DMA Form 1

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DMA Docket No. 3134

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PLEASE
RETURN
the maps + photo
to Applicant
per their
request
Returned 8-5-53 L.G.R.

PC
7/29/53

Mr. Hughes
Mr. Berkely-Simmons
Midvale Mining Co.

Mrs. Sherman
Mr. Marsh } owners - John C. Marsh & Mrs. Glenn Marsh of Strasburg, Va.

Franhoe Mining Co. - Mr. Parsl, Manager.
Midvale Mine,
Rockbridge County, Va.
1954 - 1955 - G.S.A. Carlot program.

Mrs. Ada S. Sherman, St. Michaels, Md.
Bessie S. Ward, 2108 W. 82, Inglewood, Cal.
Frederick W. Schultz, 1220 Bolton St, Baltimore Md.
and -
Simmons Associates Mining Corp.
1 year contract - renewable for eight years -

400

OCT 30 1953

3134-Mn

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letters of October 15, 19, and 22, 1953, submitting additional information pertaining to the subject docket.

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced 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 the occurrence of manganese mineralization on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

At your request we are returning your letter and map from W. M. McGill, State Geologist. Please note that Mr. E. J. Burgess represents only the General Services Administration and is not, as Mr. McGill's letter suggested, connected with Defense Minerals Exploration Administration.

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

Sincerely yours,

STONE

Administrator

Enclosures

FARUTIEDGE:FOC 10-29-53
cc: Docket
Code 400
Admr. Reading File
Operating. Comm.

cc: FT. Reg. 8
Gilbert DeHuff, USBM
Louis Pavlides, USGS

C. O. Mittendorf, Administrator

Defense Minerals Exploration
Administration
11X3923, Working Fund,
Interior, DMEA

OCTOBER 30, 1953

MR. W. J. DICKINSON, Jr.
DICKINSON FIRE BRICK COMPANY
BUENA VISTA, VIRGINIA

REGRET PHONE CONVERSATION TODAY RE DOCKET DMEA 3134, MANGANESE, BULLET TO ADVISE THAT APPLICATION DENIED. FORMAL NOTIFICATION BEING MAILED.

C. O. Mittendorf

C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION
ADMINISTRATION

COMittendorf/fw

cc: Admr Reading File
Mails & Files
Code 400
Operating Comm.
Reg. VIII
Gilbert DeHaff, USBM
Louis Pavlides, USGS

OCT 30 1953

400

Mr. B. C. Burgess
c/o C. A. Fredell
Materials Division, Emergency Procurement Service
General Services Administration
Washington 25, D. C.

Re: Docket No. DMA 3134 - Mn.
Dickinson Fire Brick Co. claims
Rockbridge County, Virginia

Dear Mr. Burgess:

This will acknowledge receipt of your letter of October 27, 1953, reporting informally on your observations at the subject property. If I had understood clearly before talking to you that you were visiting the Dickinson prospect for a purpose entirely separate from DMA exploration, my telephone request to you would probably have been more coherent.

As it is, I appreciate your courtesy in writing and giving us the benefit of your observations.

With best regards.

Sincerely yours,

W. S. Martin

W. S. Martin, Chief
Iron and Ferro-Alloys Division

cc: Mr. C. A. Fredell

cc: DOCKET
ADM. READ. FILE
CODE 400

WSMartin/ls
10/29/53

Salem, Va.
27 Oct, 1953

Mr Wm Martin
DMEA Interior Building
18 & D Streets N.W.
Washington 25, DC

Dear Bill:

In accord with our phone conversation 23rd Oct I went over the Buena Vista property this morning with Mr W J Dickinson Jr and saw something of the geological formations and outcrops of manganese.

I think the formation is favorable although quite complicated. The outcrops are not impressive. In fact equally good showings can be found on dozens of properties Va - Ga.

This is probably none of my business, and I made the examination, a little beyond the scope of my present survey, to answer your question about the property.

The subsidy in the present $230 price should be sufficient inducement for interested parties to put up exploration money. If a buying depot for 15-40% Mn should be established it would be additional inducement.

Regards

Sincerely
B C Burgess

P.S. Mr Dickenson would like a decision on his application at once as he has a prospecting lease.
B

cc To C A Fredell

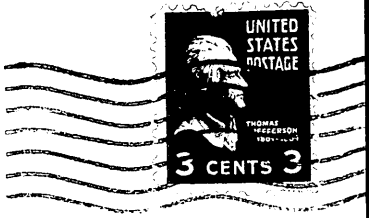
B C Burgess

FORT LEWIS TOURIST COURT

U. S. Highway 11 & 460

SALEM, VIRGINIA

SALEM, VA.
OCT 28
3-PM
1953



Mr Wm Martin
DMEA Interior Bldg
18th & D Streets NW
Washington 25, D.C.

October 29, 1953

MEMORANDUM

To: Administrator

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $19,790.00
Docket No. DMEA 313 - Manganese
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

The denial of the subject application by this Division is based on the following information:

1. The applicant proposed to explore a clay deposit on top of the Shady dolomite by geophysical methods to determine its size. If a reasonably large body of such clay was indicated, the geophysical survey was to be followed by a diamond drilling program to determine if manganese is present in economic quantities.

2. The manganese occurs in residual manganese-bearing clay beds derived from underlying formations such as the Tomstown (Shady) dolomite. The Field Team examined three old, small, caved, and completely filled excavations along the strike of the so called "Manganese Bed" and one small, recently hand dug trench. At the sites visited on this "Bed", along a strike distance of 4000 feet, the following manganese mineralization was discerned from specimens contained in the dumps and scattered around the old excavations:

   Site 2 sparse, thin streaks and lumps of wad in a reddish brown clay. No hard lump or nodular manganese present.

   Site 3 fragments and small blocks of manganese-stained and partially replaced limestone. No hard lump or nodular manganese present.

   Site 4 light, porous, soft waddy fragments and a few hard, heavy manganese nodules of the psilomelane type.

Site 5 fragments of a manganese cemented and partially replaced chert breccia. No hard lump or nodular manganese present.

The clay bank on the north side of the Big Chalk Mine was also examined. Manganese mineralization at this point consisted of stringers and seams of wad discontinuously exposed in the clay bank at two places about 20 feet apart. No hard manganese oxide nodules were present in this face nor in the stream bed near this point.

A traverse down the Little Chalk Mine Run, starting from a point opposite the Leake bed and ending downstream at its junction with the Big Chalk Mine Run, over 2,000 feet, resulted in the finding of five small, hard manganese nodules of the psilomelane type in the dry creek bed. The applicant's cited assay of 49.6 percent manganese was obtained by submitting for analyses several similar hand-picked nodules obtained from this creek bed.

3. Previous examinations of this deposit by engineers of the Bureau of Mines in May 1950 and January 1951 indicated the property has little merit.

4. The examining field team recommends denial of the subject application.

5. The Field Team submitted the field team report without recommendations.

6. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge:foc
10-29-53
cc: Docket
Code 400
Admr. Reading File

C O P Y

VIRGINIA CLAY AND SILICA CO. Box 614
Buena Vista, Virginia

October 22, 1953

Defense Mineral Exploration Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

As stated in my letter of October 19, I recently requested from the Virginia Geological Survey, any evidence that they might have as to the existence of a synclinal fold on the property listed in the above-docketed application.

Today, I received the enclosed letter and map from the State Geologist. It is requested that the letter and map be returned when they have served their purpose.

When the DMEA Field Team examined our property, it seemed that they were concerned about two points. The first of these was the fact that since there was no known geological report concerning the property, there was no documentary evidence of a synclinal fold on the property to support my belief that, judging from the similar topography and stream flow on our property and at Crimora, a basin existed here like that at the Crimora manganese mine. I believe that the enclosures will verify the existence of a synclinal fold on the property, and further, that the field team that examined the property will agree that the northeastern head of the valley of the North Fork of Chalk Mine Run, appears to close the fold to form a basin like that at Crimora. This is certainly indicated by the drainage net on the upper reaches of this creek.

The second point that seemed to concern the field team was the lack of more showings of manganese ore. My interpretation of an "exploration" was "a systematic search - - to penetrate or range over for discovery". If we must open the surface and show a significant deposit of manganese ore without the benefit of an exploration project to determine where we should mine, our costs might easily be prohibitive, particularly since the over-burden exceeded 30 feet at Crimora, and since the best ore there was located between 100 and 300 feet beneath the surface.

Sincerely yours,

/s/ W. J. Dickinson, Jr.

W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Enc. 2

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION
AND DEVELOPMENT
VIRGINIA GEOLOGICAL SURVEY
CHARLOTTESVILLE, VA.

October 20, 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Dear Mr. Dickinson:

The press of urgent matters requiring my full attention and repeated absences from the office during the past few weeks have delayed a more prompt reply to your request of October 6, in which you requested any information or evidence that our offices might be able to give you in regard to the occurrence of a synclinal fold in the drainage basin of Chalk Mine Run, which crosses property owned by your company north and northeast of the city of Buena Vista, adjacent to the city limits.

As you perhaps know, there is at the present time no geological report or geologic map available which shows in any detail, such as you would need, structural conditions in the vicinity of the property owned by your company. The Geologic Map of Virginia published by our Survey in 1928, and the Geologic Map of the Appalachian Valley in Virginia, published in 1933, both cover the area underlain by your property, but again both are on too small a scale to show any local structural details.

As you have been advised, there was initiated, some four or five years ago, as a special project of our Survey, the detailed mapping of the geology and mineral resources of a portion of the Blue Ridge and adjacent lands on the northwest thereof, which has been termed by us "The Central Blue Ridge district," and which includes all of the Vesuvius quadrangle and parts of the Lexington, Buena Vista, Amherst, Waynesboro and Lovingston quadrangles. The field mapping of this district has just about been completed. The mapping and field studies were done by Drs. R. O. Bloomer and Harry Jay Werner, working for and under the auspices of our Survey. A report on the geology and mineral deposits is in preparation, but the completed report and may will not be published for about another year.

I received yesterday a copy of Dr. Werner's letter of October 16 to you and since receiving it I have closely examined the map of the Centeral Blue Ridge district compiled by Drs. Bloomer and Werner which has just recently been received at our offices. I find that that portion of the Lexington qyadrangle mapped by Dr. Werber is definitely within the area of Blue Ridge rocks and does not extend far enough down to cover the rock formation occupying the drainage basin of (North Fork of) Chalk Mine Run, north and northeast of the city of Buean Vista.

Prior to the commencement of the mapping of the geology of the Central Blue Ridge district in cooperation with Dr. Werner, Dr. Bloomer mapped the geology of the Vesuvius quadrangle and prepared a report on the same which was used a a part of the requirements for his Ph.D. Degree in Geology (at the University of North Carolina, 1941). I have today closely examined the geologic map of the Buean Vista quadrangle prepared by Dr. Bloomer and have noted that this map shows a synclinal structure, designated the Glasgow syncline, extending northeasterly through the city of Buean Vista and in a course roughly parallel to the North Fork of Chalk Mine Run; also shown on this map. Lying northwest of the synclinal structure is an anticline designated as the North River anticline, and roughly parallel to and on the northwest of the Glasgow syncline. Both of these structures are shown to be in a body or belt of the Rome formation. The Rome formation normally overlies or rests upon the Shady or Tomstown dolomite formation. Thus on a geologic map it would normally be shown on the west or northwest of the Shady or Tomstown formation.

As you perhaps know the Shady or Tomstown dolomite formation is the main rock formation in which deposits of manganese have been found or are known to occur along the northwest base of the Blue Ridge in Virginia. Since the Rome formation normally overlies or rests upon the Shady or Tomstown formation it is possible that some deposits of manganese may occur in the base of the Rome or near and along the contact between the Rome and Shady-Tomstown formations. In fact several known deposits of manganese in the vicinity of Versuvius and northeast thereof, are shown on geologic maps as being located in the Rome formation near its contact with the underlying Shady-Tomstown formation. The Glasgow syncline, as mapped by Dr. Bloomer is as above mentioned, shown to be in the Rome formation. Since it overlies on the northwest of the Shady-Tomstown formation, it would be reasonable to expect the Shady-Tomstown formation to be involved also in a synclinal fold, or to lie within the boundary of the eastern limb of the indicated Glasgow synclinal fold. Again, since both the Rome and the Shady-Tomstown formation have undergone erosion and weathering, it is possible that the Shady-Tomstown formation would be encountered relatively near the surface, below the Rome formation, in the area immediately adjacent to the area of the North Fork of Chalk Mine Run, north (northeast) of the confluence of the South Fork and the North Fork of Chalk Mine Run.

Attached to this letter you will find a sketch of that portion of the geology of the Buena Vista quadrangle, as mapped by Dr. Bloomer, covering the immediate vicinity of the city of Buena Vista. The colors stop at the northern boundary of the Buena Vista quadrangle. North of the boundary, which would be in a part of the southern portion of the Lexington quadrangle, the approximate (?) axes of the Glasgow syncline, the North River anticline, and the eastern and western boundaries of the Rome formation, have been indicated in dashed pencil lines. The approximate course of (North Fork of) Chalk Mine Run has been indicated in a solid pencil line. It is thought that this sketch will prove helpful to you for the purposes desired, and it is further believed that the same indicates the possibility of the occurrence in the vicinity of your property, as described in your letter, of favorable structural conditions for the occurrence of deposits of manganese.

