623

4. Consents to Lien and Subordination Agreements will have to be obtained from the Lessors.

5. It should be made clear to the Applicant that it will have to carry the expense of the work for about the first two months before the first payment by the Government has been duly processed. The idea seems to be to supply equipment and labor as the Applicant's share of expenses.

6. Costs for shaft sinking, raising, and tunnelling should be carefully analysed and detailed for contract purposes.

7. It would be interesting to know what preparatory work has been done with Mr. Sykes mentions in his letter.

Copies of memoranda dated February 18, 1957, and June 18, 1957, by O. M. Bishop, Bureau of Mines, and N. E. Nelson, Geological Survey, respectively, relating to the project are enclosed for your information. Also, we are enclosing two copies of the application for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

/s/ O. M. Bishop

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

WPKlugescheid/er 7/9/57

Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chhon.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/9	Klugescheid	5-00
7/10	Selfridge	130
7/11	Johnson	110
"	Kittredge	100
7/12		225
		3-00

JUL 11 1957

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

7/10 Bishop (130)
7/10 Kiilsgaard (130)

Dear Mr. Sykes:

We have received the maps which accompanied your letter of June 4, 1957, to Mr. Dakan.

Your application for Government assistance to explore the cited property has been reviewed by the Division of Base Metals of the Defense Minerals Exploration Administration and has been referred to:

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

If the Field Team requires additional information concerning your application, they will contact you at an early date.

Sincerely yours,

C. O. Mitchell (for)

Administrator

WPKlugescheid/er 7/9/57
Copy to:
Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.
Region III

8623

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA 18
RECEIVED JUN 18 1957

DATE	INITIALS	CODE
6/18	JWH	220
~~6/19~~	~~thy~~	~~500~~

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

June 18, 1957
Re: DMEA 4628
Ky-Tenn. Exploration Co.
New Arrowhead Claims
Iron County, Utah
$68,500 - Lead-Zinc

~~Memorandum~~

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The applicant requests assistance in searching for the assumed faulted extension of a bedded lead-zinc ore structure by driving 2 tunnels, 1,000 feet, sinking a shaft 200 feet, and raising 200 feet.

The applications says an R.F.C. Loan was awarded during World War II, and the U. S. Bureau of Mines constructed a 10-mile access road to the property. What was accomplished in the way of work is not stated. An examination appears to be warranted.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

Ky-Tenn. Exploration Co.
Docket No. = DMEA-4628

June 4, 1957
Box 688
Cedar City, Utah

Mr. Allen S. Dakan
U.S. Dept. of the Interior
D.M.E. Administration
Washington 25, D.C.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 10 1957

DATE	INITIALS	CODE
6/10	C	220
6/10	Klug.	500

Dear Mr. Dakan

Please include this group of Geological maps with my application dated January 30, '57. DMEA-4628.

I might state, in connection with the map outline, that it is the proposed plan by the Ky-Tenn Exploration Co. that work be centered west of the third fault on these drawings. It is believed that a sizeable body of Lead & zinc ores exist thereby. Some Drilling and shafting has already been done at that point by this company.

Yours Sincerely

Blane W. Ryker

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 12, UTAH

OFFICIAL FILE COPY
DMEA
RECEIVED 1957
DATE | CODE

May 27, 1957

Mr. Blane W. Sykes
Box 688
Cedar City, Utah

Dear Mr. Sykes:

This is in response to your letter of May 19, 1957, concerning Bureau of Mines information on the New Arrowhead Mine, Iron County, Utah.

We have some data that may be of value to you in submitting a request for assistance under the DMEA program. It is suggested that you call at this office at your convenience to discuss the property.

It is believed that Combined Metals Reduction Co. may have diamond drilled several holes on the property. Mr. Carl Fife of Cedar City, Utah, should have this information. Mr. Louis W. Cramer, geologist for R.F.C. during the period of World War II, may be able to provide additional information. His present address is Atlas Building, Salt Lake City, Utah.

Very truly yours,

Stephen R. Wilson

Stephen R. Wilson,
Supervising Mining Engineer

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/6	Klugescheid	500
	Shiamel	500
		~~110~~
"	Mittendorf	100
6/5	C	220
		500

JUN - 5 1957

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

Dear Mr. Sykes:

We refer to your note, written on a letter from Mr. Harshman to you, dated March 28, 1957.

The maps, which have been requested a number of times, are very important if your application is to be evaluated. If you are still interested in Government assistance under the DMEA program please forward them to this office without delay.

We wish to cooperate with you fully in allowing ample time to supply the requested information; however, we cannot indefinitely postpone action on an application. Therefore, if we do not receive the requested information within 30 days from the date of this letter, we will assume that you are no longer interested in proceeding with your application, and we will consider it as having been withdrawn.

Sincerely yours,

C. O. Mittendorf

Administrator

WPKlugescheid/er 6/5/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

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

May 27, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 29 1957

DATE	INITIALS	CODE
5/29	C	220
5/29	Klug.	~~500~~

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-4628 (Lead-Zinc) Ky-Tenn Exploration Company (New Arrowhead claims) Iron County, Utah

Your letter of May 24, 1957 inquired as to our progress in getting supplemental information on the subject application.

