DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

D.M.E.A.
~~DMA~~ Docket No. 2311

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An Exploration Loan

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

One copy of MF-103 to Bureau of Mines
One copy of MF-103 to U.S.G.S.

Routing Slip

To: Mr. Ellis Date 1/3/52

To: Operating Com. Form 4070-a Date 2-27-52

To: _____ Date _____

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CONTROLLED DOCUMENT

700 FILE COPY
SURNAME:

Schmidt
Ellis

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

SEP 30 1952

Hon. Howard H. Baker
313 Post Office Building
Knoxville, Tennessee

Re: Dockets DMEA-2311 and DMEA-2326
(Copper and sulphur)
T. J. McDonald
Monroe County, Tennessee

My dear Mr. Baker:

This acknowledges receipt of your letter of September 25 inquiring about the results of the exploration work of the Tennessee Copper Company in relation to the captioned applications. At the time our letter of denial was written to Mr. T. J. McDonald, it had been thought that the results of this drilling might be made available to us. Drilling was started last April, and we note from your letter that it is discontinued.

Since the Tennessee Copper Company is doing this work at their own expense it is unfortunate that we cannot depend on getting any of the results.

We do know that their drilling was done as a result of considerable geophysical and geological work made some years ago, with the drill holes scientifically directed on definitely located structures. There is also one consideration in their exploration work which is not applicable to other copper prospectors, namely the value of the mineral pyrrhotite associated with these ores, which is devoid of copper but is of value in making sulphuric acid in the Tennessee Company plant.

We regret that to date there is no new information since writing the letter of denial to Mr. McDonald on March 20, which would throw any more favorable light on these applications.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FSSchmidt/gla 9--29-52
cc to: Adm. Reading File
Dockets
Messrs. C.H.Johnson, Rm. 3621
N.E.Nelson, Rm. 4216 GSA

Mr. Ellis

Mr. Schmidt
DMEA Field Team, Region VII (2)

CONGRESS OF THE UNITED STATES
House of Representatives
Washington, D. C.

September 25, 1952

313 Post Office Bldg.
Knoxville, Tennessee

Mr. Frank E. Johnson
Acting Administrator
Defense Minerals Exploration Admn.
Department of the Interior
Washington 25, D. C.

Dear Mr. Johnson:

Re: Docket No. DMEA-2311 (Copper-Sulphur)
Docket No. DMEA-2326 (Copper-Sulphur)
T. J. McDonald
Monroe County, Tennessee

Referring further to your letter to me under date of July 23, 1952 relative to the above captioned matter. Mr. T. J. McDonald is in my office now. He informs me that as he understands it, this drilling program has now been completed, and if in keeping with your policies he would like to have the information obtained as a result of the drilling as suggested in your letter to Mr. McDonald under date of May 1, 1952.

I will appreciate being further advised as to the situation.

Sincerely,

/s/ Howard H. Baker

HHB:dl

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o
p
y

DMEA 2326
DMEA-2311 (Copper and Sulphur)

Application 12/27/51 by T.J.McDonald Amount $4,950.00

Schmitt

Letter from Laurence 3/7/52

States that Tennessee Copper Company has recently applied to Bureau of Land Management for prospecting permits on a block of National Forest land, adjoining and surrounding McDonalds tracts.

There has never been any application by Tennessee Copper to DMPA or DMEA for drilling project. Hence they are doing or planning to do this drilling on their own.

Letter from Laurence 3/10/52

Tennessee Copper will soon begin drilling specific anomalies located by magnetometer surveys made some years ago. This information may be of interest in considering the subject applications.

Note the post script - This information supplied confidentially by the company, and of course should not be revealed to the applicant-RAL.

March 17, 1952 - Acting Administrator Mittendorf to Mr. McDonald denial of application.

April 15, 1952 - Tennessee Copper moved a core drill rig on land adjoining (McDonald 4/18/52).

May 1, 1952 - Letter from Ellis to McDonald.

"The diamond drill program that has now been started by the Tennessee Copper Company in the Beaver Dam Bald area should add materially to our knowledge of the geology of that area. If the exploration program now initiated by that company results in the finding of copper ore deposits near or adjacent to your leases, that information should be of value not only to you but also to the Government in a re-

evaluation of your applications. If after the completion of the present drilling program of the Tennessee Copper Company you have reason to believe that ore was discovered near your property we shall be pleased to have you file a new application."

May 8, 1952 - Letter from Mr. Mittendorf to Sen. Kefauver quotes the foregoing and adds.

"We have taken this stand, in the belief that both the Government and the applicant will be benefited by the information obtained by the Tennessee Copper Company in diamond drilling this area."

July 23, 1952 - Letter from Acting Administrator to Congressman Baker quotes the foregoing.

Sept. 22, 1952- Letter from Congressman Baker to Frank Johnson asks "I should like to know what the Tennessee Copper Company found during their exploration.

CONCLUSION

It is only natural for Congressman Baker or Sen. Kefauver or McDonald to assume from the correspondence that the Government would know the results of the drilling of the Tennessee Company. Just how the information gained by Tennessee "should be of value to the Government" I do not see, unless this private Company doing this work at their own expense, wants to make the results available to the Government fore re-use. This would be unlikely if they wanted to acquire the surrounding area which their drilling proved to be valuable.

The whole idea underlying these letters is that the Government will know better how to evaluate this application as a result of Tennessee drilling and this idea has been impressed on McDonald etal so that their inquiry as to what these results have been in quite natural.

We are now placed in the position of having to tell them that we know nothing about the results of Tennessee drilling, and that they can probably find out more about it locally than we can.

Alternative - That before we answer this letter we inquire of Mr. Laurence whether he knows anything about these results that we could divulge.

These big companies drill these wild cat areas to buy them up themselves, and not to benefit local leasers, so I doubt whether Tennessee will divulge any results if they are indicative of values.

Recommend letter to the inquirers explaining that Tennessee is doing their work at their own expense that the results are not available to us at present, but that as soon as they are, we will be guided in a reappraisal of the merits of the application.

Sch

FILE COPY
700 SURNAME:

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

JUL 23 1952

Hon. Howard H. Baker
House of Representatives
Washington, D. C.

Re: Docket No. DMEA-2311 (Copper-Sulphur)
Docket No. DMEA-2326 (Copper-Sulphur)
T. J. McDonald
Monroe County, Tennessee

My dear Mr. Baker:

We have your inquiry of July 17, 1952, concerning the captioned applications of Mr. T. J. McDonald of the McDonald Drilling Co. of Middlesboro, Kentucky.

We advised Mr. McDonald in our letter of March 20, 1952, that his applications had been denied on the following basis: "The engineers who have studied the subject applications and others who have examined the geology and mineralization of the Beaverdam Bald and Little Bald areas are of the general opinion that although the area shows disseminated pyritic mineralization, the possibility of encountering favorable copper mineralization is rather limited, especially as there are no surface indications of such occurrences."

On April 18, 1952, Mr. McDonald wrote this agency requesting that his applications be reconsidered on the basis that the Tennessee Copper Company was starting a diamond drilling program in the Beaverdam Bald area, which is the district in which the Applicant's properties are located.

On May 1, 1952, we wrote Mr. McDonald the following: "The diamond drill program that has now been started, by the Tennessee Copper Company in the Beaverdam Bald area, should add materially to our knowledge of the geology of that area. If the exploration program now initiated by that company results in the finding of copper ore deposits near or adjacent to your leases, that information should be of value not only to you but also to the Government in a re-evaluation of your applications."

We have taken this stand, in the belief that both the Government and the Applicant will be benefited by the information obtained by the Tennessee Copper Company, in diamond drilling this area.

I trust this information will reveal to you the present status of these applications.