I had a conference Friday, October 16, with Mr. B. C. Burgess of the General Services Administration (Defense Mineral Exploration Administration) in regard to possible sites for further exploration for manganese in Virginia. I showed him Dr. Bloomer's geologic map of the Buena Vista quadrangle and indicated to him what I thought was the location of your property, pointing out that Dr. Bloomer's map indicated that favorable structural conditions should be found in the adjoining part of the Lexington quadrangle. I also showed Mr. Burgess the geologic map showing manganese deposits and structural conditions in the Elkton area in Page and Rockingham counties, accompanying U. S. Geological Survey Bulletin 940-B, entitled "Managanese Deposits of the Elkton area, Virginia," by Dr. Phillip B. King, published in 1943. I called the attention of Mr. Burgess to the fact that the detailed mapping of the Elkton area by King, showed a series of, more or less parallel anticlinal and synclinal folds in belts or bodies of Shady-Tomstown and Waynesboro (Rome) formation along the northwest base of the Blue Ridge in the Elkton area. It would be reasonable to expect, from the indication shown on Bloomer's geologic map of the Buena Vista quadrangle, that structural conditions, somewhat similar to those mapped by Kind in the Elkton area, might occur in the vicinity of Buena Vista and in the southern portion of the adjoining Lexington quadrangle.

Regretting the delay in replying to your request and hoping that the information given therein will prove of interest and help, I am

Sincerely yours,

/s/ William M. McGill

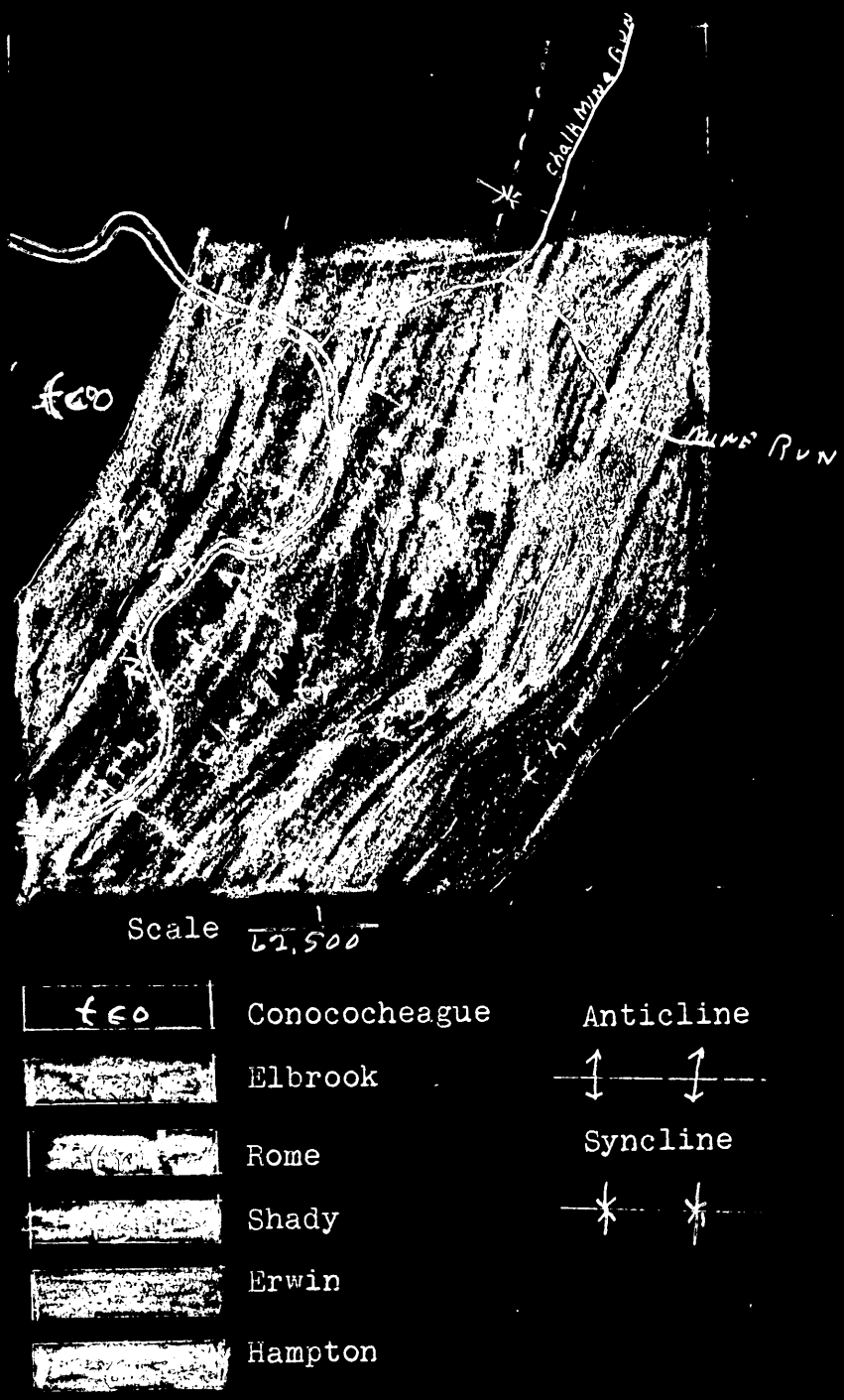
William M. McGill
State Geologist

WMMcG/evu
Enclosure

P.S. You might send the attached sketch map to the representative of the DMEA who visited the property in question or to the person with whom you have corresponded re this matter.

WMMcG

* Geologic Map of Buena Vista, Virginia



* Geology of the Blue Ridge in the Buena Vista Quadrangle, Virginia by R.U.Bloomer. A thesis submitted to the Faculty of the University of North Carolina, 1941.

DICKINSON FIRE BRICK CO.

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

DEPARTMENT OF THE INTERIOR
Bureau of Mines Technical Library
RECEIVED
OCT 26 1953

October 19, 1953

Memorandum

To: George C. Selfridge, Chairman, DMEA Operating Committee

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket No. DMEA-3134 - (Manganese)
Dickinson Fire Brick Company
Buena Vista, Rockbridge County, Virginia

Transmitted herewith are the original and three copies of the Field Team Report on Examination of the Dickinson Fire Brick Company property, Docket DMEA-3134, in Rockbridge County, Virginia.

W. T. Millar

Enclosures - 4

WTM:rwa

copy for USGS
DMEA Files 2
Mr. Selfridge - Orig. & 3

Reviewed by
DMEA OPERATING COMMITTEE
10-26-53
(date)

RECEIVED

FIELD TEAM REPORT ON EXAMINATION OF PROPERTY

by

G. L. Neumann of the Bureau of Mines and
Louis Pavlides of the Geological Survey

1. DMEA Docket No. 3134 - (Manganese)

2. Applicant: Dickinson Fire Brick Company
Buena Vista, Virginia

Reviewed by
DMEA OPERATING COMMITTEE
10-26-53
(date)

3. Summary, Conclusions and Recommendations:

The property of the Dickinson Fire Brick Company at Buena Vista, Virginia, is at the west base of the Blue Ridge Mountains. It is underlain by residual clays resting on the Tomstown dolomite and possibly on the Waynesboro formation. Iron ore was produced from this property to a depth of 200 feet during the 50 year period prior to the development of the Lake Superior iron ore ranges. During more recent years, fire clay was mined from this property and made into fire brick. No manganese production is recorded.

The field examination did not reveal any surface indications of manganese minerals in economic concentrations and it is doubtful whether the geologic and geophysical surveying proposed in the application could determine the presence of any manganese deposits.

This property does not appear to have sufficient merit to warrant Government participation in exploratory work. It is recommended by the Field Team that the application be denied.

4. Time spent on Property:

Examination was made on September 30 and October 1, 1953, by Louis Pavlides, representing the Geological Survey and G. L. Neumann, representing the Bureau of Mines. The Field Team was accompanied by W. H. Dickinson, Jr. on

September 30 and on October 1 by W. J. Dickinson, Jr. and Andrew J. Montgomery.

5. Name and Location of Property:

(a) The property is located on the north side of U. S. Highway 60, at the northeast corner of the village of Buena Vista, Virginia.

(b) Rockbridge County, Virginia.

(c) Buena Vista Mining District, Lat. 37°45' - Long. 79°21'

6. Condition and Seasonal Accessibility of Road to Property:

Access to the property is over an all-weather road which is the main highway and is in good condition.

7. Competency of Applicant and Operating Personnel:

The applicants, W. J. Dickinson, Jr. and J. T. L. Dickinson, are not mining men. They are both trained business executives and have served on director's boards of several businesses and banks. The applicants appear to be able to contribute their share of the cost of the proposed exploration program. They are considered capable of serving as administrators and intend to contract all of the work under capable technical guidance.

8. Applicant's Property Rights:

The Dickinsons own 408 acres in fee simple and have retained the mineral rights on 304 acres sold to the U. S. Forest Service.

9. Description of Property:

(a) This property lies at the west base of the Blue Ridge Mountain Range. Approximately 60 acres of this tract are in the valley. The remainder of the property is hillside which is steep in places. There is a cultivated terrace of probably 20 acres near the center of the property.

The surface plant consists of several buildings, where fire

brick was made. This plant has not operated since about 1910 and is in disrepair.

(b) There are several shallow open cuts with accompanying dumps where iron ore was mined until approximately 1910. Also several clay pits are on this property. No mining facilities or equipment are now on the property.

10. Geology and Ore Reserves:

The Dickinson Fire Brick Company property in Rockbridge County, Virginia, is at the western base of the Blue Ridge Mountains and is characterized by the general physiographic and geologic features common to this belt. The regional geology in the vicinity of Buena Vista, Virginia, is a monocline of Lower Cambrian rocks dipping to the northwest 1/. The oldest rocks, along the southeast side, are overlain by successively younger rocks to the northwest. In this belt of rocks, two types of geologic structures are most favorable for the accumulation of manganese ores in residual clays derived from underlying formations such as the Tomstown dolomite: (1) monoclines in which the residual clays lie above and within 300 feet of the Erwin quartzite, and (2) residual clays that fill troughs or synclines formed by the upper surface of the Erwin quartzite. However, ore deposition was influenced by topographic features and particularly by the early Tertiary valley floor peneplane rather than by structural features alone.

The Dickinson property at Buena Vista is underlain by residual clays formed on top of the Tomstown (Shady) dolomite and possibly the Waynesboro formation (formerly the Watauga shale). At least one ancient terrace is present

1/ Stose, G.W., Miser, H.D., Katz, F.J., Hewett, D.F. (1919): Manganese Deposits of the west foot of the Blue Ridge, Va.; Va. Geol. Surv. Bull. 17, Pl. 3.

on this property. Quartzite, however, is not present near any of the ferruginous or manganiferous "horizons" (see Fig. 1).

The geologic map (Fig. 1) submitted by the applicant is taken from a private report prepared by Ruffner 2/ and is of little value beyond showing the location of old iron and manganese prospect pits on the property. The Field Team examined three old, small, caved, and completely filled excavations along the strike of the so called "Manganese Bed" and one small, recently hand dug trench (Fig. 1, site 2). At the sites visited on this "Bed," along a strike distance of 4000 feet, the following manganese mineralization was discerned from specimens contained in the dumps and scattered around the old excavations:

(1) site 2: sparse, thin streaks and lumps of wad in a reddish brown clay. No hard lump or nodular manganese present.

(2) site 3: fragments and small blocks of manganese-stained and partially replaced limestone. No hard lump or nodular manganese present.

(3) site 4: light, porous, soft waddy fragments and a few hard, heavy manganese nodules of the psilomelane type.

(4) site 5: fragments of a manganese cemented and partially replaced chert breccia. No hard lump or nodular manganese present.

The clay bank on the north side of the Big Chalk Mine Run (Fig. 1, site 1), was also examined. Manganese mineralization at this point consisted of stringers and seams of wad discontinuously exposed in the clay bank at two places about 20 feet apart. No hard manganese oxide nodules were present in this face nor in the stream bed near this point.

2/ Ruffner, W.H., (1889): Report on the landed property of the Buena Vista Company, Philadelphia, Pa.

A traverse down the Little Chalk Mine Run, starting from a point opposite the Leake bed (see Fig. 1), and ending downstream at its junction with the Big Chalk Mine Run resulted in the finding of five small, hard manganese nodules of the psilomelane type in the dry creek bed. The applicant's cited assay of 49.6 percent manganese was obtained by submitting for analyses several similar hand-picked nodules obtained from this creek bed.

The surface showings at this property do not indicate that any significant amount of manganese oxide "ore" is present. From the fragmentary and widely separated surface information there is no way of computing manganese reserves. The sparse amount of hard nodules and lumps of manganese found, suggest that these are probably widely scattered in a few small lean pockets in the clays and that concentration ratios in treating such material would be very high.

11. Past Operations:

Numerous iron ore leads are shown on the map (Fig. 1). Several of these were operated and a fair production was maintained over a period of forty years by the Jordan family and the Buena Vista Iron Company. Fire clay was also mined and made into fire bricks for consumption in the local iron furnaces. Mining in this area was discontinued about 1910. Mr. Armstrong, an aged resident living on part of the property informed the Field Team that a very small amount of manganese was mined, hand-sorted and marketed from one of the pits on the Manganese Bed (See Fig. 1, site 1), around 1910. This operation was carried out over a period of about one month. The Field Team was unable to find any recorded evidence of this production.