You have been furnished with copies of our letters of February 4, 1957, March 28, 1957, and April 1, 1957 requesting copies of the maps that were reported to be included with the application but were not received with it. You were furnished also with copies of the Applicant's note written on the original of our letter to him, dated March 28, 1957.

No word has been received from the Applicant, and it appears appropriate to place the application in the inactive files.

E. N. Harshman

E. N. Harshman

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/23	Klugescheid	500
	Bryant	500
5/24	[illegible]	130
		~~[illegible]~~
"	Butterkorn	100
5/24	[illegible]	220
		500

500

MAY 24 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

Dear Mr. Harshman:

We refer to your letter to the Applicant, dated March 28, 1957, in which you again requested the maps which were supposed to have been enclosed with the application.

Nearly two months have now elapsed and to date nothing has been forthcoming. We cannot indefinitely postpone action on this application and if no progress has been made in supplying the necessary information, we will have to take the necessary steps to place it in our inactive files.

Kindly advise us as to the present status of this application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

WPKlugescheid/er 5/23/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

APPROVED:

Frank D. Lamb (FDL)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

8623

OFFICIAL FILE COPY
DMEA
RECEIVED APR 3 1957

DATE	INITIALS	CODE
4/3	C	220
4/3	Klug	500

224 New Customhouse
Denver 2, Colorado

April 1, 1957

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: Docket DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
(New Arrowhead claims)
Iron County, Utah

Dear Mr. Sykes:

In reply to your note received in this office April 1, 1957, it is impossible to evaluate the work proposal submitted by your application until the maps requested by our letter of March 28, 1957 are received.

Thus, if you are still interested in Government assistance under the DMEA program, it is imperative that you submit the requested maps.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

MHM:jy
cc: Chm. Op. Comm. (2)) w/copy of Applicant's
Harshman) note
Docket 4628
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
204 New Customhouse
Denver 2, Colorado

March 28, 1957

DMEA
DEPARTMENT OF THE INTERIOR
APR 1 - 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
DMEA
RECEIVED APR 3 1957

DATE	INITIALS	CODE

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: Docket DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
(New Arrowhead claims)
Iron County, Utah

Dear Mr. Sykes:

By letter dated February 4, 1957, we advised you that your application for DMEA aid had been received and was being forwarded to our Washington office for processing. We also advised you that no maps were included with the application. You were requested to forward them immediately to this office. To date, we have received no response to this request.

This is to inform you that processing of your application is being withheld pending receipt of the requested maps.

Very truly yours,

E. N. Harshman

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

Dear Mr. Harshman

The maps I had mentioned having were not as accessible as expected —. If they are not necessary please omit that part. However, if of importance, in your estimation, I can send for them. Blane W. Sykes

224 New Customhouse
Denver 2, Colorado

March 28, 1957

4/2 4/2	C Klug	220 500

Mr. Elane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: Docket DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
(New Arrowhead claims)
Iron County, Utah

Dear Mr. Sykes:

By letter dated February 4, 1957, we advised you that your application for DMEA aid had been received and was being forwarded to our Washington office for processing. We also advised you that no maps were included with the application. You were requested to forward them immediately to this office. To date, we have received no response to this request.

This is to inform you that processing of your application is being withheld pending receipt of the requested maps.

Very truly yours,

Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

MHM:jy
cc: Chm. Op. Comm. (2)
Harshman w/copy of Chm's. ltr. dtd 3-25-57
Docket 4628
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/21	Klugescheid	500
3/21	Frame	500
3/22	Selfridge	120
"	[illegible]	110
	[illegible]	100
3/25	C	220

500

500.

MAR 25 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4628 (Lead-Zinc)
Ky-Tenn Exploration Company
New Arrowhead Claims
Iron County, Utah

Dear Mr. Harshman:

About a month ago we received the cited application, but without the mentioned maps. In your letter of transmittal it was mentioned that the maps had been requested from the Applicant. To date none have been received and it is impossible to evaluate the project until the maps are at hand.

Will you please call this matter to the attention of Mr. Sykes so that we may begin processing this application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

WPKLUGESCHEID/ER 3/21/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

APPROVED:

Frank D. Lamb (FDL)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

Attorney?

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 19 1957

DATE	INITIALS	CODE
2-19	C	220
		500

February 18, 1957

Re: DMEA 4628; Lead-Zinc
$68,500
Ky-Tenn Exploration
Sykes, McEown & Fife, partners
New Arrowhead Mining Claims
Iron County, Utah

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Review of application dated January 30, 1957, received February 8, 1957.

I have reviewed the application; and the Bureau of Mines file on the property which consists of an examination report made in 1942, an access road examination and supplemental reports made at various times between 1942 and 1949.

From these sources it appears that the ore occurred as a limestone replacement near an east west sedimentary-igneous contact. Steeply dipping sedimentary beds are truncated by a large mass of rhyolite porphyry. Younger intrusives of monzonite porphyry cut the rhyolite and the contact zone of the latter with the sediments. Oxides of lead and zinc formed the chief ore minerals. These were mined down dip for 450 feet where the host rock was cut off by the monzonite porphyry. In the lower part of the workings galena, sphalerite and pyrite were also present as residual primary minerals, and minor quantities of copper were recovered at the smelter. Total production has been in the order of $100,000 worth of lead, zinc, silver, copper and gold.