Sincerely yours,

(signed) FRANK E. JOHNSON (B.J.H.)

Acting Administrator

J.N.
7-23-52

EWEllis/gla
7-22-52

cc to: Adm. Reading File
✓Dockets
Mr. Ellis
DMEA Field Team, Region VII (2)

FILE COPY
SURNAME:
700

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

MAY 9 1952

Hon. Estes Kefauver
United States Senate
Washington 25, D. C.

Re: Docket No. [illegible]-231 (Copper-[illegible])
Docket No. [illegible]-232 (Copper-[illegible])
Monroe County, Tennessee

Dear Senator Kefauver:

We have your letter of May 5, 1952, concerning the mentioned applications of Mr. T. J. McDonald of the McDonald Drilling Co. of Madisonboro, Kentucky.

We advised Mr. McDonald in our letter of March 20, 1952, that his applications had been denied on the following basis: "The engineers who have studied the subject applications and others who have examined the geology and mineralization of the Greenville and adjacent areas are of the general opinion that although the area does show disseminated pyritic mineralization, the possibility of encountering favorable copper mineralization is rather limited, especially as there are no surface indications of such occurrences."

On April 10, 1952, Mr. McDonald wrote to the Agency requesting that his applications be reconsidered on the basis that the Tennessee Copper Company was starting a diamond drilling program in the Greenville area, which is the district in which the applicant's properties are located.

On May 1, 1952, we wrote Mr. McDonald the following: "The diamond drill program that has now been started by the Tennessee Copper Company in the Greenville Valley area, should add materially to our knowledge of the geology of that area. If the exploration program now initiated by the company results in the finding of copper ore deposits near or adjacent to your leases, that information should be of value not only to you but also to the Government in a re-evaluation of your applications."

We have to rest on this stand, in the belief that both the Government and the applicant will be benefited by the information obtained by the Tennessee Copper Company, in diamond drilling this area.

I trust this information will reveal to you the present status of this application.

Sincerely yours,

C. O. Mittendorf (fw)
Acting Administrator
Defense Mineral Exploration Administration

DN 5-9-52

EKeller/jem 5/8/52
cc to: Adm. Reading File
Docket Ellis Keller Field Team, Reg. VII (2)
Messrs. C.H.Johnson,Rm.3621 Ned Nelson, Rm. 4616 GS

McD

PAT MCCARRAN, NEV., CHAIRMAN
HARLEY M. KILGORE, W. VA.
JAMES O. EASTLAND, MISS.
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WILLIAM E. JENNER, IND.
ARTHUR V. WATKINS, UTAH
ROBERT C. HENDRICKSON, N. J.
J. G. SOURWINE, COUNSEL

cbl

United States Senate

COMMITTEE ON THE JUDICIARY

May 5, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 8 1952

Hon. C. O. Mittendorf
Acting Administrator
Defense Minerals Exploration Administration
Department of the Interior
Washington, D. C.

Dear Mr. Mittendorf:

Mr. T. J. McDonald, McDonald Drilling Co., Middlesboro, Kentucky, or Box 573, Maryville, Tennessee, has written to me regarding his application with the Defense Minerals Administration for a loan to drill four holes on Beaver Dam Bald and Rough Ridge, Tennessee. The Docket No. of these applications are as follows: Docket No. DMEA-2311 (Copper-Sulphur), Docket No. DMEA-2326 (Copper-Sulphur, Monroe County, Tennessee.

I would greatly appreciate every consideration given Mr. McDonald's application and would be grateful for a report in duplicate of the status of his application.

With kind regards,

Sincerely,

Estes Kefauver

700 FILE COPY
SURNAME:

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

MAY 1 1952

Mr. T. J. McDonald
Box 640
Middlesboro, Kentucky

Re: Docket No. DMEA-2311 (Copper-Sulphur)
Docket No. DMEA-2326 (Copper-Sulphur)
Monroe County, Tennessee

Dear Mr. McDonald:

We have your letter of April 14, 1952, concerning the captioned applications and have noted the additional information that you have furnished us in regard to them.

The diamond drill program that has now been started by the Tennessee Copper Company in the Beaver Dam Bald area, should add materially to our knowledge of the geology of that area. If the exploration program now initiated by that company results in the finding of copper ore deposits near or adjacent to your leases, that information should be of value not only to you but also to the Government in a re-evaluation of your applications.

If after the completion of the present drilling program of the Tennessee Copper Company, you have reason to believe that ore was discovered near your property, we shall be pleased to have you file a new application.

Sincerely yours,

Signed

Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Div.
Defense Minerals Exploration
Administration

HFKeller/jem
5/1/52
cc to: Adm. Reading File
Docket DMEA-2311
Docket DMEA-2326
Messrs. CHJohnson, Rm. 3621
Ned Nelson, Rm. 4216 GS
Ellis Keller
Field Team, Reg. VII (2)

50

FILE COPY
SURNAME:
Docket DMRA 2311

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

2 0 19

HFKeller
Ellis
Thayer
Hedges

AIR MAIL

5D

Mr. T. J. McDonald
Box 640
Middlebore, Kentucky

Re: Docket No. DMRA-2311 (Copper-Sulphur)
Docket No. DMRA-2326 (" ")
Monroe County, Tennessee

Dear Mr. McDonald:

After a careful study of the data you furnished in your applications and subsequent correspondence, and the additional data available to this agency, we regret to advise you that your applications have been denied.

The engineers who have studied the subject applications and others who have examined the geology and mineralization of the Benverdam Bald and Little Bald areas are of the general opinion that although the area shows disseminated pyritic mineralization, the possibility of encountering favorable copper mineralization is rather limited, especially as there are no surface indications of such occurrences.

If at any time in the future you obtain additional information that might alter our decision we would be pleased to have you submit it to this agency.

Sincerely yours,

3/20
ce

G. O. Mittenzwei

Acting Administrator
Defense Minerals Exploration
Administration

APPROVED:

For Bureau of Mines

For Geologic Survey

HFKeller/gla 3-17-52
cc to: Adm. Reading File
Dockets DMRA-2311 and DMRA-2326
Messrs. C.H.Johnson, Rm. 3621
Ned Nelson, Rm. 4216 GSA
Ellis
Keller
Region VI (2)

3/12/52 gh

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

~~WASHINGTON 25, D. C.~~

Room 13, Post Office Building
Knoxville, Tennessee

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1952

March 10, 1952

Memorandum

To: Mr. Frank E. Johnson, Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Region VII

Subject: Docket DMEA-2311 (copper)
Docket DMEA-2326 (copper) T. J. McDonald, Monroe County Tennessee

After writing you on March 7, concerning the subject applications, we have learned that Tennessee Copper Co. will soon begin drilling in the Beaverdam Bald area, adjacent to the applicant's tracts. It should be noted that the company is drilling specific anomalies located by magnetometer surveys made some years ago. This information may be of interest in considering the subject applications.

Robert A. Laurence

Robert A. Laurence

P.S.: This information supplied confidentially by the company, & of course should not be revealed to the applicant.
RAL.

3/13/52 glm

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

~~WASHINGTON 25, D.C.~~

Room 13, Post Office Building
Knoxville 02, Tennessee

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

March 7, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA

From: Field Team, Region VII

Subject: DMEA-2311, 2326 (copper). T. J. McDonald

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 10 1952

In reply to your letter of February 29.

Mr. McDonald's proposal to drill two holes in an area where sulphides and gossan occur, without supporting geological or geophysical evidence, is wildcatting, in an area where there may be some promise of possible sulphide ores. If DMEA policy includes assistance of this type, this would be one of the better wildcatting localities, but two holes under these conditions will neither prove nor disprove the possibilities.