12. Availability of Manpower, Materials, etc.:

Necessary materials, supplies and equipment would be available at Buena Vista (1 mile), Lexington (7 miles), and Lynchburg (35 miles). Buena

Vista is served by the Norfolk & Western Railroad. Manpower is available locally but this is primarily an agricultural area and trained mining men are scarce. The Maury River flows west of Buena Vista and there is a large amount of water in one of the old mine pits. An ample water supply could be developed from these sources.

13. Statement of Applicant's Proposal, etc.:

The applicant has proposed a two phase program as follows: The first stage to consist of geologic and geophysical surveying; the second stage to consist of a physical exploration program including drilling, trenching, and systematic sampling and chemical analyses of samples collected during these operations. A final report covering the above stages would be prepared upon completion of the exploratory work.

It is not believed that an exploration program of this type is warranted on a property that has such limited surface indications of manganese ores. The proposed program is not only extremely generalized but also highly speculative. Specifically, the following criticisms appear to be in order:

(1) It is questionable whether the geologic mapping of the small area described in this application would contribute materially to the success of such an exploration program. Geologic mapping, if undertaken, should be more comprehensive in scope and should encompass enough of the surrounding terrain to enable the geologic structure and stratiography to be determined. It is questionable whether geologic mapping on a regional scale extending considerably beyond the applicant's property, falls within the province of a DMEA exploration program.

(2) A resistivity survey on this tract may indicate the thickness and shape of the clay mantle resting on the underlying formations and possibly the

thickness of gravel on the terraces covering the clay, but it is not likely that any specific manganese mineralization can be detected by such a survey. In brief, the target outlined would be a clay body which would then have to be drilled on a closely spaced grid system to determine the presence of manganese in economic concentrations. Since the property is almost entirely underlain by clay anyway, little would be gained by further defining its depth with geophysical methods, which would only be rechecked by later drilling.

(3) The physical exploration program cites that diamond drilling may be used for testing this deposit. It is extremely unlikely that diamond drilling can be used in this type of material and it is even dubious whether auger drilling would provide reliable samples for assaying. Certainly, samples for concentration ratios could not be determined from either of these types of drilling.

The applicant, W. J. Dickinson, Jr., in his discussion with the Field Team continually compared his property to the Crimora mine in Augusta County, Virginia, and suggested that he also had a synclinal deposit at Buena Vista. However, the geologic map (Pl. 111) of Virginia Geol. Surv. Bull. 17, (1919), clearly shows the Crimora syncline while in the vicinity of Buena Vista the structure, as far as the limit of mapping extends, is a monocline dipping to the northwest. The applicant also insisted that although the surface indications of manganese on his property were not encouraging it was no proof that he did not have a deposit at a depth of 200 feet or more. Experience in this province shows that virtually all the known manganese "ore" occurrences are at places where manganese oxides crop out naturally or were discovered in mining iron ore.

The applicant appeared to realize the generalized and ambitious nature of the proposed exploration proposal and indicated he would agree to any

reasonable modifications. However, he would not want to submit a new application because of the additional waiting period pending a decision by the DMEA. He felt he could not afford any further delay because he already has received an offer for his mineral rights. Any further great delay in obtaining a reply to his application, however, might result in the loss of the prospective lessor, and he therefore requests the greatest possible haste in informing him of the final decision on this application. The surface indications on this property, however, are too meager to warrant proposing a revised exploration program.

W. T. Millar

W. T. Millar, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

John B. Hanley for

Quentin D. Singewald, U. S. Geological
Survey Member, Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

College Park, Maryland
October 16, 1953

Mr. Halliday

Bureau of Marine

Rec. 3517

400

SEP 24 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. [illegible] 3134 - Manganese
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letter of September 19, 1953, requesting information about the status of the subject application.

We have been advised that a geologist of the Field Team, Region VIII, will be available for a field examination of your property during the early part of October, but the Field Team will, of course, arrange the timing of the examination directly with you. After the examination is completed, the same geologist should be able to give you an estimate of the time that will be required to prepare and send to us for review the usual Field Team report. You will be advised of our conclusions shortly after that report is received here.

Sincerely yours,

FRANK E. JOHNSON
ACTING Administrator

JHopkins/WSMartin/ls
9/23/53

cc: Docket
Field Team, Reg. 8
Code 400
Adm. Read. File
Martha Corr, USGS
Gilbert DeHuff, USBM

SEP 9 - 1953

Mr. W. T. Millar, Executive Officer
DMEA Field Team, Region VIII
Bureau of Mines
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company Mine
Rockbridge County, Virginia

Dear Mr. Millar:

Reference is made to Mr. H. L. Burmeister's request for copies of the applicant's maps referred to in our letter of August 5, 1953, to Mr. Dickinson.

Enclosed are copies of the three maps for your files.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED

J. H. Hedges
Member, Bureau of Mines

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

FARUTLEDGE:foc
cc: Docket
Code 400
FT. REG. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

Enclosures

SEP 3 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company Mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letter dated August 28, 1953, requesting copies of reports on your property by Bureau of Mines engineers.

We regret being unable to comply with your request because these reports are unpublished and are not available for distribution, outside of the Government.

We are also unable at this time to answer your question as to when you may expect a decision regarding your application. As stated in our letter of August 27, 1953, the matter has been referred to the DMEA Field Team for Region VIII for review and possibly a field examination. When the Field Team's report is received, your application will be given prompt attention and you will be advised of our conclusions.

Sincerely yours,

C. O. Mittendorf

Administrator

JHopkins:foc
9-3-53
cc: Docket
Code 400
FT. Reg. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

AUG 27 1953

Mr. W. T. Millar, Executive Officer
DMEA Field Team, Region VIII
Bureau of Mines
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Millar:

Reference is made to the subject application for exploration assistance which is being referred to your office for review and possibly a field examination of the property if an examination is warranted.

The applicant proposed to explore a clay deposit on top of the Shady dolomite by geophysical methods to determine its size. If a reasonably large body of such clay is indicated, the geophysical survey is to be followed by a diamond drilling program to determine if manganese is present in economic quantities.

It is noted that this deposit was examined by engineers of the Bureau of Mines in May 1950 and January 1951. The data available here indicate the property has little merit. However the application is being referred to you for review and possibly a field examination of the property as more information may be contained in the complete reports.

Martha Carr, Geological Survey, has prepared a memorandum covering the subject application and two copies are enclosed for your information.

Sincerely yours,

Ernest Wm. Ellis

ACTING Chairman, Operating Committee

APPROVED:

M. H. Kline

Member, Bureau of Mines

D. M. Larrabee

Member, Geological Survey

FARutledge:foc
8-25-53
cc: Docket
Code 400
Ft. Reg. 8
Adm. Reading File
Operating Comm.
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

AUG 27 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
~~Dickinson Fire Brick Company~~
Dickinson Fire Brick Co. mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

Reference is made to the above-docketed application for exploration assistance which has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. T. Millar, Executive Officer, DMEA Field Team, Region VIII, Bureau of Mines, Eastern Experiment Station, College Park, Maryland, for a field review.

Data available to the Government in Washington indicate that the referenced property was examined by engineers of the Bureau of Mines in May 1950 and January 1951. Therefore a field examination may not be necessary as sufficient information may already be available. Should a field examination be required, however, any assistance that you can render the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:foc
8-25-53
cc: Docket
Code 400
FT. Reg. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

AUG 5 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

Dear Mr. Dickinson:

The following enclosures received with the above docketed application for exploration assistance are returned herewith as you requested.

Enclosure 3 - Photo of map showing property lines
Enclosure 4 - Aerial photo of property with description.
Enclosure 5 - Map of property showing ore veins

We have prepared photostats of these data and the originals are no longer required here.

Sincerely yours,

SIGNED

W. S. Martin, Acting Chief
Iron and Ferro-Alloys Division

Enclosures

FARutledge/foc
8-5-53
cc: Docket
Code 400
Adm. Reading File
FT. Reg. VIII

400

IN REPLY REFER TO:

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

August 3, 1953

Noted J. W. Guild

Memorandum

To: W. B. Martin, DMEA

From: Martha Carr, USGS

Subject: Exploration application
Dickinson Fire Brick Company $20,790 DMEA-3134 Manganese
W. J. Dickinson, Jr. and J.T.L. Dickinson, Jr. (partnership)
Box 614,
Buena Vista, Va.

Property: The property consists of 390.83 acres of land located in So. River Dist., Rockbridge County, Commonwealth of Virginia; also approximately 17 acres located in City of Buena Vista, Va., consisting of 5-20-part of 2, 6-22-entire, 6-35-1 to 4 inclusive, 7 to 24 inclusive, 6-51-12 16/100 acres, 6-4 acres; also approximately 304.47 acres of land located in South River District, Rockbridge County, sold by Dickinson Fire Brick Co. in 1937, regarding which the deed states "The parties of the first part hereby reserve the right to all mineral and brick clay on the said tract of 304.47 acres, together with the right of ingress and egress for the purpose of removing same." The parties of the first part constitute Dickinson Fire Brick Company, the name by which the property is known.

Proposal: The proposed investigation consists of a preliminary survey to determine the extent, thickness, and shape of the clay deposit on top of the Shady dolomite, (Tomstown dolomite) because the quantity of any manganese ores that occurs on this property will be dependent upon the depth and areal extent of the residual mantle. Specifically, it is intended to cover the property with a detailed geological examination and concomitant earth resistivity survey consisting of closely spaced northwest-southeast traverses across the property. Based upon the results of the earth resistivity and geological studies, a detailed layout of drill holes would be prepared as the basis for the second phase of exploration.

In developing this layout, detailed studies would be made of all pits and prospects with showings of manganese, and some trenching and stripping of cover by bulldozing would be done in an attempt to determine the places wherein the manganese appears to be most localized and concentrated on or near the surface. Depending upon the facility with which the clays can be penetrated, power-auger borings or diamond drilling would be done. The footage of borings necessary to test the more promising indications of manganese and to explore the possible occurrence of manganese in the clay at depth is estimated to be 4,500 feet, based on holes to a possible maximum depth of 300 feet. Detailed geological study and logging of the cores and preparation of samples of mineralized zones for chemical analysis would follow. A final report covering all stages of the investigations, and including geologic cross sections, projections of borings, bedrock profiles, and chemical analyses of manganese encountered in drill holes would be prepared. The work would start within 20 days and be completed within 4 months from the date of an exploration project contract.

Geology: The principal manganese ore deposits of the general area of the applicant's property occur in the mantle of residual clay that rests on the Tomstown dolomite, formerly called the Shady dolomite (lower Cambrian), and a few deposits consist of veins filling fractures in the Antietam quartzite (lower Cambrian). The manganese-bearing clay has resulted from the deep weathering of dolomite, limestone, and shale beneath the surficial gravel of the valley-floor peneplain. The deposits, which occur in association with synclines, monoclines, and faults, are similar to many others that occur along the west foot of the Blue Ridge, including those of the Lyndhurst-Vesuvius and Crimora districts to the northeast. These deposits have been described in U. S. Geological Survey Bulletin 940-F, by Maxwell M. Knetchel, 1943, and Virginia Geological Survey Bulletin 17, by G. W. Stose, H. D. Miser, F. J. Katz, and D. F. Hewett, 1919, respectively. The productive deposits of the Lyndhurst-Vesuvius district have been found to be extremely variable in size, form, attitude, and spacing, as well as in quantity and grade of ore. The ore was mined in open pits and underground workings; and most of it had to be treated in log washers followed by hand picking. Pyrolusite and psilomelane, mixed with more or less limonite and in places associated with considerable wad, are the chief ore minerals. The manganese ores in this district carry 39-59% Mn with a trace to 6% Fe.

Recommendation: From the information available, the proposed exploration would appear to be of a somewhat speculative nature. The report on the Lyndhurst-Vesuvius district, however, states that bodies of good manganese ore may lie concealed under large areas of gravel, and prospecting for them by geophysical methods might be worth trying. The same statement may apply to the applicant's property. If the intermixture of the limonite with the manganese oxide minerals does not present a difficult metallurgical problem, it is recommended that the application be referred to the field team for advice.

Martha Carr

Box 614
July 27, 1953

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

Gentlemen:

I am forwarding herewith, an application for aid in an exploration project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended.

We have had a sample of manganese ore from our property analyzed, showing 49.6% pure manganese, 8.8% silica, and 3.0[illegible]4% iron. Samples will be forwarded if desired.

In compliance with instruction 5(d) of Form MF-103, it is stated that both owners are qualified to conduct overall supervision of the nontechnical aspects of exploration and to keep suitable records and accounts of operations which may be required, since both have business administration degrees from recognized colleges and are owners, directors, and stockholders in several businesses and banks.

In compliance with instruction 6 of Form MF-103, it is estimated that in addition to the costs listed in Enclosure 2 to Form MF-103, overall supervision by owners will amount to $640.00, based on a rate of $[illegible].00 per hour, 4 hours per day, 5 days per week, for 16 weeks. In addition, travel, telephone, and postage expenses incurred by the owners in supervising the project are estimated at $150.00. Estimated total cost of the project will be $20,790.00.

We will be glad to supply any further information that may be required.