The mine workings consists of a 70-foot vertical shaft with 35- and 70-foot levels and the 200-foot Bim shaft with levels at 100 and 200 feet of depth. An inclined raise connects the two groups of workings but the 200 level was inaccessible in 1949.

At the time the "C" premium payed for zinc during World War II was discontinued, practically all reserves of ore were depleted. The Combined Metals Reduction Co. then acquired an interest and unsuccessfully diamond drilled seeking new ore. As of 1949 Bureau reports indicate that well directed exploration in the existing mine has been without success.

The applicant now proposes to drive 2 new tunnels and a shaft 150 feet west of the existing workings. Too little information is given to evaluate this program, therefore I recommend tha application be referred to the field for review and possible examination.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

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

224 New Customhouse
Denver 2, Colorado

February 4, 1957

EXTRA COPY
DMEA
RECEIVED FEB 7 1957

DATE	INITIALS	CODE

Mr. Klane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Re: DMEA Application (Lease-Sale)
Ky-Tenn Exploration Company
(New Arrowhead claims)
Iron County, Utah

Dear Mr. Sykes:

We received in the mail today the referenced application consisting of the following:

1. Four copies of Form MF-103 signed by you as applicant.

2. Four copies of page 2, answering questions 4 (a) (b)(c)(d) and (e), questions 5(a)(b) and (d) and question 6 estimate of costs.

3. One copy of Lease Agreement.

4. One copy of a list of settlements lots 1-49 inclusive.

Page 2 states as follows:
" Physical description 4(a) Included in this application is a copy of maps and production figures showing the property has been explored and mined at least three times prior to this present time."

This is to advise you that no maps were included. We are forwarding the application to the Washington Office, DMEA for review without the maps. Please forward them immediately, and we will transmit them on to Washington for attachment to this application when they are received.

Yours very truly,

Original signed by
J. W. TOWNSEND

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

WMT:ytl
cc
Sec. Op. Comm. (2)
Harshman
Subject
Chron.

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

February 9, 1957

Mr. Blane W. Sykes
Ky-Tenn Exploration Company
Box 688
Cedar City, Utah

Subject: DMEA-4628

Dear Mr. Sykes:

Your application for exploration assistance, dated January 30, 1957 submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-4628 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to: Region III
Code 500