It may be worth noting that Tennessee Copper Company has recently applied to the Bureau of Land Management for prospecting permits on a block of National Forest land adjoining and surrounding Mr. McDonald's tracts. We believe the statement that the district has been rather thoroughly prospected by Tennessee Copper Company is incorrect, as we have no information that much work has been done in this particular area.

In May 1943, G. H. Espenshade of the Geological Survey, and H. B. Ewoldt and C. J. Cohen of the Bureau of Mines, examined these prospects. The following is quoted from a memorandum submitted by Mr. Espenshade after that examination:

" Conclusions: The slabby blocks of gossan on Beaverdam Bald and Little Bald are thought to have formed from the weathering of disseminations and thin seams of iron sulphides in black slates. These two knobs at elevations of 4276 and 4,000 feet are remnants of an old erosion surface, and it is believed that gossan would be far more abundant if the source had been a body of massive sulphide minerals.

Reviewed by
DMEA OPERATING COMMITTEE

3-10-52
(date) (HB)

" The reported dip needle anomalies were perhaps due to the pyrrhotite disseminations in the slate. Mineralization in the region appears to have been dissipated throughout the country rocks, instead of being localized. There are no signs of copper among the weathered material or the fresh sulphides.

Recommendations: Additional work on these prospects by the Geological Survey or the Bureau of Mines is not recommended."

We believe the applicant is capable of doing the drilling as set up in the proposal, but he is neither a geologist nor a mining engineer. He has previously drilled deposits in similar terrain for private clients, apparently satisfactorily. His recent unfortunate experience on DMEA-1665X (mica) was due to attempting to drill NX holes with inadequate equipment, and unfamiliarity with drilling pegmatites. We believe he could successfully complete AX holes in the subject area at the proposed cost. It should be noted, however, that his schedule for rental of his own drill rig is far above the usual depreciation allowance.

If it is decided that wildcatting will be approved, we believe a field examination might result in improvement of the drill hole locations, or at least in approval of the proposed locations.

The applications are returned herewith.

Robert A. Laurence

Robert A. Laurence,
Executive Officer, DMEA Field Team
Region VII

W A Beck

Wm. A. Beck, for V. J. Lynch
U. S. Bureau of Mines

FEB 2 2 1962

Mr. T. [illegible]
Box 640
Middlesboro, Kentucky

Dear Mr. [illegible]:

Re: Docket No. A-7311 (Lessor)
Docket No. A-2376 (Lessor)
Harrison County, Tennessee

Reference is made to your applications for assistance in exploring the properties located in Harrison County, Tennessee, Docket Nos. DMA-7311 and DMA-2376.

We have requested further information concerning your applications from Mr. Robert S. Lawrence, Exploration Officer, DMA Field Team, Region VII, Room 13, Post Office Building, Knoxville, Ohio, Tennessee. On receipt of this information we will advise you of our decisions with respect to your two applications.

Sincerely yours,

C. O. Mittendorf

Acting Administrator

MJJohnson/hb

Copy to: Adm. Pending File
Docket
C. H. Johnson, Rm. 3621
Fred Nelson, Rm. 4216 GSA
✓Mr. Willis
Mr. Keller
Field Team, Region VII
DMA Operating Committee

FILE COPY
700 SURNAME:

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

FEB 29 1952

AIR MAIL

Mr. Robert A. Laurence
Executive Officer, Region VII
DMEA Field Team
Room 13
Post Office Building
Knoxville, 01, Tennessee

Re: Docket DMEA-2311 (Copper)
Docket DMEA-2326 (Copper)
A. J. McDonald
Monroe County, Tennessee

Dear Mr. Laurence:

We are enclosing one copy each of the subject applications and the supporting evidence.

From correspondence with the applicant it is quite evident that he would be unable to furnish the technical data that we would need to be able to decide on the merits of either application. We believe that one of your field engineers may have definite information concerning not only the area that the applicant proposes to prospect but also the applicant himself, which might influence our decision on the applications. We do not believe that a Field Team examination is warranted.

From the information at our disposal it appears that the applicant has no definite objective, other than to drill a formation containing disseminated iron sulphides in a district which has been rather thoroughly prospected by the Tennessee Copper Company.

We do not believe that either of these applications should be approved but before informing the applicant of our decision we wish to obtain any additional information that is pertinent to the subject which you might have at your disposal.

Sincerely yours,

cc
2/29

(signed) FRANK E. JOHNSON
(Ch)

Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED: W. E. Hedges (Ch)
Member, Bureau of Mines

L P Shazer (Ch)
Member, Geological Survey

HFKeller/jem 2/15/52
cc to: Adm. Reading File
Docket DMEA-2311
Messrs. Johnson, CH Rm. 3621
Nelson, Ned Rm. 4216 GS
Ellis
Keller

Field Team, Region VII

FILE COPY
SURNAME:

FE Johnson

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

FEB 2 8 1952

Mr. T. J. McDonald
Box 640
Middlesboro, Kentucky

Dear Mr. McDonald:

Re: Docket DMEA-2311 (Copper)
Docket DMEA-2326 (Copper)
Monroe County, Tennessee

Reference is made to your applications for assistance in exploring the properties located in Monroe County, Tennessee, Docket Nos. DMEA-2311 and DMEA-2326.

We have requested further information concerning your applications from Mr. Robert A. Laurence, Executive Officer, DMEA Field Team, Region VII, Room 13, Post Office Building, Knoxville, 01, Tennessee. On receipt of this information we will advise you of our decisions with respect to your two applications.

Sincerely yours,

C. O. Mittenderf (for) 2/29

Acting Administrator

FEJohnson/hb

Copy to: Adm. Reading File
✓Docket (Dmea 2311)
C. H. Johnson, Rm. 3621
Ned Nelson, Rm. 4216 GSA
Mr. Ellis
Mr. Keller
Field Team, Region VII
DMEA Operating Committee

AIR MAIL

JAN 15 1952

Mr. T. J. McDonald
Box 640
Middlesboro, Kentucky

Re: Docket DMA-2311
(Copper & Sulphur)
Monroe County, Tennessee

Dear Mr. McDonald:

Your subject application for aid on an exploration project to the amount of $4,950.00 has been reviewed.

To permit us to decide on the merits of your application, please furnish us with the following information:

1. Amount and location of any recent exploration work.

2. Assays of any samples taken along the vein or in the exploration work.

3. Detailed plan showing the location, strike, and dip of the proposed diamond drill holes.

4. Show on this plan the geological data that would influence the selection of the diamond drill sites.

When we have received this information we assure we will give your application further study.

Sincerely yours,

-S-

Ernest B. Ellis, Acting Chief
Rare & Rare Metals Division
Defense Minerals Exploration
Administration

HFKeller/jem 1-10-52
cc to: Adm. Reading File
Docket
Messrs. Johnson, C.H. Rm. 3621
Nelson, Ned Rm. 4216 G.A.
Ellis
Keller

Field Team, Reg. VII (2)

DMEA-2326

Mineral Prospecting *Assaying* *Geological Reports*

McDONALD DRILLING COMPANY, INC.

Diamond Core Drilling

MIDDLESBORO, KY.

DEPT. OF THE INTERIOR RECEIVED JAN 14 1952 PETROLEUM ADMIN. FOR DEFENSE

January 10, 1952

P. O. Box 640
Middlesboro, Kentucky

Re: T. J. McDonald
DMEA-2311

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

Gentlemen:

I am enclosing as application for a loan to prospect for copper by Diamond core drilling on 2 tracts of land located at the head waters of Tellico River in Monroe County, Tennessee.