Yours very truly,

[illegible]. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Enc.6:
Application on Form MF-103 (Revised April 1952) (4 copies)
Enc.1 to application - Continuation of inst. 3(a) (4 copies)
Enc.2 to application - Report of Dr. [illegible]. [illegible]. Cooper (4 copies)
Enc.3 to application - Photo of map showing property lines (to be ret.)
Enc.4 to application - Aerial photo of property with description
Enc.5 to application - Map of property showing ore veins (to be ret.)

MF 103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
RECEIVED
JUL 29 1953

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

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. DMEA-3134
Metal or Mineral
Date Received 7/29/53
Estimated Cost
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: Dickinson Fire Brick Company; Box 614; Buena Vista, Virginia; Attention W. J. Dickinson, Jr. (Partnership, State of Virginia). Partners are: Mr. W. J. Dickinson, Jr., 202 N. Maple Ave., Buena Vista, Virginia and Mr. J. T. L. Dickinson, Jr., 125 N. Maple Ave., Buena Vista, Virginia.

(*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. See 1(a).

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. Not applicable.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. See 1(a).

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 390.83 acres of land located in So. River Dist., Co. of Rockbridge, Commonwealth of Va. Also approximately 17 acres located in City of Buena Vista, Va. consisting of 5-20-part of 2, 6-22-entire, 6-35-1 to 4 inclusive, 7to 24 inclusive, 6-51-12 16/100 acres, (Cont. on line 1

(*b*) State any mine name by which the property is known. Dickinson Fire Brick Co.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner of 407.83 acres and owner of mineral rights on additional 304.47 acres.

(*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. Not applicable.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable.

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. See enclosure 2.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See enclosure 2.

(*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. See enclosures 2 and 3.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See enclosures 2 and 4.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See enclosures 2 and 4.

16—66551-1

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

(*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. See enclosure 2.

(*c*) The work will start within 20 days and be completed within 4 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. See enclosure 2, and letter of transmittal.

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: See letter of transmittal.

(*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.). See enclosure 2.

(*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. See enclosure 2.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See enclosure 2.

(*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. See enclosure 2.

(*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. No rehabilitation or repairs necessary.

(*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. None.

(*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. See enclosure 2.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above. None.

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)? Yes.

(*b*) How do you propose to furnish your share of the costs? By cash payments at a ratio of 25% of the allowable costs incurred, as they accrue.

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper. Partners have adequate personal assets to finance their portion of the allowable costs incurred.

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 July 27, 1953

Dickinson Fire Brick Company
(Applicant)

By W. J. Dickinson, Jr.
Partner

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

Enclosure 1

CONTINUATION OF INSTRUCTION 3(a), FORM MF-105 (REVISED APRIL 1958)

6-4 acres. Also approximately 304.47 acres of land located in South River District, County of Woodbridge, Commonwealth of Virginia, sold by Dickinson Fire Brick Company in 1937, regarding which the deed states "The parties of the first part hereby reserves the right to mail mineral and brick clay on the said tract of 304.47 acres, together with the right of ingress and egress for the purpose of removing same". The parties of the first part constitute Dickinson Fire Brick Company.

ENCLOSURE 2

BYRON N. COOPER
GEOLOGIST
BOX 634
BLACKSBURG, VIRGINIA

V. P. I. OFFICE
8261 EXT. 380

CAMPUS RESIDENCE
8736

INFORMATION PERTAINING TO APPLICATION FORM MF-103 OF DMEA OF U. S. DEPARTMENT OF THE INTERIOR, BEING SUBMITTED BY W. J. DICKINSON AND J. T. L. DICKINSON OF BUENA VISTA, VIRGINIA.

4. Physical Description.— (a) No mining operations now in progress. Small quantities of fire clay have been mined in past. Several prospect pits showing fire clay, wad, and some lump manganese; fire clays from property were in part produced by present owners.

(b) No appreciable quantity of manganese ore is known to have been shipped from this property.

(c) The property, as shown on the sketch map accompanying this application, is situated at the west foot of the Blue Ridge and trends northeasterly parallel to the strike of the contiguous Lower Cambrian quartzites. The greater part of the area is covered with alluvium and colluvium, the latter from the contiguous quartzite ridges. Beneath the shallow cover of stream- and gravity-transported loose rock, is an accumulation of refractory clay, wad, and other manganese oxides--which materials occur upon and conceal the outcrop of the Shady dolomite. The manganese is believed to have a mode of occurrence similar to that at Crimora, Augusta County, Virginia, and several workings of lesser extent in the Lyndhurst-Vesuvius district (described by M. M. Knechtel, USGS Bull. 940-F, 1943) of Augusta and Rockbridge counties, Virginia. The manganese occurs in irregular masses, lumps, nodules, and stringers in clay, underconditions where open-pit methods could be employed for recovery of any manganese found.

Tonnages of manganese in excess of 10,000 tons have been taken from properties geologically and topographically situated similar to the property covered by this application. At current prices for 48 per cent ore, or better, it is believed feasible to remove quantities of such ore as small as 10,000 tons from said property by open pit methods, providing that workable concentrations of ore can be found within 300 feet depth from the surface. This possibility is enhanced considerably by the fact that the associated clay has refractory qualities which would render it a merchantable resource under favorable conditions of development of the property primarily for some other resource, such as manganese. Occurrence of the latter in a number of diggings and exposures where the surficial debris has been stripped off suggests the possibility that the manganese is disseminated in the clay in sufficient quantity to be worthy of exploration.

(d) Accompanying map indicates ready accessibility of property for exploration.

(e) Necessary manpower, materials, and equipment can be secured readily for exploration of property.

5. (b) The proposed investigation would consist of a preliminary survey to determine the width and depth of the clay deposit on top of the Shady dolomite, because the quantity of any manganese ores that occur on this property will be dependent upon the depth and areal extent of the residual cover. Unless preliminary investigations can disclose a reasonably large body of such clay to persist to depths considerably greater than reached in any of the old prospect pits it is not likely that commercial manganese could occur. The extent, thickness, and shape of the clay that will serve as host to any manganese that may be present, can be determined readily from geological and geophysical studies. Specifically, it is intended to cover the property with a detailed geological examination and concomitant earth resistivity survey consisting of closely spaced northwest-southeast traverses across the property. The clay body may be too thick to determine fully and precisely by earth resistivity methods, but if this possibility develops the fact will in itself indicate the great quantity of clay that could serve as host to occurrences of manganese.

Based upon the results of the earth resistivity and geological studies a detailed layout of drill holes would be prepared as the basis for the second phase of exploration of the property. In developing this layout, detailed studies would be made of all pits and prospects with showings of manganese, and some trenching and stripping of cover by bulldozing would be done in an attempt to determine the places on the property wherein the manganese appears to be most localized and concentrated on the surface or near the surface. Depending upon the facility and ease with which the clays can be penetrated power-auger borings or diamond-drilling would be done. The footage of borings necessary to test the more promising indications of manganese and to explore the possible occurrence of manganese in the clay at depth is estimated to be 4,500 feet, based on holes ranging down to a possible maximum of 300 feet. Detailed geological study and logging of the cores and preparation of samples of mineralized zones for chemical analysis would follow along with drilling. A final report covering all stages of the investigations, and including geologic cross sections, projections of borings, bedrock profiles, and chemical analyses of manganese encountered in drill holes would be prepared to satisfy fully the requirements of the Government.

(d) The geological and geophysical work would be directed by D. H. Cooper who would be responsible for preparation of all the technical reports, maps, etc., connected with the project. C. E. Sears, Jr., assisted by qualified assistants (probably V.P.I. students) would make the earth resistivity survey. These persons would work under the supervision of the owners.

Est. Cost

6. Estimate of Costs.— Independent contracts: Diamond-drilling and drive-penetration of clays and included manganese @ approximately $3.00 per foot for minimum of 1,500 feet, probably by Mott Drilling Company, Charleston, W. Va.; and 6-in. power-auger boring @ $0.75 per foot—the two methods to be used to extent and degree dictated by nature of the material and desired depth of penetration of borings and by consistency of tested materials; maximum estimated cost if all borings done with diamond bit: 4,500 feet..... $13,500.00

Independent contracts cont'd.:

Earth resistivity survey of property by C. N. Sears, Jr. and assistants working under contract between owners and the Virginia Engineering Experiment Station, V. P. I., Blacksburg, Va. @$500 per week, including field expenses of party chief and his assistants and their salaries..... $2,500.00

Total Independent Contracts.....$16,000.00

Labor, supervision, and consultants: Unskilled hand labor for trenching, digging, and miscellaneous labor on moving equipment and supplies, all figured at minimum hourly rate 500.00

Supervision by owners (to be supplied by owners)
Technical supervision and consultation $750
services plus actual expenses estimated at $175 925.00
(services provided by B. N. Cooper)

Total labor, supervision, and consultants $1,425.00
(figure listed excludes owners supervisory work on project)

Operating Materials and Supplies: Use of one bulldozer and small shovel, with operators, on hourly basis as needed for approximately 75 hours @$10 per hour 750.00

Miscellaneous: Analytical work on borings and cores 450.00

Accounting 300.00
Insurance 75.00
Total Miscellaneous $825.00

No Contingencies

COST SUMMARY:

Contractual.....	$16,000.00
Labor, supervision, & consultants	$ 1,425.00
Other operations	$ 750.00
Miscellaneous	$ 825.00
Total Cost	$20,000.00

The above material organized and prepared by the undersigned at the behest of [illegible]. J. Dickinson, one of the owners of the property.

Submitted in Quintuplicate [illegible] July 25, 1959 [illegible] Va.

FILE COPY
SURNAME:
400

Rutledge
Pavelides
Martin
Dethuff
Hedges
Thayer
Schlendge
F.E. Johnson

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

OCT 30 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letters of October 15, 19, and 22, 1953, submitting additional information pertaining to the subject docket.

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced 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 the occurrence of manganese mineralization on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

At your request we are returning your letter and maps from W. M. McGill, State Geologist. Please note that Mr. B. C. Burgess represents only the General Services Administration and is not, as Mr. McGill's letter suggested, connected with Defense Minerals Exploration Administration.

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

Sincerely yours,

SIGNED
Administrator

Enclosures

FARUTIEDGE:FOC 10-29-53
cc: Docket
Code 400
Admr. Reading File
Operating. Comm.

cc: FT. Reg. 8
Gilbert DeHuff, USBM
Louis Pavlides, USGS

R.C.B.
10-30-53

C. O. Mittendorf, Administrator

Defense Minerals Exploration
Administration
1D3923, Working Fund,
Interior, DMEA

OCTOBER 30, 1953

MR. W. J. DICKINSON, Jr.
DICKINSON FIRE BRICK COMPANY
BUENA VISTA, VIRGINIA

RECEIVED PHONE CONVERSATION TODAY RE DOCKET DMEA 3134, MANGANESE, REPORT TO ADVISE THAT APPLICATION DENIED. FORMAL NOTIFICATION BEING MAILED.

C. O. Mittendorf (fw)

C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION
ADMINISTRATION

COMittendorf/fw

cc: Admr Reading File
Mails & Files
Code 400
Operating Comm.
Reg. VIII
Gilbert DeHuff, USBM
Louis Pavlides, USGS

R.C.G. 10-30-53

FILE COPY
SURNAME: MDP
Martin
H. Johnson

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

OCT 30 1953

Mr. B. C. Burgess
c/o C. A. Fredell
Materials Division, Emergency Procurement Service
General Services Administration
Washington 25, D. C.

Re: Docket No. DMEA 3134 - Mn.
Dickinson Fire Brick Co. claims
Rockbridge County, Virginia

Dear Mr. Burgess:

This will acknowledge receipt of your letter of October 27, 1953, reporting informally on your observations at the subject property. If I had understood clearly before talking to you that you were visiting the Dickinson prospect for a purpose entirely separate from DMEA exploration, my telephone request to you would probably have been more coherent.

As it is, I appreciate your courtesy in writing and giving us the benefit of your observations.

With best regards.

Sincerely yours,

W. S. Martin

W. S. Martin, Chief
Iron and Ferro-Alloys Division

cc: Mr. C. A. Fredell

cc: DOCKET
ADM. READ. FILE
CODE 400

WSMartin/ls
10/29/53

R.C.G. 10-30-53

400

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

October 29, 1953

MEMORANDUM

To: Administrator

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $19,790.00
Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

The denial of the subject application by this Division is based on the following information:

1. The applicant proposed to explore a clay deposit on top of the Shady dolomite by geophysical methods to determine its size. If a reasonably large body of such clay was indicated, the geophysical survey was to be followed by a diamond drilling program to determine if manganese is present in economic quantities.

2. The manganese occurs in residual manganese-bearing clay beds derived from underlying formations such as the Tomstown (Shady) dolomite. The Field Team examined three old, small, caved, and completely filled excavations along the strike of the so called "Manganese Bed" and one small, recently hand dug trench. At the sites visited on this "Bed", along a strike distance of 4000 feet, the following manganese mineralization was discerned from specimens contained in the dumps and scattered around the old excavations:

   Site 2 sparse, thin streaks and lumps of wad in a reddish brown clay. No hard lump or nodular manganese present.

   Site 3 fragments and small blocks of manganese-stained and partially replaced limestone. No hard lump or nodular manganese present.

   Site 4 light, porous, soft waddy fragments and a few hard, heavy manganese nodules of the psilomelane type.