6416

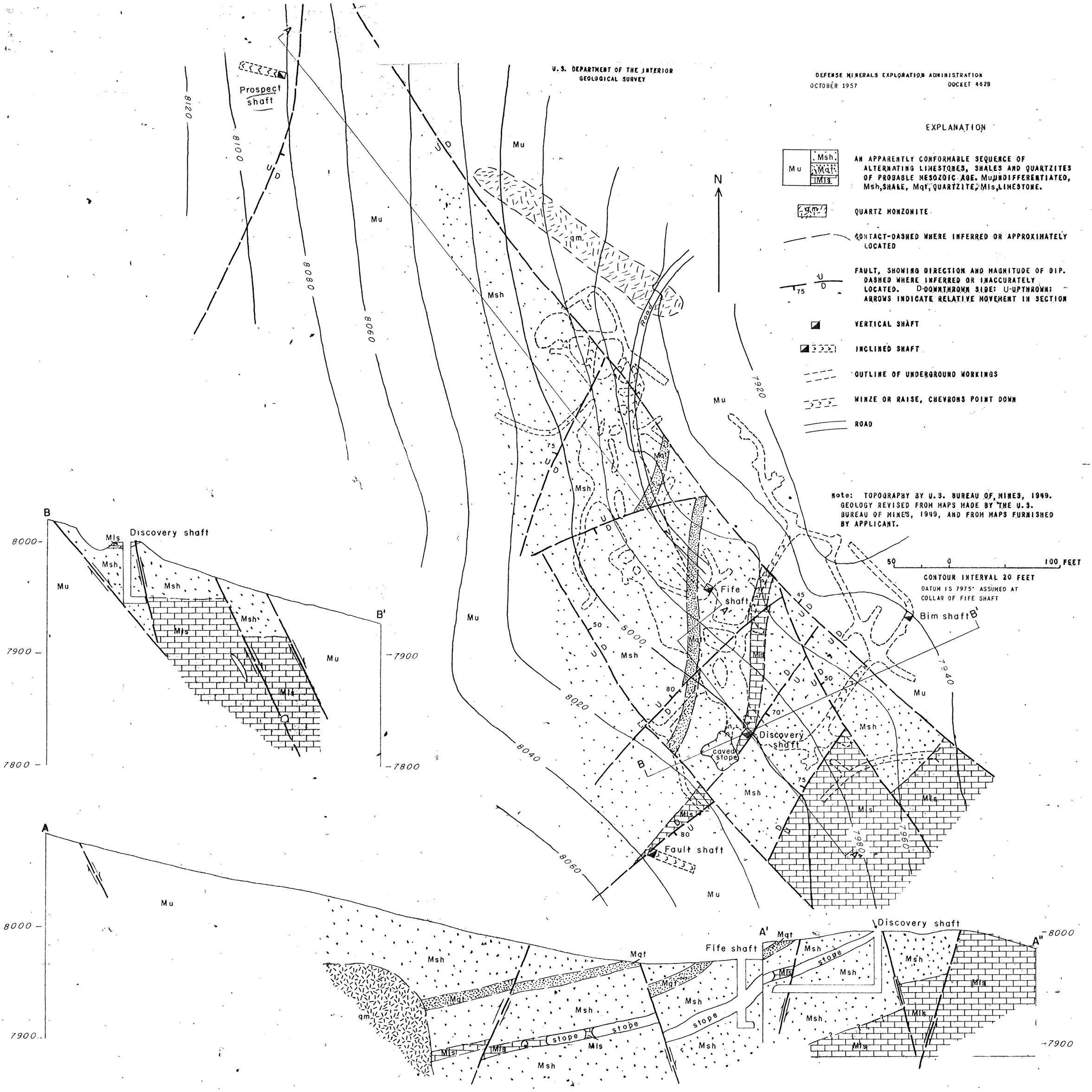
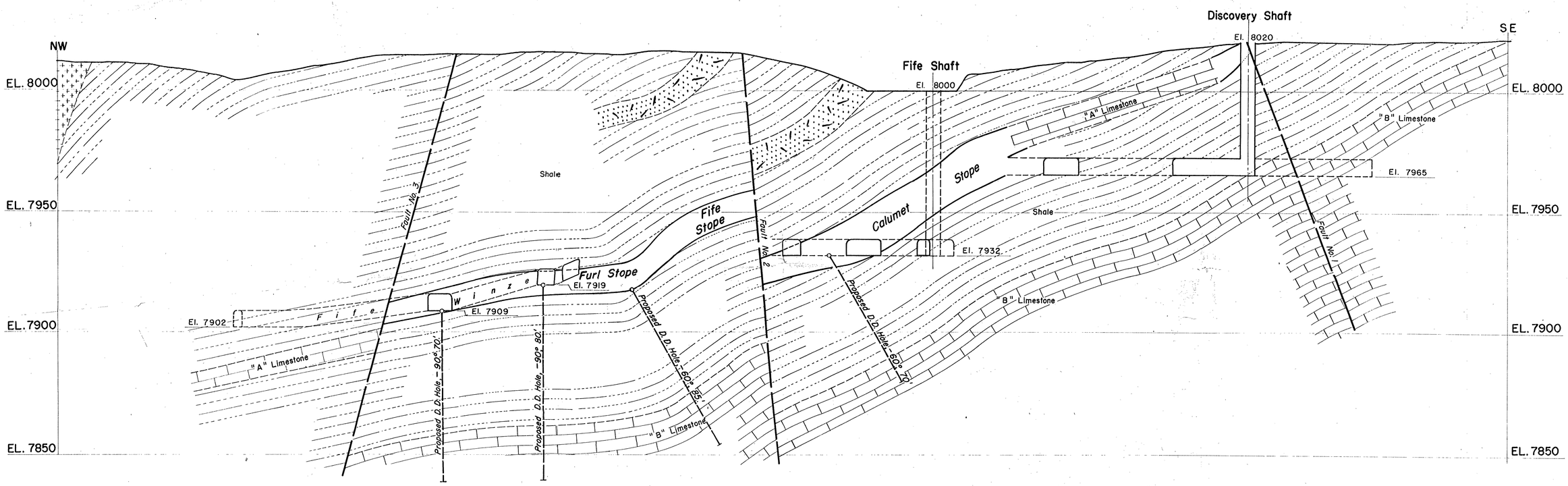


FIGURE 3.--GEOLOGIC MAP AND SECTIONS OF THE NEW ARROWHEAD MINE, KY-TENN EXPLORATION COMPANY, IRON COUNTY, UTAH.



Section A — A

LEGEND

- LIMESTONE.
- SHALE.
- QUARTZITE.
- RHYOLITE PORPHYRY.
- CONTACT.

0 20 40 60 80

SCALE OF FEET

NOV. 1, 1944.