These tracts lie along the Tennessee state line and are in the same locality as the tracts on which we filed an application for a loan on December 27, 1951 (see above file number). These tracts are crossed by what is locally known as the Fontana Lead. I have no geological map of the Murphy Sheet available, however, I have traced on a topographic map this lead in blue. I am enclosing this map with the application, also a copy of the lease. There has been considerable surface prospecting done on this lead between Beaver Dam Bald and the head waters of Rough Creek. Gossan and Pyrite has been found in many places on these tracts.

The map which I mailed you when I made the former application shows the location of Block #1 and Block #4.

I trust that you will give my application favorable consideration. I am

Yours very truly,

T. J. McDonald

T. J. McDonald

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C. JAN 14 3 33 PM '52

Mineral Prospecting *Assaying* *Geological Reports*

McDONALD DRILLING COMPANY, INC.

Diamond Core Drilling

MIDDLESBORO, KY.

DEPT. OF THE INTERIOR
RECEIVED
JAN 14 1952
PETROLEUM ADMIN. FOR DEFENSE

Box 640

January 10th 1952

Defence Minerals Administration,
U. S. Dept. of the Interior,
Washington 25, D. C.

Gentlemen; I have been in doubt of the advisiability of executing the subordination of agreement inasmuch as the land is owned by the U. S. Government, being a part of the Cherokee National Forest, in which these tracts are located, however I am enclosing the agreement from the Lessors, if you desire additional copies of this agreement, please advise.

Your's Very Truly,

T. J. McDonald

T. J. McDonald

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.
JAN 14 3 34 PM '52

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

January 7, 1952

Memorandum

To: Mr. E. Wm. Ellis

From: Mr. N. E. Nelson

Subject: DMEA 2311, T. J. McDonald. Copper and Sulphur, Monroe County, Tennessee.

Summary This application should be referred to the field team unless information from the applicant confirms Mr. Espenshade's recommendation, viz: "Additional work on these prospects by the Geological Survey or Bureau of Mines is not recommended". May 28, 1943.

Comment Writing of this general area in a report dated May 28, 1943, Mr. G. H. Espenshade said:

Preliminary Report

Beaverdam Bald Prospect, Tennessee - North Carolina

"Some prospects for copper on Beaverdam Bald and nearby Little Bald were visited on May 20, 1943, by the writer in company with H. B. Ewoldt and C. J. Cohen of the Bureau of Mines. The prospects lie in the Cherokee National Forest, along the ridge which forms the boundary between Cherokee County, N. C. and Monroe County, Tenn. Beaverday Bald is situated on the south edge of the Haw Knob quadrangle. The mineral rights to the prospects are said to be held by T. J. McDonald, Coker Creek, Tenn.(who has done much of the prospecting), C. H. Sterling, Marysville, Tenn., and D. B. Burns, Asheville, N. C.

"On Beaverdam Bald a prospect pit 6 feet deep has been sunk by the side of the road 100 yards northeast of the lookout tower. Fine grained pyrite or marcasite with a porous concretionary structure occurs abundantly in sandy layers in the slate. Blocks of reddish-orange to yellow-brown gossan with a platy structure and thickness of no more than several inches are scattered along the road. No malachite stains were observed in the pit and no chalcopyrite or other copper minerals were seen among the fresh sulphide minerals.

"About half a mile to the east graphitic slates with thin sandy layers carrying quartz and feldspar grains are well exposed along the forest road. Pyrrhotite is abundantly disseminated in the thin sandy beds. The rock surfaces are coated with the yellow and dark brown stains commonly associated with the weathering of rocks

carrying disseminated iron sulphides. No signs of copper minerals were observed here.

"On little Bald, one mile east of Beaverdam Bald, thin slabby blocks of gossan are found in the weathered black slate in the road, and are scattered over the ground surface for several hundred feet to the northeast. The gossan is similar to that on Beaverdam Bald.

"East along the road to Tellico River and along the road down the river, slatey rocks coated with dark brown and yellow stains derived from the weathering of disseminated iron sulphides are frequently observed from the car.

"According to T. J. McDonald an examination of a strip of land in Cherokee and Graham Counties, N. C. lying between Ducktown and Fontana was made by the Tennessee Copper Co. a number of years ago. Dip needle surveys were made, and some of the strongest indications were said to be in the vicinity of Beaverdam Bald.

"Conclusions: The slabby blocks of gossan on Beaverdam Bald and Little Bald are thought to have formed from the weathering of disseminations and thin seams of iron sulphides in black slates. These two knobs at elevations of 4276 and 4000 feet are remnants of an old erosion surface, and it is believed that gossan would be far more abundant if the source had been a body of massive sulphide minerals.

"The reported dip needle anomalies were perhaps due to the pyrrhotite disseminations in the slate. Mineralization in the region appears to have been dissipated throughout the country rocks, instead of being localized. There are no signs of copper among the weathered material or the fresh sulphides.

Recommendations: Additional work on these prospects by the Geological Survey or the Bureau of Mines is not recommended."

Mr. Espenshade's report covers the area in a very general way and it is not possible to tie it in with the 3 particular parcels of land on each of which Mr. McDonald plans to drill one hole. Inquiry of Mr. McDonald, who was with Mr. Espenshade in '43, might secure information that would bear out Mr. Espenshade's conclusions, especially if nothing new has been uncovered in the meantime.

Otherwise referral to the field team is indicated. Knoxville men may know enough about the proposal and the applicant to pass judgment on the application without an actual examination.

N. E. Nelson

Ned E. Nelson
Geologist

2/13/5 v gla

McDONALD DRILLING COMPANY
INCORPORATED

Diamond Core Drilling

MIDDLESBORO, KY.

February 11, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 13 1952

Defense Minerals Administration
Washington 25, D. C.

Re: Docket DMEA-2311
(Copper & Sulphur)
Monroe County, Tenn.

Gentlemen:

I have your letter of January 15, 1952, on my return to Middlesboro after an absence of over thirty days. In reference to the questions in which you ask, relative to the tracts on which I made application for the loan:

1. & 2. There has been no recent exploration work done on these different tracts. However, there was considerable work done some 6 or 8 years ago. There was some tunnelling done along the Fontana Lead which crosses these tracts. There was a shaft sunk on Tract #1 to a considerable depth, also a pit sunk on Tract #4. I had some essays made several years ago for copper. These essays showed that copper runs about 2%.

3. The maps which I mailed with the application indicate the location of the different drill holes. These holes will be drilled on about a 40% angle and at right angles to the strike of the vein which runs about North 61 East.

4. I have been guided principally in the selection of these sites by the presence of Gossan, also by magnetometer readings.

If I can give you any further information relative to this matter, please advise me. I am

Yours very truly,

T. J. McDonald

T. J. McDonald

TJM:ng

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

January 9, 1952

Memorandum

To: E. W. Ellis, Rare and Miscellaneous Metals Branch, DMEA

From: C. H. Johnson

Subject: DMEA 2311 - T. J. McDonald

This applicant has furnished no description whatsoever of the prospect itself. I believe he should be asked to give you a description of it in terms of length and width of the mineralized outcrop, together with analyses of samples. He should also state what, if any work, such as trenching or test fitting has been done to determine the surface extent of the oreshoot or gossan.

C. H. Johnson
C. H. Johnson, Chief
Base Metals Branch

CHJohnson/ht

Copy to: Mr. Nelson, Rm.4216 GSA Bldg.
Minerals Division
Base Metals Branch
Files

IN REPLY REFER TO:

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

January 7, 1952

Memorandum

To: Mr. E. Wm. Ellis

From: Mr. N. E. Nelson

Subject: DMEA 2311, T. J. McDonald. Copper and Sulphur, Monroe County, Tennessee.

Summary This application should be referred to the field team unless information from the applicant confirms Mr. Espenshade's recommendation, viz: "Additional work on these prospects by the Geological Survey or Bureau of Mines is not recommended". May 28, 1943.