Site 5 fragments of a manganese cemented and partially replaced chert breccia. No hard lump or nodular manganese present.

The clay bank on the north side of the Big Chalk Mine was also examined. Manganese mineralization at this point consisted of stringers and seams of wad discontinuously exposed in the clay bank at two places about 20 feet apart. No hard manganese oxide nodules were present in this face nor in the stream bed near this point.

A traverse down the Little Chalk Mine Run, starting from a point opposite the Leake bed and ending downstream at its junction with the Big Chalk Mine Run, over 2,000 feet, resulted in the finding of five small, hard manganese nodules of the psilomelane type in the dry creek bed. The applicant's cited assay of 49.6 percent manganese was obtained by submitting for analyses several similar hand-picked nodules obtained from this creek bed.

3. Previous examinations of this deposit by engineers of the Bureau of Mines in May 1950 and January 1951 indicated the property has little merit.

4. The examining field team recommends denial of the subject application.

5. The Field Team submitted the field team report without recommendations.

6. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in the denial.

W S Martin

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FILE COPY
SURNAME:
400

Rutledge
Pawlikowski
Martin
DeHaff

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

October 29, 1953

MEMORANDUM

To: Administrator

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $19,790.00
Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

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   Site 2 sparse, thin streaks and lumps of wad in a reddish brown clay. No hard lump or nodular manganese present.

   Site 3 fragments and small blocks of manganese-stained and partially replaced limestone. No hard lump or nodular manganese present.

   Site 4 light, porous, soft waddy fragments and a few hard, heavy manganese nodules of the psilomelane type.

P.C.G.
10-30-53

FILE COPY
SURNAME:

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

Site 5 fragments of a manganese cemented and partially replaced chert breccia. No sand lenses or nodular manganese present.

The clay bank on the north side of the Big Chalk Mine was also examined. Manganese mineralization at this point consisted of stringers and seams of wad discontinuously exposed in the clay bank at two places about 20 feet apart. No hard manganese oxide nodules were present in this face nor in the stream bed near this point.

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5. The Field Team submitted the field team report without recommendations.

6. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge:foc
10-29-53
cc: Docket
Code 400
Admr. Reading File

W. J. DICKINSON, JR. J. T. L. DICKINSON, JR.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 23 1953

Virginia Clay and Silica Co.

BUENA VISTA, VIRGINIA

Box 614

October 22, 1953

WSM

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

Gentlemen:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

As stated in my letter of October 19, I recently requested from the Virginia Geological Survey, any evidence that they might have as to the existence of a synclinal fold on the property listed in the above-docketed application.

Today, I received the enclosed letter and map from the State Geologist. It is requested that the letter and map be returned when they have served their purpose.

When the DMEA field team examined our property, it seemed that they were concerned about two points. The first of these was the fact that since there was no known geological report concerning the property, there was no documentary evidence of a synclinal fold on the property to support my belief that, judging from the similar topography and stream flow on our property and at Crimora, a basin existed here like that at the Crimora manganese mine. I believe that the enclosures will verify the existence of a synclinal fold on the property, and further, that the field team that examined the property will agree that the northeastern head of the valley of the North Fork of Chalk Mine Run, appears to close the fold to form a basin like that at Crimora. This is certainly indicated by the drainage net on the upper reaches of this creek.

The second point that seemed to concern the field team was the lack of more showings of manganese ore. My interpretation of an "exploration" was "a systematic search - - to penetrate or range over for discovery". If we must open the surface and show a significant deposit of manganese ore without the benefit of an exploration project to determine where we should mine, our costs might easily be prohibitive, particularly since the overburden exceeded 30 feet at Crimora, and since the best ore there was located between 100 and 300 feet beneath the surface.

Sincerely yours,
W. J. Dickinson, Jr.
W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Enc. 2

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION
AND DEVELOPMENT
VIRGINIA GEOLOGICAL SURVEY
CHARLOTTESVILLE, VA.

October 20, 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Dear Mr. Dickinson:

The press of urgent matters requiring my full attention and repeated absences from the office during the past few weeks have delayed a more prompt reply to your request of October 6, in which you requested any information or evidence that our offices might be able to give you in regard to the occurrence of a synclinal fold in the drainage basin of Chalk Mine Run, which crosses property owned by your company north and northeast of the city of Buena Vista, adjacent to the city limits.

As you perhaps know, there is at the present time no geological report or geologic map available which shows in any detail, such as you would need, structural conditions in the vicinity of the property owned by your company. The Geologic Map of Virginia published by our Survey in 1928, and the Geologic Map of the Appalachian Valley in Virginia, published in 1933, both cover the area underlain by your property, but again both are on too small a scale to show any local structural details.

As you have been advised, there was initiated, some four or five years ago, as a special project of our Survey, the detailed mapping of the geology and mineral resources of a portion of the Blue Ridge and adjacent lands on the northwest thereof, which has been termed by us "The Central Blue Ridge district," and which includes all of the Vesuvius quadrangle and parts of the Lexington, Buena Vista, Amherst, Waynesboro and Lovingston quadrangles. The field mapping of this district has just about been completed. The mapping and field studies were done by Drs. R. O. Bloomer and Harry Jay Werner, working for and under the auspices of our Survey. A report on the geology and mineral deposits is in preparation, but the completed report and may will not be published for about another year.

I received yesterday a copy of Dr. Werner's letter of October 16 to you and since receiving it I have closely examined the map of the Centeral Blue Ridge district compiled by Drs. Bloomer and Werner which has just recently been received at our offices. I find that that portion of the Lexington qyadrangle mapped by Dr. Werber is definitely within the area of Blue Ridge rocks and does not extend far enough down to cover the rock formation occupying the drainage basin of (North Fork of) Chalk Mine Run, north and northeast of the city of Buean Vista.

Prior to the commencement or the mapping of the geology of the Central Blue Ridge district in cooperation with Dr. Werner, Dr. Bloomer mapped the geology of the Vesuvius quadrangle and prepared a report on the same which was used a a part of the requirements for his Ph.D. Degree in Geology (at the University of North Carolina, 1941). I have today closely examined the geologic map of the Buean Vista quadrangle prepared by Dr. Bloomer and have noted that this map shows a synclinal structure, designated the Glasgow syncline, extending northeasterly through the city of Buean Vista and in a course roughly parallel to the North Fork of Chalk Mine Run; also shown on this map. Lying northwest of the synclinal structure is an anticline designated as the North River anticline, and roughly parallel to and on the northwest of the Glasgow syncline. Both of these structures are shown to be in a body or belt of the Rome formation. The Rome formation normally overlies or rests upon the Shady or Tomstown dolomite formation. Thus on a geologic map it would normally be shown on the west or northwest of the Shady or Tomstown formation.

As you perhaps know the Shady or Tomstown dolomite formation is the main rock formation in which deposits of manganese have been found or are known to occur along the northwest base of the Blue Ridge in Virginia. Since the Rome formation normally overlies or rests upon the Shady or Tomstown formation it is possible that some deposits of manganese may occur in the base of the Rome or near and along the contact between the Rome and Shady-Tomstown formations. In fact several known deposits of manganese in the vicinity of Versuvius and northeast thereof, are shown on geologic maps as being located in the Rome formation near its contact with the underlying Shady-Tomstown formation. The Glasgow syncline, as mapped by Dr. Bloomer is as above mentioned, shown to be in the Rome formation. Since it overlies on the northwest of the Shady-Tomstown formation, it would be reasonable to expect the Shady-Tomstown formation to be involved also in a synclinal fold, or to lie within the boundary of the eastern limb of the indicated Glasgow synclinal fold. Again, since both the Rome and the Shady-Tomstown formation have undergone erosion and weathering, it is possible that the Shady-Tomstown formation would be encountered relatively near the surface, below the Rome formation, in the area immediately adjacent to the area of the North Fork of Chalk Mine Run, north (northeast) of the confluence of the South Fork and the North Fork of Chalk Mine Run.

Attached to this letter you will find a sketch of that portion of the geology of the Buena Vista quadrangle, as mapped by Dr. Bloomer, covering the immediate vicinity of the city of Buena Vista. The colors stop at the northern boundary of the Buena Vista quadrangle. North of the boundary, which would be in a part of the southern portion of the Lexington quadrangle, the approximate (?) axes of the Glasgow syncline, the North River anticline, and the eastern and western boundaries of the Rome formation, have been indicated in dashed pencil lines. The approximate course of (North Fork of) Chalk Mine Run has been indicated in a solid pencil line. It is thought that this sketch will prove helpful to you for the purposes desired, and it is further believed that the same indicates the possibility of the occurrence in the vicinity of your property, as described in your letter, of favorable structural conditions for the occurrence of deposits of manganese.

I had a conference Friday, October 16, with Mr. B. C. Burgess of the General Services Administration (Defense Mineral Exploration Administration) in regard to possible sites for further exploration for manganese in Virginia. I showed him Dr. Bloomer's geologic map of the Buena Vista quadrangle and indicated to him what I thought was the location of your property, pointing out that Dr. Bloomer's map indicated that favorable structural conditions should be found in the adjoining part of the Lexington quadrangle. I also showed Mr. Burgess the geologic map showing manganese deposits and structural conditions in the Elkton area in Page and Rockingham counties, accompanying U. S. Geological Survey Bulletin 940-B, entitled "Managanese Deposits of the Elkton area, Virginia," by Dr. Phillip B. King, published in 1943. I called the attention of Mr. Burgess to the fact that the detailed mapping of the Elkton area by King, showed a series of, more or less parallel anticlinal and synclinal folds in belts or bodies of Shady-Tomstown and Waynesboro (Rome) formation along the northwest base of the Blue Ridge in the Elkton area. It would be reasonable to expect, from the indication shown on Bloomer's geologic map of the Buena Vista quadrangle, that structural conditions, somewhat similar to those mapped by Kind in the Elkton area, might occur in the vicinity of Buena Vista and in the southern portion of the adjoining Lexington quadrangle.

Regretting the delay in replying to your request and hoping that the information given therein will prove of interest and help, I am

Sincerely yours,

WMMcG/evu
Enclosure

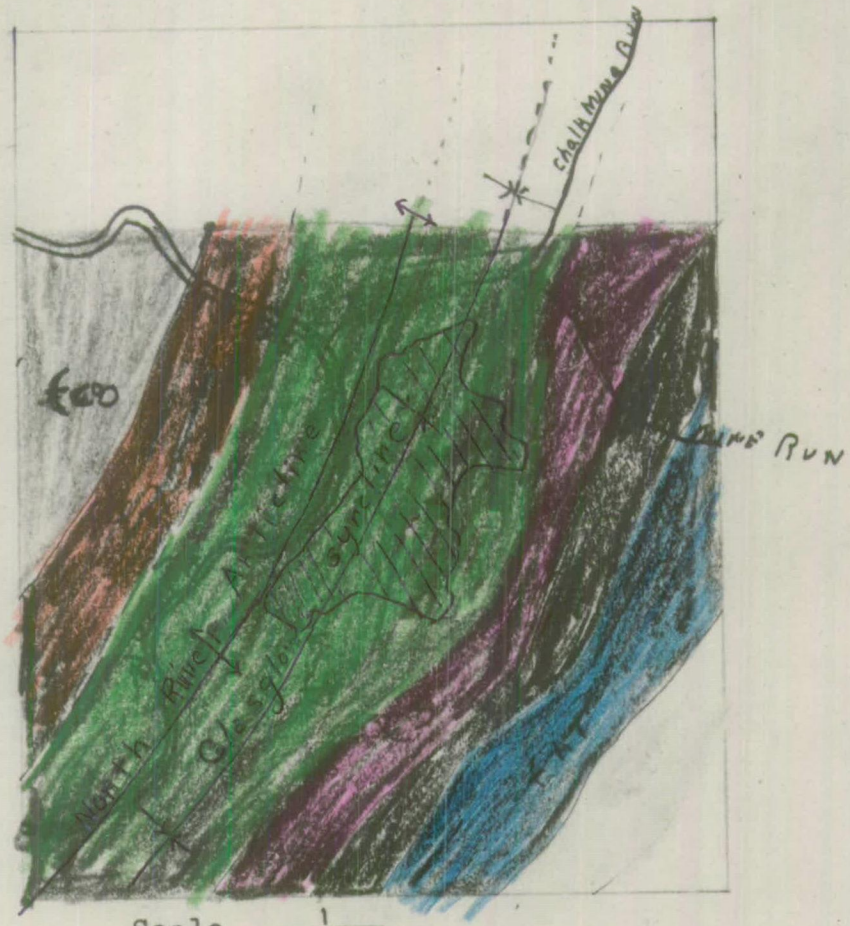
/s/ William M. McGill

William M. McGill
State Geologist

P.S. You might send the attached sketch map to the representative of the DMEA who visited the property in question or to the person with whom you have corresponded re this matter.

WMMcG

* Geologic Map of Buena Vista, Virginia



Scale $\frac{1}{62,500}$

tco	Conococheague
	Elbrook
	Rome
	Shady
	Erwin
	Hampton

Anticline

Syncline

* Geology of the Blue Ridge in the Buena Vista Quadrangle, Virginia by R.O.Bloomer. A thesis submitted to the Faculty of the University of North Carolina, 1941.

DICKINSON FIRE BRICK CO.