NOTES

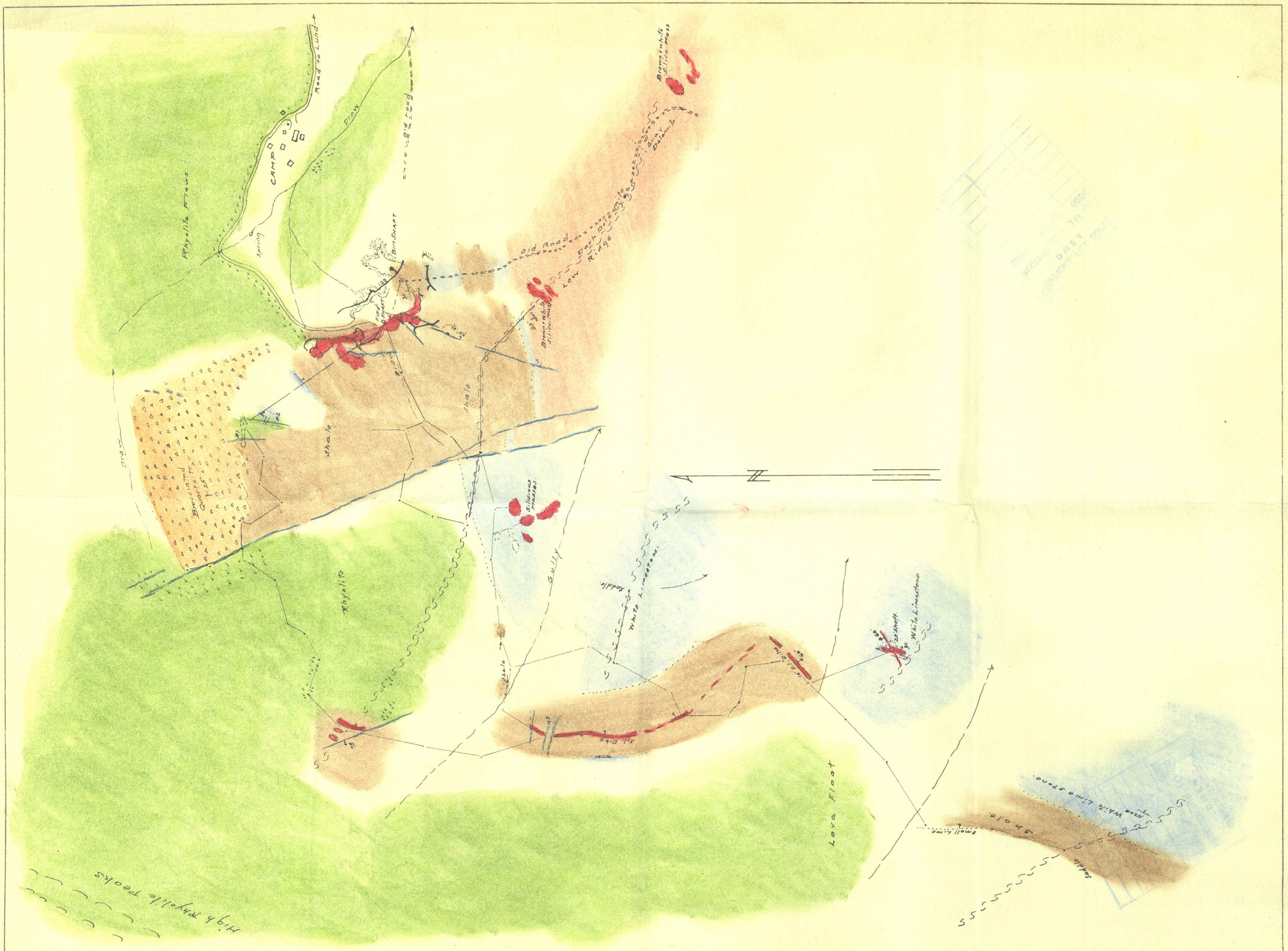
1. DATA TAKEN FROM BRUNTON AND TAPE SURVEY BY RECONSTRUCTION FINANCE CORPORATION.
2. FOR LOCATION OF SECTION A-A SEE PLAN OF UNDERGROUND WORKINGS, DRWG. NO. 1500 — 3.105 — 1.

FIG. 4
DMEA-4628

1500 — 3.106 — 1

½ SIZE

Section of New Arrowhead Mine, Iron County, Utah.



REVISIONS	REFERENCES	WORK			
		DRAWN	10/1/46	EBJ	COMBINED METALS REDUCTION CO.
		TRACED			DMBA-4628.
		CHECKED			
		APPROVED			