Comment Writing of this general area in a report dated May 28, 1943, Mr. G. H. Espenshade said:

Preliminary Report

Beaverdam Bald Prospect, Tennessee - North Carolina

"Some prospects for copper on Beaverdam Bald and nearby Little Bald were visited on May 20, 1943, by the writer in company with H. B. Ewoldt and C. J. Cohen of the Bureau of Mines. The prospects lie in the Cherokee National Forest, along the ridge which forms the boundary between Cherokee County, N. C. and Monroe County, Tenn. Beaverday Bald is situated on the south edge of the Haw Knob quadrangle. The mineral rights to the prospects are said to be held by T. J. McDonald, Coker Creek, Tenn.(who has done much of the prospecting), C. H. Sterling, Marysville, Tenn., and D. B. Burns, Asheville, N. C.

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"Conclusions: The slabby blocks of gossan on Beaverdam Bald and Little Bald are thought to have formed from the weathering of disseminations and thin seams of iron sulphides in black slates. These two knobs at elevations of 4276 and 4000 feet are remnants of an old erosion surface, and it is believed that gossan would be far more abundant if the source had been a body of massive sulphide minerals.

"The reported dip needle anomalies were perhaps due to the pyrrhotite disseminations in the slate. Mineralization in the region appears to have been dissipated throughout the country rocks, instead of being localized. There are no signs of copper among the weathered material or the fresh sulphides.

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Otherwise referral to the field team is indicated. Knoxville men may know enough about the proposal and the applicant to pass judgment on the application without an actual examination.

N. E. Nelson

Ned E. Nelson
Geologist

700

FILE COPY
SURNAME:

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

HKeller
Ellis
Mutt

AIR MAIL

JAN 15 1952

Mr. T. J. McDonald
Box 640
Middlesboro, Kentucky

Re: Docket DMA-2311
(Copper & Sulphur)
Monroe County, Tennessee

Dear Mr. McDonald:

Your subject application for aid on an exploration project to the amount of $4,950.00 has been reviewed.

To permit us to decide on the merits of your application, please furnish us with the following information:

1. Amount and location of any recent exploration work.

2. Assays of any samples taken along the vein or in the exploration work.

3. Detailed plan showing the location, strike, and dip of the proposed diamond drill holes.

4. Show on this plan the geological data that would influence the selection of the diamond drill sites.

When we have received this information be assured we will give your application further study.

Sincerely yours,

Signed S.N. 1-15-52

Ernest M. Ellis, Acting Chief
Rare & Rec. Metals Division
Defense Minerals Exploration
Administration

HFKeller/jem 1-10-52
cc to: Adm. Reading File
Docket
Messrs. Johnson, C.H. Rm. 3621
Nelson, Ned Rm. 4216 G.S.
Ellis
Keller

Field Team, Reg. VII (2)

Subject: DMEA-2311
Re: Exploration Loan

Mr. T. J. McDonald
Box 640,
Middlesboro, Kentucky

This will acknowledge receipt of your application dated December 27, 1951 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2311 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-2311 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams,
Acting Administrative Officer

7862

McDONALD DRILLING COMPANY
INCORPORATED
Diamond Core Drilling
MIDDLESBORO, KY.

P.O. Box 640
Middlesboro, Kentucky
December 27, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 - 1952

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

Gentlemen:

I am enclosing an application for a loan to prospect for copper, 3 tracts of land located at the head waters of Tellico River in Monroe County, Tennessee.

These tracts are located on what is commonly known as the Fontana Lead running from Ducktown Basin to Fontana, North Carolina. There has been more or less surface prospecting done in this section for the past several years. Gossan and Pyrite have been found in many places between Beaver Dam Bald and Grassy Top. I have made magnetometer surveys of this section. These surveys indicate that there is considerable mineralization in this section.

I trust that you will give my application favorable consideration. I am

Yours very truly,

T. J. McDonald

T. J. McDonald

TJM:ng

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. Dmed-2311

Date received 1/2/52

Participation

DEPARTMENT OF THE INTERIOR
Defense Mineral Administration
RECEIVED
JAN 2 - 1952

T. J. McDonald
Box 640
Middlesboro, Kentucky

Name and address of applicant

Date Dec. 27, 1951

FILL IN THIS BLOCK

Date of application 12/27/51

Estimated cost $1950.00

Mineral or metal Copper & Sulphur

Percentage of Government participation 50%

Location of mine Head of Tellico River
Monroe County, Tennessee

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 1 0 1952

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

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

    NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*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.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

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.

(Name of company)

By T. J. McDonald
(Signature of authorized official)

Sept. 27 - 1951
(Date)

(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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Questions: Form MF-103 U. S. DEPT OF INTERIOR, Defense Minerals Adm.
Re: T. J. McDonald

1. Individual

2. Not applicable

3. Not applicable

4. (a) I have been doing contract core drilling for the past 15 years in many different sections of the south. Have been doing prospecting work, surface exploration, such as tunnelling, cross-cutting etc. since 1930 mostly in the southern Applachains. In the early 20's I did considerable prospecting in South America, San Juan River in Columbia, as well as Panama.

5. Lessee

6. None

7. See attached lease.

8. Financial Statement of

T. J. McDonald

Dec. 1st 1951	Cash on hand and in Banks,	$ 5,000.00
	Drilling Equipment, Including tools, & etc.	10,000.00
	Real Estate	750.00
	Liabilities	none

9. Will use my own drilling equipment which will cover my share of cost. Will be my own driller.

10. (a) (b) refer to map and attached description.

11. Cherokee National Forest, upper Tellico River

12. 25 miles east of Tellico Plains, Tenn.

13. Springs and streams within 1,000 feet of drilling sites. no power to be used.

14. None

15. Plant would have to be erected on site to concentrate material. Concentrates to be trucked to Ducktown, Tennessee, approximately 60 miles.

16. (a) There has been more or less surface prospecting on this Fontana Lead between Beaver Dam Bald and Grassy Top for the past 25 years. Magnetometer surveys have been made

of this section many times by different geologists and engineers. These surveys indicate favorable conditions for deposits of copper. The Civilian Conservation Corps built a road from Tellico River to Beaver Dam Bald using Bull-dozer equipment. This operation uncovered more or less copper in the slate wherever the road crossed the Fontana Lead. It also uncovered some Gossan in many places. There was a pit or shaft sunk close to Beaver Dam Bald many years ago showing a deposit of Pyrite.

(b) No development near this section
(c) Have no private reports on this particular section.

17. No production.

18. No operating.

19.

20. Copper and Iron sulphites (Ducktown Type Ore Body)

21. 3 AX diamond drill holes to a depth of 300 feet each, a total of 900 feet.
It is estimated that this work can be completed within six months. This length of time may be necessary due to the rugged terrian, altitude, and probably bad winter weather.

22. See map Murphy Quadrangle, also Murphy folio. Some of the slate veins have been traced on the enclosed map from the Murphy Folio. Magnatomitor surveys indicate that this is the most favorable section for locating copper between Ducktown and Fontana, North Carolina. I have made a curvey personally of this Lead or vein all the way from Ducktown to Fontana.

23.