W. J. DICKINSON, JR.

J. T. L. DICKINSON, JR.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 20 1953

Virginia Clay and Silica Co.

BUENA VISTA, VIRGINIA

Box 614

October 19, 1953

WSM

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

Gentlemen:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

When the DMEA field team examined our property recently, incident to the above-docketed application, they questioned me as to whether I had any indication as to the existence of a synclinal fold on the property, after I had pointed out to them the striking similarity between the topography of the Chalk Mine Run drainage basin on our property and the topography at the Crimora manganese mine.

At the time, I had no such information, but on October 6 I requested from the Virginia Geological Survey, any evidence that they might have as to the existence of such a fold along this creek. I also requested this information on October 8 from a geologist, Mr. H. J. Werner, who I had heard had surveyed this area.

The Virginia Geological Survey notified me on October 14 that the State Geologist had received my letter but would not be able to answer until this week, since he was leaving for a field trip. Today, I received the enclosed letter from Mr. Werner, and it is requested that it be filed with my application.

It would appear from the statement of Mr. Werner, that the area in which our property is located does contain a number of subsidiary synclinal folds, as the topography and stream flow suggest, thus enhancing the possibility of the existence here of a basin like that at Crimora.

Sincerely yours,

W J Dickinson, Jr.

W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Enc.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 20 1953

THE ST. LAWRENCE UNIVERSITY
CANTON, NEW YORK

DEPARTMENT OF GEOLOGY
AND GEOGRAPHY

16 October 1953

Mr. W. J. Dickinson
Dickinson Fire Brick Company
Buena Vista, Virginia

Dear Mr. Dickinson:

In 1952 I surveyed the Blue Ridge portion of the Lexington quadrangle which probably contains the 700 acres of land referred to in your letter of 8 October 1953. This work was part of a geological mapping program conducted by the Virginia Geological Survey. A report is now being prepared for publication.

Although the scale of the manuscript map (one inch to the mile) is much too coarse for the kind of information you want some of the area was actually mapped at a scale of 3 inches to the mile. Such information may be helpful to you and I will be glad to send you what I have upon the appropriate approval of Mr. William M. McGill, Virginia State Geologist.

Primarliy Chalk Mine Run occurs in the northwest limb of the large Buena Vista anticline. Within this limb there are a number of subsidiary anticlinal and synclinal folds of varying degrees of magnitude. The identification and distribution of any one of these smaller structures within a limited area of 700 acres would, of course, call for a more precise survey than than the one made by me in 1952.

Yours truly,

Harry Jay Werner

Harry Jay Werner

Copy to:

Mr. William M. McGill, State Geologist
Virginia Geological Survey
Box 1428, University Station
Charlottesville, Virginia

Dorbet

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON, D.C.~~
College Park, Maryland

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 26 1953

October 19, 1953

W39

Memorandum

To: George C. Selfridge, Chairman, DMEA Operating Committee

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket No. DMEA-3134 - (Manganese)
Dickinson Fire Brick Company
Buena Vista, Rockbridge County, Virginia

Transmitted herewith are the original and three copies of the Field Team Report on Examination of the Dickinson Fire Brick Company property, Docket DMEA-3134, in Rockbridge County, Virginia.

W. T. Millar

W. T. Millar

Enclosures - 4

Closed OC
10-26-53

Reviewed by
DMEA OPERATING COMMITTEE
10-26-53
(date)

DEPARTMENT OF THE INTERIOR
Bureau of Land Management
RECEIVED
OCT 30 1953

10/30/53

FIELD TEAM REPORT ON EXAMINATION OF PROPERTY

by

G. L. Neumann of the Bureau of Mines and
Louis Pavlides of the Geological Survey

1. DMEA Docket No. 3134 - (Manganese)

2. Applicant: Dickinson Fire Brick Company
Buena Vista, Virginia

Reviewed by
DMEA OPERATING COMMITTEE
10-26-53
(date)

3. Summary, Conclusions and Recommendations:

The property of the Dickinson Fire Brick Company at Buena Vista, Virginia, is at the west base of the Blue Ridge Mountains. It is underlain by residual clays resting on the Tomstown dolomite and possibly on the Waynesboro formation. Iron ore was produced from this property to a depth of 200 feet during the 50-year period prior to the development of the Lake Superior iron ore ranges. During more recent years, fire clay was mined from this property and made into fire brick. No manganese production is recorded.

The field examination did not reveal any surface indications of manganese minerals in economic concentrations and it is doubtful whether the geologic and geophysical surveying proposed in the application could determine the presence of any manganese deposits.

This property does not appear to have sufficient merit to warrant Government participation in exploratory work. It is recommended by the Field Team that the application be denied.

4. Time spent on Property:

Examination was made on September 30 and October 1, 1953, by Louis Pavlides, representing the Geological Survey and G. L. Neumann, representing the Bureau of Mines. The Field Team was accompanied by W. J. Dickinson, Jr. on

September 30 and on October 1 by W. J. Dickinson, Jr. and Andrew J. Montgomery.

5. Name and Location of Property:

(a) The property is located on the north side of U. S. Highway 60, at the northeast corner of the village of Buena Vista, Virginia.

(b) Rockbridge County, Virginia.

(c) Buena Vista Mining District, Lat. 37°45' - Long. 79°21'

6. Condition and Seasonal Accessibility of Road to Property:

Access to the property is over an all-weather road which is the main highway and is in good condition.

7. Competency of Applicant and Operating Personnel:

The applicants, W. J. Dickinson, Jr. and J. T. L. Dickinson, are not mining men. They are both trained business executives and have served on director's boards of several businesses and banks. The applicants appear to be able to contribute their share of the cost of the proposed exploration program. They are considered capable of serving as administrators and intend to contract all of the work under capable technical guidance.

8. Applicant's Property Rights:

The Dickinsons own 408 acres in fee simple and have retained the mineral rights on 304 acres sold to the U. S. Forest Service.

9. Description of Property:

(a) This property lies at the west base of the Blue Ridge Mountain Range. Approximately 60 acres of this tract are in the valley. The remainder of the property is hillside which is steep in places. There is a cultivated terrace of probably 20 acres near the center of the property.

The surface plant consists of several buildings, where fire

brick was made. This plant has not operated since about 1910 and is in disrepair.

(b) There are several shallow open cuts with accompanying dumps where iron ore was mined until approximately 1910. Also several clay pits are on this property. No mining facilities or equipment are now on the property.

10. Geology and Ore Reserves:

The Dickinson Fire Brick Company property in Rockbridge County, Virginia, is at the western base of the Blue Ridge Mountains and is characterized by the general physiographic and geologic features common to this belt. The regional geology in the vicinity of Buena Vista, Virginia, is a monocline of Lower Cambrian rocks dipping to the northwest 1/. The oldest rocks, along the southeast side, are overlain by successively younger rocks to the northwest. In this belt of rocks, two types of geologic structures are most favorable for the accumulation of manganese ores in residual clays derived from underlying formations such as the Tomstown dolomite: (1) monoclines in which the residual clays lie above and within 300 feet of the Erwin quartzite, and (2) residual clays that fill troughs or synclines formed by the upper surface of the Erwin quartzite. However, ore deposition was influenced by topographic features and particularly by the early Tertiary valley floor peneplane rather than by structural features alone.

The Dickinson property at Buena Vista is underlain by residual clays formed on top of the Tomstown (Shady) dolomite and possibly the Waynesboro formation (formerly the Watauga shale). At least one ancient terrace is present

1/ Stose, G.W., Miser, H.D., Katz, F.J., Hewett, D.F. (1919): Manganese Deposits of the west foot of the Blue Ridge, Va.; Va. Geol. Surv. Bull. 17, Pl. 3.

on this property. Quartzite, however, is not present near any of the ferruginous or manganiferous "horizons" (see Fig. 1).

The geologic map (Fig. 1) submitted by the applicant is taken from a private report prepared by Ruffner 2/ and is of little value beyond showing the location of old iron and manganese prospect pits on the property. The Field Team examined three old, small, caved, and completely filled excavations along the strike of the so called "Manganese Bed" and one small, recently hand dug trench (Fig. 1, site 2). At the sites visited on this "Bed," along a strike distance of 4000 feet, the following manganese mineralization was discerned from specimens contained in the dumps and scattered around the old excavations:

(1) site 2: sparse, thin streaks and lumps of wad in a reddish brown clay. No hard lump or nodular manganese present.

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(4) site 5: fragments of a manganese cemented and partially replaced chert breccia. No hard lump or nodular manganese present.

The clay bank on the north side of the Big Chalk Mine Run (Fig. 1, site 1), was also examined. Manganese mineralization at this point consisted of stringers and seams of wad discontinuously exposed in the clay bank at two places about 20 feet apart. No hard manganese oxide nodules were present in this face nor in the stream bed near this point.

2/ Ruffner, W.H., (1889): Report on the landed property of the Buena Vista Company, Philadelphia, Pa.

A traverse down the Little Chalk Mine Run, starting from a point opposite the Leake bed (see Fig. 1), and ending downstream at its junction with the Big Chalk Mine Run resulted in the finding of five small, hard manganese nodules of the psilomelane type in the dry creek bed. The applicant's cited assay of 49.6 percent manganese was obtained by submitting for analyses several similar hand-picked nodules obtained from this creek bed.

The surface showings at this property do not indicate that any significant amount of manganese oxide "ore" is present. From the fragmentary and widely separated surface information there is no way of computing manganese reserves. The sparse amount of hard nodules and lumps of manganese found, suggest that these are probably widely scattered in a few small lean pockets in the clays and that concentration ratios in treating such material would be very high.

11. Past Operations:

Numerous iron ore leads are shown on the map (Fig. 1). Several of these were operated and a fair production was maintained over a period of forty years by the Jordan family and the Buena Vista Iron Company. Fire clay was also mined and made into fire bricks for consumption in the local iron furnaces. Mining in this area was discontinued about 1910. Mr. Armstrong, an aged resident living on part of the property informed the Field Team that a very small amount of manganese was mined, hand-sorted and marketed from one of the pits on the Manganese Bed (See Fig. 1, site 1), around 1910. This operation was carried out over a period of about one month. The Field Team was unable to find any recorded evidence of this production.

12. Availability of Manpower, Materials, etc.:

Necessary materials, supplies and equipment would be available at Buena Vista (1 mile), Lexington (7 miles), and Lynchburg (35 miles). Buena

Vista is served by the Norfolk & Western Railroad. Manpower is available locally but this is primarily an agricultural area and trained mining men are scarce. The Maury River flows west of Buena Vista and there is a large amount of water in one of the old mine pits. An ample water supply could be developed from these sources.

13. Statement of Applicant's Proposal, etc.:

The applicant has proposed a two phase program as follows: The first stage to consist of geologic and geophysical surveying; the second stage to consist of a physical exploration program including drilling, trenching, and systematic sampling and chemical analyses of samples collected during these operations. A final report covering the above stages would be prepared upon completion of the exploratory work.

It is not believed that an exploration program of this type is warranted on a property that has such limited surface indications of manganese ores. The proposed program is not only extremely generalized but also highly speculative. Specifically, the following criticisms appear to be in order:

(1) It is questionable whether the geologic mapping of the small area described in this application would contribute materially to the success of such an exploration program. Geologic mapping, if undertaken, should be more comprehensive in scope and should encompass enough of the surrounding terrain to enable the geologic structure and stratiography to be determined. It is questionable whether geologic mapping on a regional scale extending considerably beyond the applicant's property, falls within the province of a DMEA exploration program.

(2) A resistivity survey on this tract may indicate the thickness and shape of the clay mantle resting on the underlying formations and possibly the

thickness of gravel on the terraces covering the clay, but it is not likely that any specific manganese mineralization can be detected by such a survey. In brief, the target outlined would be a clay body which would then have to be drilled on a closely spaced grid system to determine the presence of manganese in economic concentrations. Since the property is almost entirely underlain by clay anyway, little would be gained by further defining its depth with geophysical methods, which would only be rechecked by later drilling.

(3) The physical exploration program cites that diamond drilling may be used for testing this deposit. It is extremely unlikely that diamond drilling can be used in this type of material and it is even dubious whether auger drilling would provide reliable samples for assaying. Certainly, samples for concentration ratios could not be determined from either of these types of drilling.

The applicant, W. J. Dickinson, Jr., in his discussion with the Field Team continually compared his property to the Crimora mine in Augusta County, Virginia, and suggested that he also had a synclinal deposit at Buena Vista. However, the geologic map (Pl. 111) of Virginia Geol. Surv. Bull. 17, (1919), clearly shows the Crimora syncline while in the vicinity of Buena Vista the structure, as far as the limit of mapping extends, is a monocline dipping to the northwest. The applicant also insisted that although the surface indications of manganese on his property were not encouraging it was no proof that he did not have a deposit at a depth of 200 feet or more. Experience in this province shows that virtually all the known manganese "ore" occurrences are at places where manganese oxides crop out naturally or were discovered in mining iron ore.

The applicant appeared to realize the generalized and ambitious nature of the proposed exploration proposal and indicated he would agree to any

reasonable modifications. However, he would not want to submit a new application because of the additional waiting period pending a decision by the DMEA. He felt he could not afford any further delay because he already has received an offer for his mineral rights. Any further great delay in obtaining a reply to his application, however, might result in the loss of the prospective lessor, and he therefore requests the greatest possible haste in informing him of the final decision on this application. The surface indications on this property, however, are too meager to warrant proposing a revised exploration program.