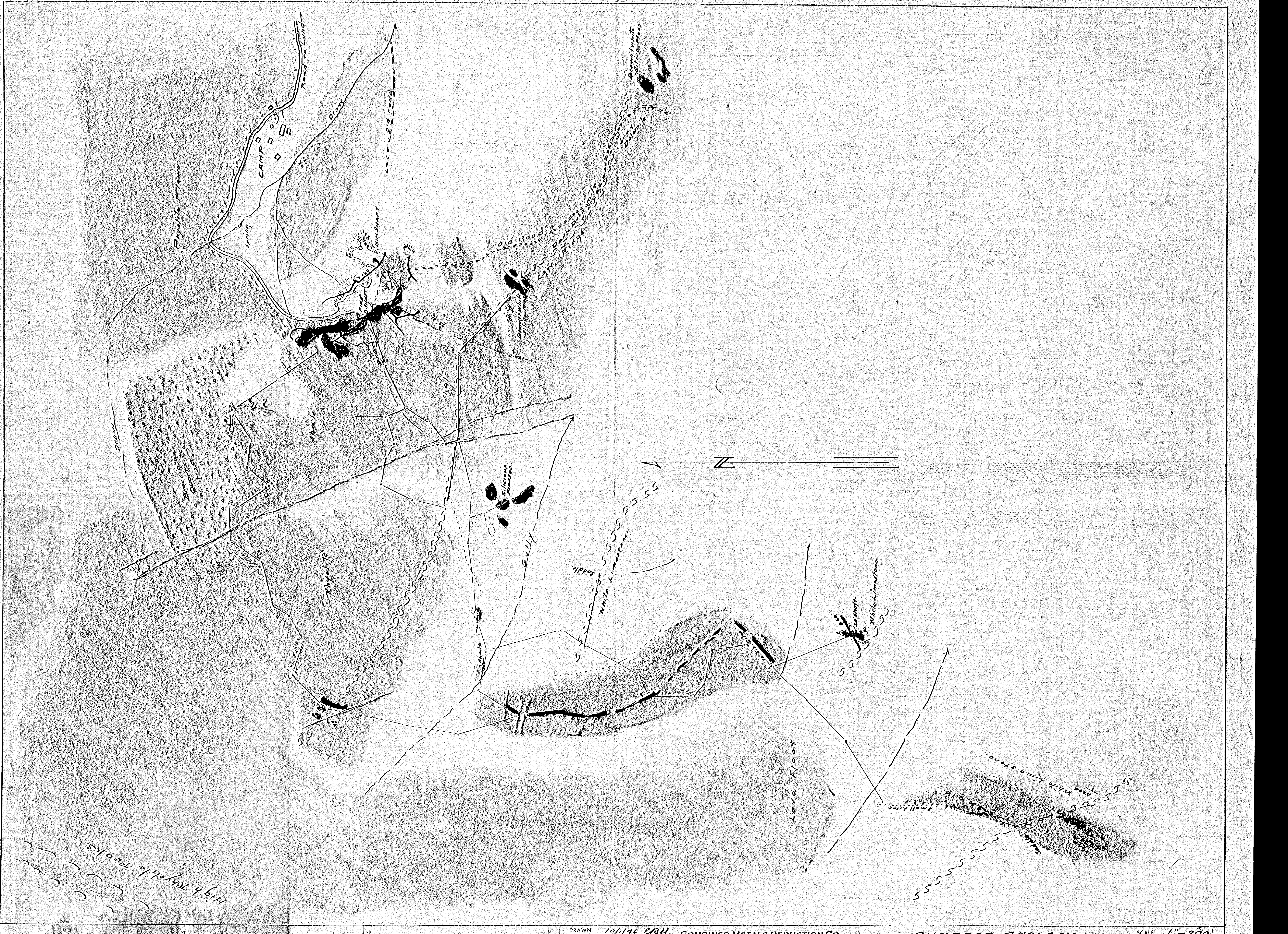
SURFACE GEOLOGY
NEW ARROWHEAD MINE
IRON COUNTY - UTAH

SCALE 1"-200'

C-

Salt Lake Blue

FULL SIZE



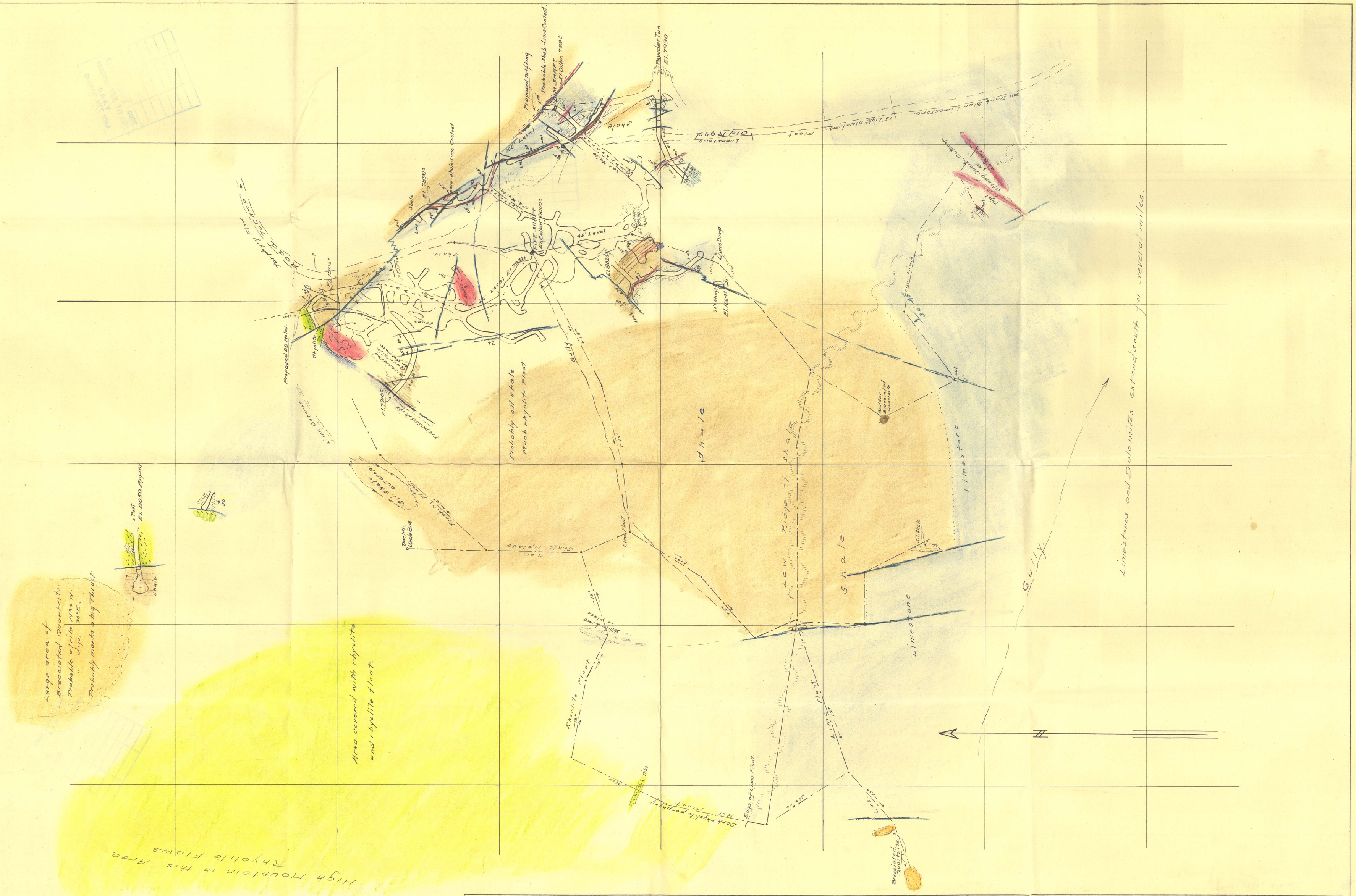
REVISIONS	REFERENCES	WORK — DRAWN 10/1/46 EBY. / TRACED / CHECKED / APPROVED	COMBINED METALS REDUCTION CO. DMEA-4628.	SURFACE GEOLOGY NEW ARROWHEAD MINE IRON COUNTY - UTAH