(a)	1 drill helper @ $10.00 per day 60 days	$600.00
(b)	1 supervisor who will do the drilling (applicant) @ $16.00 per day	960.00
(c)	None	
(d)	1 Tool House	300.00
(e)	None	
(f)	None)	
(g)	Diamond drill & 2 pumps @ 25.00 per day for 60 days	1500.00
(h)	Drill bits, core boxes, drilling, accessories, etc.	840.00
(i)	Drill Transportation, gas & oil, analysis	300.00
	1- Road Building	300.00
	2- Depreciation on Equipment	150.00
		$ 4950.00

24. Drilling can be started within 2 weeks after contract is approved and it is estimated that 300 feet of drilling can be done per month unless delayed by inclement weather during the winter months.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. Dmea - 2311

Date received 1/2/52

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 - 1952

T. J. McDonald
Box 640
Middlesboro, Kentucky

Name and address of applicant

Date 12/27/51

FILL IN THIS BLOCK

Date of application 12/27/51

Estimated cost $14950.00

Mineral or metal Copper & Sulphur

Percentage of Government participation 50%

Location of mine Head of Tellico River
Monroe County, Tennessee

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

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THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
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*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
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6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
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NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

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State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

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    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
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	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

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.

(Name of company)

By J. J. McDonald
(Signature of authorized official)

Sept 27th 1951
(Date)

(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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Questions: Form MF-[illegible]3 U. S. DEPT OF INTERIOR, [illegible]efense Minerals Adm.
Re: T. J. McDonald

1. Individual

2. Not applicable

3. Not applicable

4. (a) I have been doing contract core drilling for the past 15 years In many different sections of the south. Have been doing prospecting work, surface exploration, such as tunnelling, cross-cutting etc. since 1930 mostly in the southern Applachains. In the early 20's I did considerable prospecting in South America, San Juan River in Columbia, as well as Panama.

5. Lessee

6. None

7. See attached Lease.

8. Financial Statement of

T. J. McDonald

Dec. 1st 1951	Cash on hand and in Banks	$ 5,000.00
	Drilling Equipment, Including tools, etc.	10,000.00
	Real Estate	750.00
	Liabilities	None

9. Will use my own drilling equipment which will cover my share of cost. Will be my own driller.

10. (a) (b) refer to map and attached description.

11. Cherokee N ational Forest, upper Tellico River

12. 25 miles east of Tellico Plains, Tenn.

13. Springs and streams within 1,000 feet of drilling sites. No power to be used.

14. None

15. Plant would have to be erected on site to concentrate material. Concentrates to be trucked to Ducktown, Tennessee, approximately 60 miles.

16. (a) There has been more or less surface prospecting on this Fontana Lead between Beaver Dam Bald and Grassy Top for the past 25 years. Magnetometor surverys have been made

of this section many times by different geologists and engineers. These surveys indicate favorable conditions for deposits of copper. The Civilian Conservation Corps built a road from Tellico River to Beaver Dam Bald using Bull-dozer equipment. This operation uncovered more or less copper in the slate wherever the road crossed the Fontana Lead. It also uncovered some Gossan in many places. There was a pit or shaft sunk close to Beaver Dam Bald many years ago showing a deposit of Pyrite.

(b) No development near this section
(c) Have no private reports on this particular section.

17. No production.

18. No operating.

19.

20. Copper and Iron sulphites (Ducktown Type Ore Body)

21. 3 AX diamond drill holes to a depth of 300 feet each, a total of 900 feet.
It is estimated that this work can be completed within six months. This length of time may be necessary due to the rugged terrian, altitude, and probably bad winter weather.

22. See map Murphy Quadrangle, also Murphy folio. Some of the slate veins have been traced on the enclosed map from the Murphy Folio. Magnetomitor surveys indicate that this is the most favorable section for locating copper between Ducktown and Fontana, North Carolina. I have made a survey personally of this Lead or vein all the way from Ducktown to Fontana.

23.

(a)	1 drill helper @ $10.00 per day 60 days	$600.00
(b)	1 supervisor who will do the drilling (applicant) @ $16.00 per day	960.00
(c)	None	
(d)	1 Tool House	300.00
(e)	None	
(f)	None	
(g)	Diamond drill & 2 pumps @ 25.00 per day for 60 days	1500.00
(h)	Drill bits, core boxes, drilling, accessories, etc.	840.00
(i)	Drill Transportation, gas & oil, analysis	300.00
	1-Road Building	300.00
	2-Depreciation on Equipment	150.00
		$ 4950.00

24. Drilling can be started within 2 weeks after contract is approved and it is estimated that 300 feet of drilling can be done per month unless delayed by inclement weather during the winter months.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. Dmea-2311

Date received 1/2/52

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 - 1952

T. J. McDonald
Box 640
Middlesboro, Kentucky

Name and address of applicant

Date ~~Dec. 27, 1951~~

FILL IN THIS BLOCK

Date of application 12/27/51

Estimated cost $4950.00

Mineral or metal Copper & Sulphur

Percentage of Government participation 50%

Location of mine Head of Tellico River
Monroe County, Tennessee

Date of filing MF-100

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

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

    NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*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.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

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

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

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.

(Name of company)	By T. J. McDonald (Signature of authorized official)
Dec. 27th 1951 (Date)	(Title)

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Re: T. J. McDonald, Box 640, Middlesboro, Kentucky

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MEMORANDUM AGREEMENT

THIS AGREEMENT made and entered into on this the 26th day of December, 1951 by and between (Mrs. H. M. Boyd / Dana B. Burns of (New York / North Carolina Of (Buncombe County, State of hereinafter referred to as the parties of the first part, and T. J. McDONALD, d|b|a| McDONALD DRILLING COMPANY, of Middlesboro, Kentucky, hereinafter referred to as the party of the second part.

W I T N E S S E T H :

WHEREAS, the parties of the first part are the owners of mineral rights & mining privileges on a certain tract of land located and situated in the ..... Civil District of Monroe County, State of Tennessee, containing approximately 500 acres, more or less, and more particularly described as follows:

For a complete description reference is made to a deed from Tellico River Lumber Company to Dana B. Burns and Mrs. H. M. Boyd dated May 1, 1928 and recorded in the office of the Register of Deeds in Monroe County, Tennessee in Deed Book 39 on page 457.

And, WHEREAS, the parties of the first part and the party of the second part have reason to believe that the above described lands contain copper and oher associated minerals.

NOW, THEREFORE, in consideration of One ($1.00) Dollar in hand paid by the party of the second part, the receipt of which is hereby acknowledged, the parties of the first part hereby grant, convey and ransfer unto the party of the second part, his heirs and assigns, the following sole and exclusive rights, privileges and options, for a term of 3 years from the date hereof, as follows:

FIRST: The rights and privileges to enter upon the above described lands and explore thereon for any copper and all associate minerals, together with the rights and privileges to dig or excavate pits, mine or drill holes thereon and or therein, together with the right to erect or place on said lands such structures, machinery and equipment as the party of the second part may deem necessary to effectively carry on said operations, together with all necessary rights-of-way for ingress and egress; and

SECOND: The right, privilege and option, in the event cooper and or other associated minerals are found to exist in or upon said lands in commercial quantities, to lease the mining rights for any copper and all associated minerals for a period of 50 years from the date of the lease, with option to renew for similar term upon the same terms and conditions, which lease shall provide that the party of the second part, his heirs and assigns, shall pay to the parties of the first part, their heirs and assigns, a royalty of 5% plus 1% additional for each % increase on ore assaying above 5% per ton for all copper and or associated minerals removed from said lands during any calendar month, which royalties shall be due and payable on the 10th day of the following month. The parties of the first part shall receive monthly reports of alltonnages removed from the said premises and shall have the right to inspect the books and records of the party of the second part, and if any royalty remain unpaid aftere demand when due for over ninety days the parties of the first part have the right to cancel said lease.

The party of the second part shall have the right to cancel said lease at any time upon giving the parties of the first part 90 day's notice and paying all royalties then accrued.

The party of the second part shall be granted all rights and easements for rights-of-way, roads, water and power lines as may be necessary to such mining operation, and shall not be liable for any damage to the premises from such operation; and he shall retain title and right of possession of all personalty, machinery and equipment on the premises at termination or cancellation of said lease.