W. T. Millar

W. T. Millar, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

John B. Hanley for

Quentin D. Singewald, U. S. Geological
Survey Member, Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

College Park, Maryland
October 16, 1953

W. J. DICKINSON, JR. J. T. L. DICKINSON, JR.

Virginia Clay and Silica Co.

BUENA VISTA, VIRGINIA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 16 1953

Rec'd Iron & Ferro Alloys Div. Oct 19, 1953

Box 614
October 15, 1953

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

Gentlemen:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

When the DMEA field team examined our property recently, they called my attention to an error in addition in my application for aid.

F.T. report not yet rec'd in DMEA. la. 10/19/53

Please reduce the estimated total cost of the exploration to $19,790.00 on the letter of transmittal, dated July 27, 1953, and please correct the total cost on page 3 of enclosure 2 to that letter to read "$19,000.00" instead of "20,000.00".

If you do not approve the application in full, but will approve a reduced program of exploration, we would greatly appreciate your forwarding a contract that you will approve, rather than requiring us to submit another application.

Sincerely yours,

W J Dickinson, Jr.
W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Miller expects to send in a report to-day recommending denial 10/19/53 WSM

JB

400

FILE COPY
SURNAME:

Hopkins
Martin

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

SEP 24 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMA 3134 - Manganese
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letter of September 19, 1953, requesting information about the status of the subject application.

We have been advised that a geologist of the Field Team, Region VIII, will be available for a field examination of your property during the early part of October, but the Field Team will, of course, arrange the timing of the examination directly with you. After the examination is completed, the same geologist should be able to give you an estimate of the time that will be required to prepare and send to us for review the usual Field Team report. You will be advised of our conclusions shortly after that report is received here.

Sincerely yours,

FRANK E. JOHNSON

ACTING Administrator

JHopkins/WSMartin/ls
9/23/53

cc: Docket
Field Team, Reg. 8
Code 400
Adm. Read. File
Martha Carr, USGS
Gilbert DeHuff, USBM

R.C.G.
9-24-53

T.T.DICKINSON. DAILY CAPACITY 20,000 W.E.DICKINSON.

Docket

LIME BOND SILICA BRICK.

DICKINSON FIRE BRICK COMPANY,

CLAY BOND SILICA BRICK.

MANUFACTURERS OF

HIGH GRADE FIRE BRICK.

FINE GROUND FIRE CLAY

BUENA VISTA, VA.

Box 614
September 19, 1953

WSM

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

Attention Mr. C. O. Mittendorf, Administrator

Dear Mr. Mittendorf:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

In your letter of September 3, 1953 you stated that at that time you were unable to answer my question as to when we might expect a decision regarding my application for exploration assistance which we filed on July 27, 1953.

Now, almost nine weeks from the date of filing, we hope that the processing of our application has at least reached the point at which we may be informed as to when we may expect a ruling on the application.

We will therefore greatly appreciate any information that you may release at this time concerning our application.

Sincerely yours,

W J Dickinson, Jr.

W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

FILE COPY
SURNAME:

400

Rutledge
Selfridge
Millar

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

SEP 9 - 1953

Mr. W. T. Millar, Executive Officer
DMEA Field Team, Region VIII
Bureau of Mines
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company Mine
Rockbridge County, Virginia

Dear Mr. Millar:

Reference is made to Mr. H. L. Burmeister's request for copies of the applicant's maps referred to in our letter of August 5, 1953, to Mr. Dickinson.

Enclosed are copies of the three maps for your files.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

APPROVED

J. H. Hedges
Member, Bureau of Mines

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

FARUTLEDGE:foc
cc: Docket
Code 400
FT. REG. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

Enclosures

R.C.S.
9-9-53

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 1 - 1953

September 1, 1953

Memorandum

To: George C. Selfridge, Chairman, DMEA Operating Committee

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

Subject: Docket No. DMEA-3134 - (Manganese)
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

We are in receipt of a letter from the Operating Committee, under date of August 27, 1953, referring the subject docket to the Field Team for review and possible examination.

Photostat copies of applicant's maps were made as stated in a letter of August 5, from Mr. W. S. Martin, Acting Chief, Iron and Ferro-Alloys Division, to the applicant. As our file of this application contains no maps would you please have a copy of each sent to the Field Team, Region VIII.

H. L. Burmeister

H. L. Burmeister

MDL

400

FILE COPY
SURNAME:

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

SEP 3 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company Mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

This will acknowledge receipt of your letter dated August 28, 1953, requesting copies of reports on your property by Bureau of Mines engineers.

We regret being unable to comply with your request because these reports are unpublished and are not available for distribution, outside of the Government.

We are also unable at this time to answer your question as to when you may expect a decision regarding your application. As stated in our letter of August 27, 1953, the matter has been referred to the DMEA Field Team for Region VIII for review and possibly a field examination. When the Field Team's report is received, your application will be given prompt attention and you will be advised of our conclusions.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

JHopkins:foc
9-3-53
cc: Docket
Code 400
FT. Reg. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

R.C.G. 9-3-53

W. J. DICKINSON, JR.

Docket

J. T. L. DICKINSON, JR.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 31 1953

Virginia Clay and Silica Co.

BUENA VISTA, VIRGINIA

Box 614

August 28, 1953

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

Attention Mr. C. O. Mittendorf, Administrator

Dear Mr. Mittendorf:

Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

Your letter of August 27 concerning the above-docketed application, filed by me on July 27, 1953, was received this date. Since we desire to expedite the exploration, you may be sure that we will render all assistance possible to the members of any field team that your administration may designate to make a field examination of the property.

Until you mentioned it in your letter, I was unaware that Bureau of Mines engineers examined our property in January 1951, although I remember quite well having walked over the property with the Bureau of Mines engineer who made the surface examination in May 1950. The 1951 examination must have been made while I was absent from this locality on extended active duty in the United States Marine Corps. If it is possible for your office to release any of the results of these two examinations, I would appreciate your having them forwarded to me so that I may refer them to Dr. Byron N. Cooper of Virginia Polytechnic Institute, who will be the geologist in charge of the technical aspects of the exploration if it is approved by the DMEA.

It is also requested, that information be supplied as to the approximate date on which we may expect a ruling on our application, in order that we may adjust our planning accordingly.

Sincerely yours,

W J Dickinson, Jr.

W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

FILE COPY
SURNAME:

400
Rutledge
Horton
DeHuff
Ellis
Selfridge

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

AUG 2 7 1953

Mr. W. T. Millar, Executive Officer
DMEA Field Team, Region VIII
Bureau of Mines
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Dickinson Fire Brick Company mine
Rockbridge County, Virginia

Dear Mr. Millar:

Reference is made to the subject application for exploration assistance which is being referred to your office for review and possibly a field examination of the property if an examination is warranted.

The applicant proposed to explore a clay deposit on top of the Shady dolomite by geophysical methods to determine its size. If a reasonably large body of such clay is indicated, the geophysical survey is to be followed by a diamond drilling program to determine if manganese is present in economic quantities.

It is noted that this deposit was examined by engineers of the Bureau of Mines in May 1950 and January 1951. The data available here indicate the property has little merit. However the application is being referred to you for review and possibly a field examination of the property as more information may be contained in the complete reports.

Martha Carr, Geological Survey, has prepared a memorandum covering the subject application and two copies are enclosed for your information.

Sincerely yours,

Ernest Wm. Ellis 857

ACTING Chairman, Operating Committee

APPROVED:

M. H. Kline 857
Member, Bureau of Mines

D. M. Larrabee 857
Member, Geological Survey

FARutledge:foc
8-25-53
cc: Docket
Code 400
Ft. Reg. 8
Adm. Reading File
Operating Comm.
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

HHH 8-27-53

FILE COPY
SURNAME: 316

400

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

AUG 27 1953

Rutledge
Hollins
DeHuff
Fels
Fitzgerald
Kline
Selfridge

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
~~Dickinson Fire Brick Company~~
Dickinson Fire Brick Co. mine
Rockbridge County, Virginia

Dear Mr. Dickinson:

Reference is made to the above-docketed application for exploration assistance which has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. T. Millar, Executive Officer, DMEA Field Team, Region VIII, Bureau of Mines, Eastern Experiment Station, College Park, Maryland, for a field review.

Data available to the Government in Washington indicate that the referenced property was examined by engineers of the Bureau of Mines in May 1950 and January 1951. Therefore a field examination may not be necessary as sufficient information may already be available. Should a field examination be required, however, any assistance that you can render the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:foc
8-25-53
cc: Docket
Code 400
FT. Reg. 8
Operating Comm.
Adm. Reading File
Gilbert DeHuff, USBM
Mrs. Martha Carr, USGS

HHR
8-27-53

Docket

IN REPLY REFER TO:

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

August 3, 1953

Memorandum

WSM

To: W. S. Martin, DMEA

From: Martha Carr, USGS
Exploration application

Subject: Dickinson Fire Brick Company $20,790 DMEA-3134 Manganese
W. J. Dickinson, Jr. and J.T.L. Dickinson, Jr. (partnership)
Box 614,
Buena Vista, Va.

Property: The property consists of 390.83 acres of land located in So. River Dist., Rockbridge County, Commonwealth of Virginia; also approximately 17 acres located in City of Buena Vista, Va., consisting of 5-20-part of 2, 6-22-entire, 6-35-1 to 4 inclusive, 7 to 24 inclusive, 6-51-12 16/100 acres, 6-4 acres; also approximately 304.47 acres of land located in South River District, Rockbridge County, sold by Dickinson Fire Brick Co. in 1937, regarding which the deed states "The parties of the first part hereby reserve the right to all mineral and brick clay on the said tract of 304.47 acres, together with the right of ingress and egress for the purpose of removing same." The parties of the first part constitute Dickinson Fire Brick Company, the name by which the property is known.

Proposal: The proposed investigation consists of a preliminary survey to determine the extent, thickness, and shape of the clay deposit on top of the Shady dolomite, (Tomstown dolomite) because the quantity of any manganese ores that occurs on this property will be dependent upon the depth and areal extent of the residual mantle. Specifically, it is intended to cover the property with a detailed geological examination and concomitant earth resistivity survey consisting of closely spaced northwest-southeast traverses across the property. Based upon the results of the earth resistivity and geological studies, a detailed layout of drill holes would be prepared as the basis for the second phase of exploration.

Copy retained

In developing this layout, detailed studies would be made of all pits and prospects with showings of manganese, and some trenching and stripping of cover by bulldozing would be done in an attempt to determine the places wherein the manganese appears to be most localized and concentrated on or near the surface. Depending upon the facility with which the clays can be penetrated, power-auger borings or diamond drilling would be done. The footage of borings necessary to test the more promising indications of manganese and to explore the possible occurrence of manganese in the clay at depth is estimated to be 4,500 feet, based on holes to a possible maximum depth of 300 feet. Detailed geological study and logging of the cores and preparation of samples of mineralized zones for chemical analysis would follow. A final report covering all stages of the investigations, and including geologic cross sections, projections of borings, bedrock profiles, and chemical analyses of manganese encountered in drill holes would be prepared. The work would start within 20 days and be completed within 4 months from the date of an exploration project contract.

Geology: The principal manganese ore deposits of the general area of the applicant's property occur in the mantle of residual clay that rests on the Tomstown dolomite, formerly called the Shady dolomite (lower Cambrian), and a few deposits consist of veins filling fractures in the Antietam quartzite (lower Cambrian). The manganese-bearing clay has resulted from the deep weathering of dolomite, limestone, and shale beneath the surficial gravel of the valley-floor peneplain. The deposits, which occur in association with synclines, monoclines, and faults, are similar to many others that occur along the west foot of the Blue Ridge, including those of the Lyndhurst-Vesuvius and Crimora districts to the northeast. These deposits have been described in U. S. Geological Survey Bulletin 940-F, by Maxwell M. Knetchel, 1943, and Virginia Geological Survey Bulletin 17, by G. W. Stose, H. D. Miser, F. J. Katz, and D. F. Hewett, 1919, respectively. The productive deposits of the Lyndhurst-Vesuvius district have been found to be extremely variable in size, form, attitude, and spacing, as well as in quantity and grade of ore. The ore was mined in open pits and underground workings; and most of it had to be treated in log washers followed by hand picking. Pyrolusite and psilomelane, mixed with more or less limonite and in places associated with considerable wad, are the chief ore minerals. The manganese ores in this district carry 39-59% Mn with a trace to 6% Fe.

Recommendation: From the information available, the proposed exploration would appear to be of a somewhat speculative nature. The report on the Lyndhurst-Vesuvius district, however, states that bodies of good manganese ore may lie concealed under large areas of gravel, and prospecting for them by geophysical methods might be worth trying. The same statement may apply to the applicant's property. If the intermixture of the limonite with the manganese oxide minerals does not present a difficult metallurgical problem, it is recommended that the application be referred to the field team for advice.

Martha Carr

Martha Carr

FILE COPY
SURNAME:
400

Rutledge
Martin
Rutledge

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

AUG 5 1953

Mr. W. J. Dickinson, Jr.
Dickinson Fire Brick Company
Box 614
Buena Vista, Virginia

Re: Docket No. DMEA 3134 - Manganese
Dickinson Fire Brick Company
Rockbridge County, Virginia

Dear Mr. Dickinson:

The following enclosures received with the above docketed application for exploration assistance are returned herewith as you requested.