SCALE 1" - 200'

C-

Salt Lake Blue

FULL SIZE

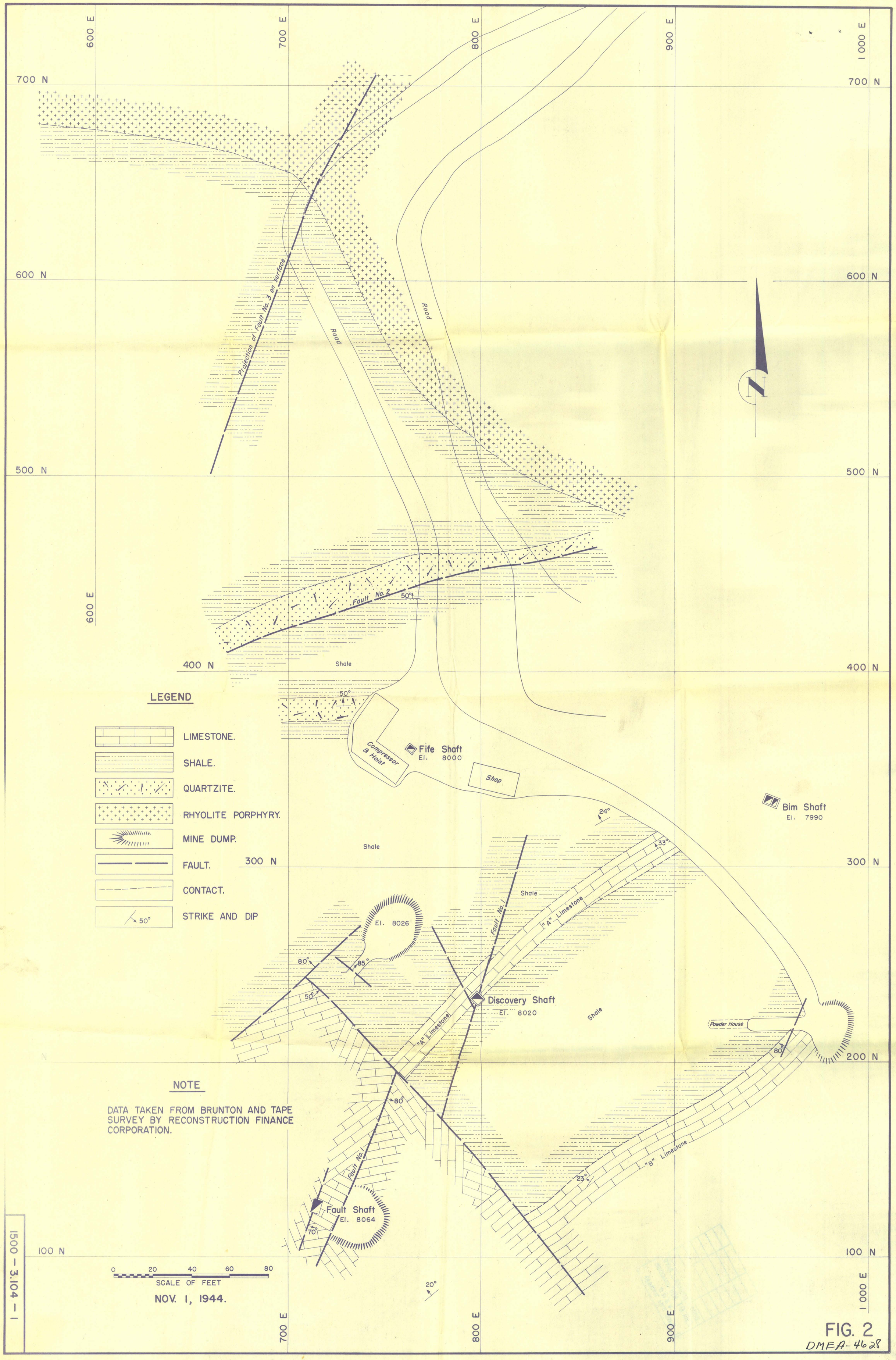


REVISIONS		REFERENCES	Brunton Survey	WORK	DRAWN 8/30/46 EBY	COMBINED METALS REDUCTION CO.	NEW ARROWHEAD MINE IRON COUNTY - UTAH DMEA-4628
					TRACED		