The parties of the first part, if requested by the party of the second part within 180 days from the date hereof, will execute a formal option to the party of the second part containing the same provisions as herein incorporated.

The parties of the first part for themselves, their heirs and assigns, covenant with the party of the second part that they are the true and lawful owners of said real estate, and that the same is free from all encumbrances, and that they will forever warrant and defend the title thereto against the lawful claims and demands of all persons whomsoever.

IN TESTIMONY WHEREOF the parties of the first part have hereunto set their hands on this the day and date first above written.

Mrs H. M. Boyd

Dana B. Burns

WITNESSES TO ABOVE SIGNATURES:

George L. Dempster
Witness

J. Royce Dodge
Witness

Re: T. J. McDonald, Box 640, Middlesboro, Kentucky

DESCRIPTION OF TRACTS #3, #4, and #5

Tract #3

Beginning at a red oak on Rough Ridge 300 ft. E. of old hacking and running S. 5 E. 2951.61 ft. to a large hemlock and pointers on bank of small run, a branch of Rough Ridge Creek; thence N. 85 E. 2951.61 ft. to a chestnut and pointers; thence N. 5 W. 2951.61 ft. to a stake; thence S. 85 W. 2951.61 ft. to the beginning, containing 200 acres.

Tract #4

Beginning at a dry chestnut on State Line Ridge and running N. 41 W. 1900 ft. to a red oak and pointers 500 ft. N. W. of Grassy Ridge; thence N. 49 E. 2951.61 ft. to a stake, thence S. 41 E. about 1960 feet to an intersection of State Line thence with the State Line to the beginning, containing 165 acres more or less. The North one-half of this tract - 82½ acres.

Tract #5

Beginning at a red oak in a low gap on a ridge above Sherman Clayton's house and running N. 50 W. 2951.61 ft. to a locust at the head of Davis' Cove; thence N. 40 E. 2951.61 ft. to a double chestnut; thence S. 50 E. 2951.61 ft. to a stake; thence S. 40 W. 2951.61 ft. to the beginning, containing 200 acres.

Total Acreage - 482½ acrea.

For a complete description reference is made to a deed from Tellico River Lumber Company to Dana B. Burns and Mrs. H. M. Boyd dated May 1, 1928 and recorded in the office of the Register of Deeds in Monroe County, Tennessee in Deed Book 39 on page 457.

MF-202

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner of Mineral Rights & Mining Privileges on ~~in fee simple of~~ that certain parcel of ground in the county of Monroe, State of Tennessee, described in a Deed from Tellico River Lumber Co. to Dana B. Burns & Mrs. H. M. Boyd & Recorded in Monroe County Tenn. Deed Book 39 on Page 457 to which Reference is made, & also in a certain Exploration Project Contract dated _____, 195__, between

_____,

the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated _____

_____, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

The undersigned further agrees that if said leasehold interest should be surrendered or if said lease should terminate at any time prior to the expiration of the rights of the United States of America under said Exploration Project Contract, the undersigned shall assume and does hereby assume all of the obligations of the Lessee under said Exploration Project Contract to make repayment to the United States of America according to the terms of said contract; and

The undersigned agrees to commit no act, nor assert any claim under judicial process or otherwise that may contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this 26th day of December, 195.1.

Dana B. Burns

Mrs H. M. Boyd

U. S. GOVERNMENT PRINTING OFFICE 16—64582-1

MF-202

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Dana B. Burns
Mrs H. M. Boyd

U. S. GOVERNMENT PRINTING OFFICE 16—64582-1

DMEA- 2311

MAP
Showing Prospects Along
ROUGH RIDGE COPPER LEAD
On Mineral Properties Of
C. F. HERFORD & G. M. BURNS
Situated in
MONROE COUNTY TENNESSEE
Scale 2000 ft=1inch
May 8, 1928
D.B. Burns Engineer

UNITED STAT[ES]
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

TENNESSEE – NORTH CAROLINA
MURPHY QUADRANGLE
(THIRTY MINUTE)

Henry Gannett, Chief Topographer.
Gilbert Thompson, Chief Geographer.
Triangulation by S.S.Gannett.
Topography by F.M.Pearson, Chas.M.Yeates and Chas.E.Cooke.
Surveyed in 1884-1885 and 1892.
Partial revision in 1911-1912 by J.I.Gayetty.

DMEA-2311

Scale $\frac{1}{125000}$

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Contour interval 100 feet.
Datum is mean sea level.

Maps from later and more detailed surveys are available of the east half, Haw Knob and Fowler Bend quadrangles, scale 1: 62,500, contour interval 50 feet, and the Ducktown Mining District, scale 1: 36,000, contour interval 20 feet.

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1914.

Proposed ~~done~~ Drill Holes – 300 ft. Deep.
No 1
" 2
" 3

See Murphy Folio

Edition of Sep.1914, reprinted 1942
Polyconic projection.
Surveyed by reconnaissance methods

MURPHY, TENN.–N.C.
(THIRTY MINUTE)

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

The United States Geological Survey is making a series of standard topographic maps to cover the United States. This work has been in progress since 1882, and the published maps cover more than 47 percent of the country, exclusive of outlying possessions.

The maps are published on sheets that measure about 16½ by 20 inches. Under the general plan adopted the country is divided into quadrangles bounded by parallels of latitude and meridians of longitude. These quadrangles are mapped on different scales, the scale selected for each map being that which is best adapted to general use in the development of the country, and consequently, though the standard maps are of nearly uniform size, the areas that they represent are of different sizes. On the lower margin of each map are printed graphic scales showing distances in feet, meters, miles, and kilometers. In addition, the scale of the map is shown by a fraction expressing a fixed ratio between linear measurements on the map and corresponding distances on the ground. For example, the scale $\frac{1}{62,500}$ means that 1 unit on the map (such as 1 inch, 1 foot, or 1 meter) represents 62,500 of the same units on the earth's surface.

Although some areas are surveyed and some maps are compiled and published on special scales for special purposes, the standard topographic surveys and the resulting maps have for many years been of three types, differentiated as follows:

1. Surveys of areas in which there are problems of great public importance—relating, for example, to mineral development, irrigation, or reclamation of swamp areas—are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{31,680}$ (1 inch = one-half mile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet), with a contour interval of 1 to 100 feet, according to the relief of the particular area mapped.

2. Surveys of areas in which there are problems of average public importance, such as most of the basin of the Mississippi and its tributaries, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile), with a contour interval of 10 to 100 feet.

3. Surveys of areas in which the problems are of minor public importance, such as much of the mountain or desert region of Arizona or New Mexico, and the high mountain area of the northwest, are made with sufficient detail to be used in the publication of maps on a scale of $\frac{1}{125,000}$ (1 inch = nearly 2 miles) or $\frac{1}{250,000}$ (1 inch = nearly 4 miles), with a contour interval of 20 to 250 feet.

The aerial camera is now being used in mapping. From the information recorded on the photographs, planimetric maps, which show only drainage and culture, have been made for some areas in the United States. By the use of stereoscopic plotting apparatus, aerial photographs are utilized also in the making of the regular topographic maps, which show relief as well as drainage and culture.

A topographic survey of Alaska has been in progress since 1898, and nearly 44 percent of its area has now been mapped. About 15 percent of the Territory has been covered by maps on a scale of $\frac{1}{500,000}$ (1 inch = nearly 8 miles). For most of the remainder of the area surveyed the maps published are on a scale of $\frac{1}{250,000}$ (1 inch = nearly 4 miles). For some areas of particular economic importance, covering about 4,300 square miles, the maps published are on a scale of $\frac{1}{62,500}$ (1 inch = nearly 1 mile) or larger. In addition to the area covered by topographic maps, about 11,300 square miles of southeastern Alaska has been covered by planimetric maps on scales of $\frac{1}{125,000}$ and $\frac{1}{250,000}$.

The Hawaiian Islands have been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

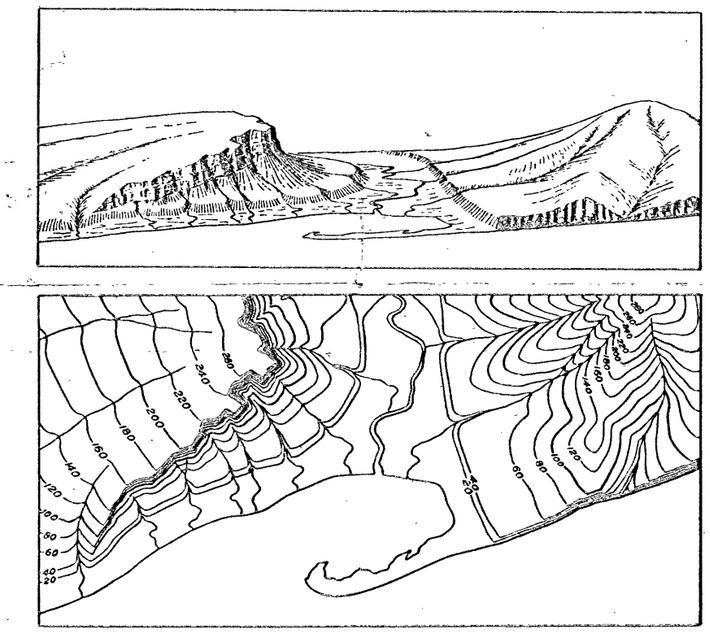
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{30,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently sloping spurs separated by ravines. The spurs are truncated at their lower ends by a sea cliff. The hill at the left terminates abruptly at the valley in a steep scarp, from which it slopes gradually away and forms an inclined tableland that is traversed by a few shallow gullies. On the map each of these features is represented, directly beneath its position in the sketch, by contour lines.

The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval differs according to the topography of the area mapped: in a flat country it may be as small as 1 foot; in a mountainous region it may be as great as 250 feet. In order that the contours may be read more easily certain contour lines, every fourth or fifth, are made heavier than the others and are accompanied by figures showing altitude. The heights of many points—such as road intersections, summits, surfaces of lakes, and benchmarks—are also given on the map in figures, which show altitudes to the nearest foot only. More precise figures for the altitudes of benchmarks are given in the Geological Survey's bulletins on spirit leveling. The geodetic coordinates of triangulation and transit-traverse stations are also published in bulletins.

Lettering and the works of man are shown in black. Boundaries, such as those of a State, county, city, land grant, township, or reservation, are shown by continuous or broken lines of different kinds and weights. Public roads suitable for motor travel the greater part of the year are shown by solid double lines; poor public roads and private roads by dashed double lines; trails by dashed single lines. Additional public road classification if available is shown by red overprint.

Each quadrangle is designated by the name of a city, town, or prominent natural feature within it, and on the margins of the map are printed the names of adjoining quadrangles of which maps have been published. More than 4,100 quadrangles in the United States have been surveyed, and maps of them similar to the one on the other side of this sheet have been published.

Geologic maps of some of the areas shown on the topographic maps have been published in the form of folios. Each folio includes maps showing the topography, geology, underground structure, and mineral deposits of the area mapped, and several pages of descriptive text. The text explains the maps and describes the topographic and geologic features of the country and its mineral products. Two hundred twenty-five folios have been published.

Index maps of each State and of Alaska and Hawaii showing the areas covered by topographic maps and geologic folios published by the United States Geological Survey may be obtained free. Copies of the standard topographic maps may be obtained for 10 cents each; some special maps are sold at different prices. A discount of 40 percent is allowed on an order amounting to $5 or more at the retail price. The discount is allowed on an order for maps alone, either of one kind or in any assortment, or for maps together with geologic folios. The geologic folios are sold for 25 cents or more each, the price depending on the size of the folio. A circular describing the folios will be sent on request.

Applications for maps or folios should be accompanied by cash, draft, or money order (not postage stamps) and should be addressed to

THE DIRECTOR,
United States Geological Survey,
Washington, D. C.

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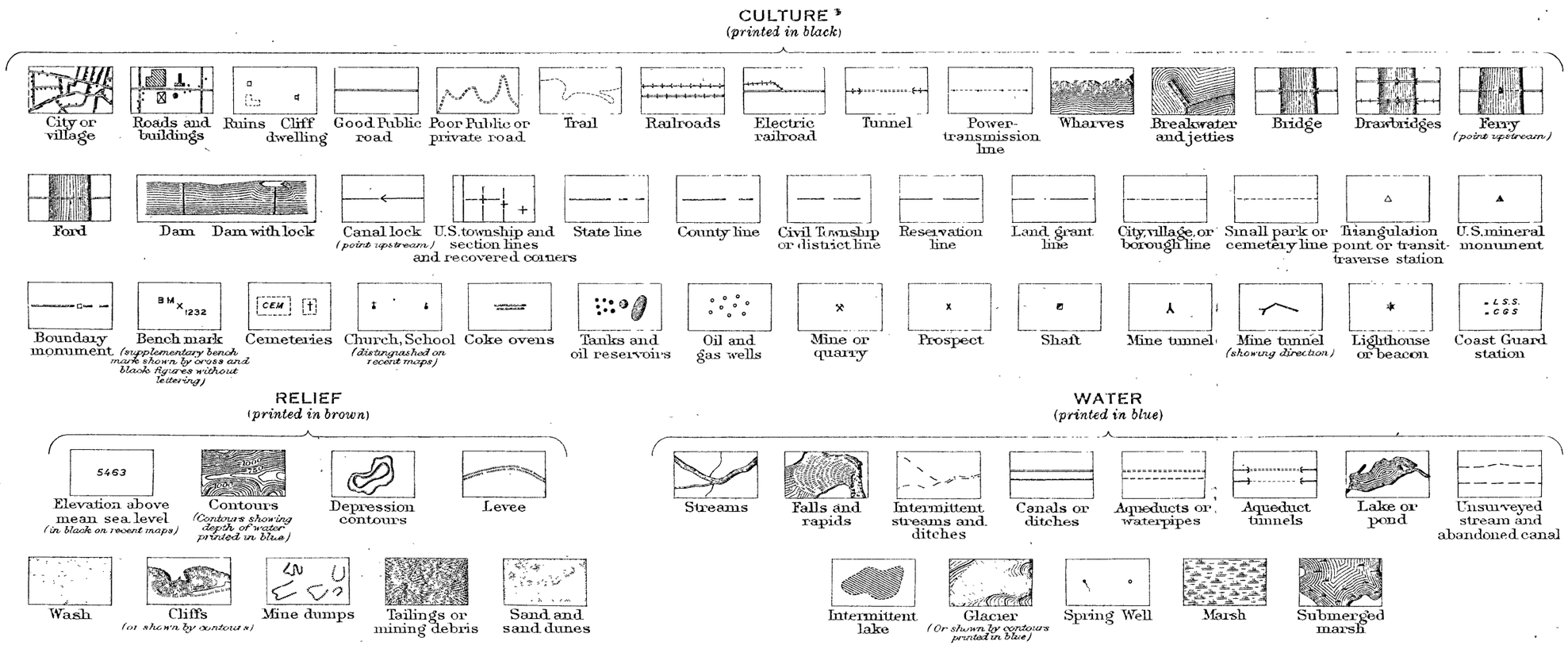
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