					CHECKED		
					APPROVED		

SCALE 1"=50'

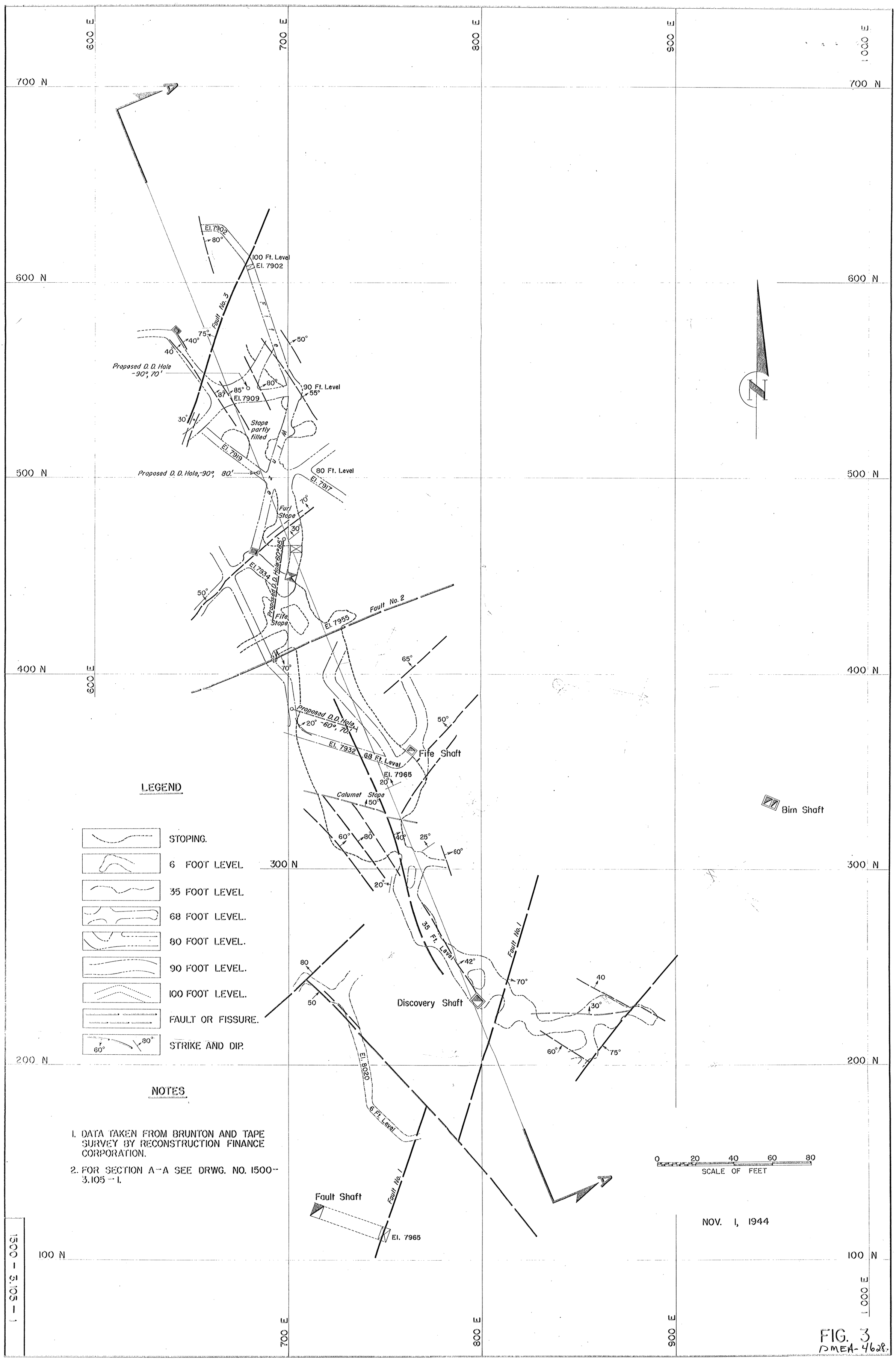
D-

1/2 Size



Surface Map of New Arrowhead Mine, Iron County, Utah.

½ SIZE



Plan of Underground Workings of New Arrowhead Mine, Iron County, Utah.

½ SIZE