Enclosure 3 - Photo of map showing property lines
Enclosure 4 - Aerial photo of property with description.
Enclosure 5 - Map of property showing ore veins

We have prepared photostats of these data and the originals are no longer required here.

Sincerely yours,

SIGNED

W. S. Martin, Acting Chief.
Iron and Ferro-Alloys Division

Enclosures

FARutledge/foc
8-5-53
cc: Docket
Code 400
Adm. Reading File
FT. Reg. VIII

F.C.R.
8-5-53

July 29, 1953

DICKINSON FIRE BRICK COMPANY
c/o W.J. Dickinson, Jr.
Box 614
Buena Vista, Virginia

Subject:
Re: DMEA-3134
Exploration Assistance

My dear Mr. Dickinson:

The receipt of your application dated July 27, 1953, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3134 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-3134 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

W. J. DICKINSON, JR.

J. T. L. DICKINSON, JR.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 29 1953

Virginia Clay and Silica Co.

BUENA VISTA, VIRGINIA

Box 614

July 27, 1953

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

Gentlemen:

I am forwarding herewith, an application for aid in an exploration project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended.

We have had a sample of manganese ore from our property analyzed, showing 49.6% pure manganese, 8.8% silica, and 3.024% iron. Samples will be forwarded if desired.

In compliance with instruction 5(d) of Form MF-103, it is stated that both owners are qualified to conduct overall supervision of the nontechnical aspects of exploration and to keep suitable records and accounts of operations which may be required, since both have business administration degrees from recognized colleges and are owners, directors, and stockholders in several businesses and banks.

In compliance with instruction 6 of Form MF-103, it is estimated that in addition to the costs listed in Enclosure 2 to Form MF-103, overall supervision by owners will amount to $640.00, based on a rate of $2.00 per hour, 4 hours per day, 5 days per week, for 16 weeks. In addition, travel, telephone, and postage expenses incurred by the owners in supervising the project are estimated at $150.00. Estimated total cost of the project will be $20,790.00.

We will be glad to supply any further information that may be required.

Yours very truly,

W J Dickinson, Jr.

W. J. Dickinson, Jr.
DICKINSON FIRE BRICK COMPANY

Enc.6:
Application on Form MF-103 (Revised April 1952) (4 copies)
Enc.1 to application - Continuation of inst. 3(a) (4 copies)
Enc.2 to application - Report of Dr. B. N. Cooper (4 copies)
Enc.3 to application - Photo of map showing property lines (to be ret.)
Enc.4 to application - Aerial photo of property with description
Enc.5 to application - Map of property showing ore veins (to be ret.)

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Department of the Interior
Defense Minerals Administration
RECEIVED
JUL 29 1953

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. DMEA-3134
Metal or Mineral
Date Received 7/29/53
Estimated Cost
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: Dickinson Fire Brick Company; Box 614; Buena Vista, Virginia; Attention W. J. Dickinson, Jr. (Partnership, State of Virginia). Partners are: Mr. W. J. Dickinson, Jr., 202 N. Maple Ave., Buena Vista, Virginia and Mr. J. T. L. Dickinson, Jr., 125 N. Maple Ave., Buena Vista, Virginia.

(*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. See 1(a).

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. Not applicable.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. See 1(a).

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 390.83 acres of land located in So. River Dist., Co. of Rockbridge, Commonwealth of Va. Also approximately 17 acres located in City of Buena Vista, Va. consisting of 5-20-part of 2, 6-22-entire, 6-35-1 to 4 inclusive, 7to 24 inclusive, 6-51-12 16/100 acres, (Cont. on Enc. 1

(*b*) State any mine name by which the property is known. Dickinson Fire Brick Co.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner of 407.83 acres and owner of mineral rights on additional 304.47 acres.

(*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. Not applicable.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable.

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. See enclosure 2.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See enclosure 2.

(*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. See enclosures 2 and 3.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See enclosures 2 and 4.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. See enclosures 2 and 4.

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

(*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. See enclosure 2.

(*c*) The work will start within 20 days and be completed within 4 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. See enclosure 2, and letter of transmittal.

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: See letter of transmittal.

(*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.). See enclosure 2.

(*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. See enclosure 2.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See enclosure 2.

(*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. See enclosure 2.

(*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. No rehabilitation or repairs necessary.

(*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. None.

(*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. See enclosure 2.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above. None.

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)? Yes.

(*b*) How do you propose to furnish your share of the costs? By cash payments at a ratio of 25% of the allowable costs incurred, as they accrue.

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper. Partners have adequate personal assets to finance their portion of the allowable costs incurred.

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 July 27, 1953

Dickinson Fire Brick Company
(Applicant)

By W. J. Dickinson, Jr.
W. J. Dickinson, Jr.
Partner

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

Enclosure 1

CONTINUATION OF INSTRUCTION 3(a), FORM MF-103 (REVISED APRIL 1952)

6-4 acres. Also approximately 304.47 acres of land located in South River District, County of Rockbridge, Commonwealth of Virginia, sold by Dickinson Fire Brick Company in 1937, regarding which the deed states "The parties of the first part hereby reserves the right to all mineral and brick clay on the said tract of 304.47 acres, together with the right of ingress and egress for the purpose of removing same". The parties of the first part constitute Dickinson Fire Brick Company.

Enclosure 2

BYRON N. COOPER
GEOLOGIST
BOX 634
BLACKSBURG, VIRGINIA

V. P. I. OFFICE
8261 EXT. 380

CAMPUS RESIDENCE
8736

INFORMATION PERTAINING TO APPLICATION FORM MF-103 OF DMEA OF U. S. DEPARTMENT OF THE INTERIOR, BEING SUBMITTED BY W. J. DICKINSON AND J. T. L. DICKINSON OF BUENA VISTA, VIRGINIA.

4. Physical Description.— (a) No mining operations now in progress. Small quantities of fire clay have been mined in past. Several prospect pits showing fire clay, wad, and some lump manganese; fire clays from property were in part produced by present owners.

(b) No appreciable quantity of manganese ore is known to have been shipped from this property.

(c) The property, as shown on the sketch map accompanying this application, is situated at the west foot of the Blue Ridge and trends northeasterly parallel to the strike of the contiguous Lower Cambrian quartzites. The greater part of the area is covered with alluvium and colluvium, the latter from the contiguous quartzite ridges. Beneath the shallow cover of stream- and gravity-transported loose rock, is an accumulation of refractory clay, wad, and other manganese oxides—which materials occur upon and conceal the outcrop of the Shady dolomite. The manganese is believed to have a mode of occurrence similar to that at Crimora, Augusta County, Virginia, and several workings of lesser extent in the Lyndhurst-Vesuvius district (described by M. M. Knechtel, USGS Bull. 940-F, 1943) of Augusta and Rockbridge counties, Virginia. The manganese occurs in irregular masses, lumps, nodules, and stringers in clay, underconditions where open-pit methods could be employed for recovery of any manganese found.

Tonnages of manganese in excess of 10,000 tons have been taken from properties geologically and topographically situated similar to the property covered by this application. At current prices for 48 per cent ore, or better, it is believed feasible to remove quantities of such ore as small as 10,000 tons from said property by open pit methods, providing that workable concentrations of ore can be found within 300 feet depth from the surface. This possibility is enhanced considerably by the fact that the associated clay has refractory qualities which would render it a merchantable resource under favorable conditions of development of the property primarily for some other resource, such as manganese. Occurrence of the latter in a number of diggings and exposures where the surficial debris has been stripped off suggests the possibility that the manganese is disseminated in the clay in sufficient quantity to be worthy of exploration.

(d) Accompanying map indicates ready accessibility of property for exploration.

(e) Necessary manpower, materials, and equipment can be secured readily for exploration of property.

Dickinson Fire Brick Co., Box 614, Buena Vista, Va.

5. (b) The proposed investigation would consist of a preliminary survey to determine the width and depth of the clay deposit on top of the Shady dolomite, because the quantity of any manganese ores that occur on this property will be dependent upon the depth and areal extent of the residual cover. Unless preliminary investigations can disclose a reasonably large body of such clay to persist to depths considerably greater than reached in any of the old prospect pits it is not likely that commercial manganese could occur. The extent, thickness, and shape of the clay that will serve as host to any manganese that may be present, can be determined readily from geological and geophysical studies. Specifically, it is intended to cover the property with a detailed geological examination and concomitant earth resistivity survey consisting of closely spaced northwest-southeast traverses across the property. The clay body may be too thick to determine fully and precisely by earth resistivity methods, but if this possibility develops the fact will in itself indicate the great quantity of clay that could serve as host to occurrences of manganese.

Based upon the results of the earth resistivity and geological studies a detailed layout of drill holes would be prepared as the basis for the second phase of exploration of the property. In developing this layout, detailed studies would be made of all pits and prospects with showings of manganese, and some trenching and stripping of cover by bulldozing would be done in an attempt to determine the places on the property wherein the manganese appears to be most localized and concentrated on the surface or near the surface. Depending upon the facility and ease with which the clays can be penetrated power-auger borings or diamond-drilling would be done. The footage of borings necessary to test the more promising indications of manganese and to explore the possible occurrence of manganese in the clay at depth is estimated to be 4,500 feet, based on holes ranging down to a possible maximum of 300 feet. Detailed geological study and logging of the cores and preparation of samples of mineralized zones for chemical analysis would follow along with drilling. A final report covering all stages of the investigations, and including geologic cross sections, projections of borings, bedrock profiles, and chemical analyses of manganese encountered in drill holes would be prepared to satisfy fully the requirements of the Government.

(d) The geological and geophysical work would be directed by B. N. Cooper who would be responsible for preparation of all the technical reports, maps, etc., connected with the project. C. E. Sears, Jr., assisted by qualified assistants (probably V.P.I. students) would make the earth resistivity survey. These persons would work under the supervision of the owners.

Est. Cost

6. Estimate of Costs.— Independent contracts: Diamond-drilling and drive-penetration of clays and included manganese @ approximately $3.00 per foot for minimum of 1,500 feet, probably by Mott Drilling Company, Charleston, W. Va.; and 6-in. power-auger boring @ $0.75 per foot--the two methods to be used to extent and degree dictated by nature of the material and desired depth of penetration of borings and by consistency of tested materials; maximum estimated cost if all borings done with diamond bit: 4,500 feet..... $13,500.00

ENCLOSURE 2

Independent contracts cont'd.:

Earth resistivity survey of property by C. E. Sears, Jr. and assistants working under contract between owners and the Virginia Engineering Experiment Station, V. P. I., Blacksburg, Va. @$500 per week, including field expenses of party chief and his assistants and their salaries..... $2,500.00

Total Independent Contracts.....$16,000.00

Labor, supervision, and consultants: Unskilled hand labor for trenching, digging, and miscellaneous labor on moving equipment and supplies, all figured at minimum hourly rate 500.00

Supervision by owners (to be supplied by owners)
Technical supervision and consultation $750
services plus actual expenses estimated at $175 925.00
(services provided by B. N. Cooper)

Total labor, supervision, and consultants $1,425.00
(figure listed excludes owners supervisory work on project)

Operating Materials and Supplies: Use of one bulldozer and small shovel, with operators, on hourly basis as needed for approximately 75 hours @$10 per hour 750.00

Miscellaneous: Analytical work on borings and cores 450.00
Accounting 300.00
Insurance 75.00
Total Miscellaneous $825.00

5,250.00

$21,250.00

No Contingencies

COST SUMMARY:

Contractual.....	$16,000.00
Labor, supervision, & consultants	$ 1,425.00
Other operations	$ 750.00
Miscellaneous	$ 825.00
Total Cost	$20,000.00

The above material organized and prepared by the undersigned at the behest of W. J. Dickinson, one of the owners of the property.

Byron N. Cooper
July 25, 1953

Submitted in Quintuplicate

Dickinson Fire Brick Co., Box 614, Buena Vista, Va.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 NORTH DIVISION STREET
SPOKANE 2, WASHINGTON

OFFICIAL BUSINESS

SPOKANE, WASH.
JY 8 8 00PM

Chairman, Operating Committee
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

AERIAL PHOTOGRAPH OF DICKINSON FIRE BRICK CO. PROPERTY, 1320'=1"(App)

672 acres located in ROCKBRIDGE COUNTY, VIRGINIA between BUENA VISTA, VIRGINIA and GEORGE WASHINGTON NATIONAL FOREST. 17 adjoining acres located within BUENA VISTA city limits. Population of BUENA VISTA-5,000. Population within radius of 25 highway miles-35,000.

Note: (1) R.R. siding to plant site (rails will have to be laid)
(2) Connecting point for elec., natural gas, city water-sewers
(3) BUENA VISTA corporate limits
(4) Brick plant
(5) Level orchards for building sites
(6) 6"water mains from collecting basins on property

DM59-315

AERIAL PHOTOGRAPH OF DICKINSON FIRE BRICK CO. PROPERTY, 1320'=1"(App)

672 acres located in ROCKBRIDGE COUNTY, VIRGINIA between BUENA VISTA, VIRGINIA and GEORGE WASHINGTON NATIONAL FOREST. 17 adjoining acres located within BUENA VISTA city limits. Population of BUENA VISTA-5,000. Population within radius of 25 highway miles-35,000.

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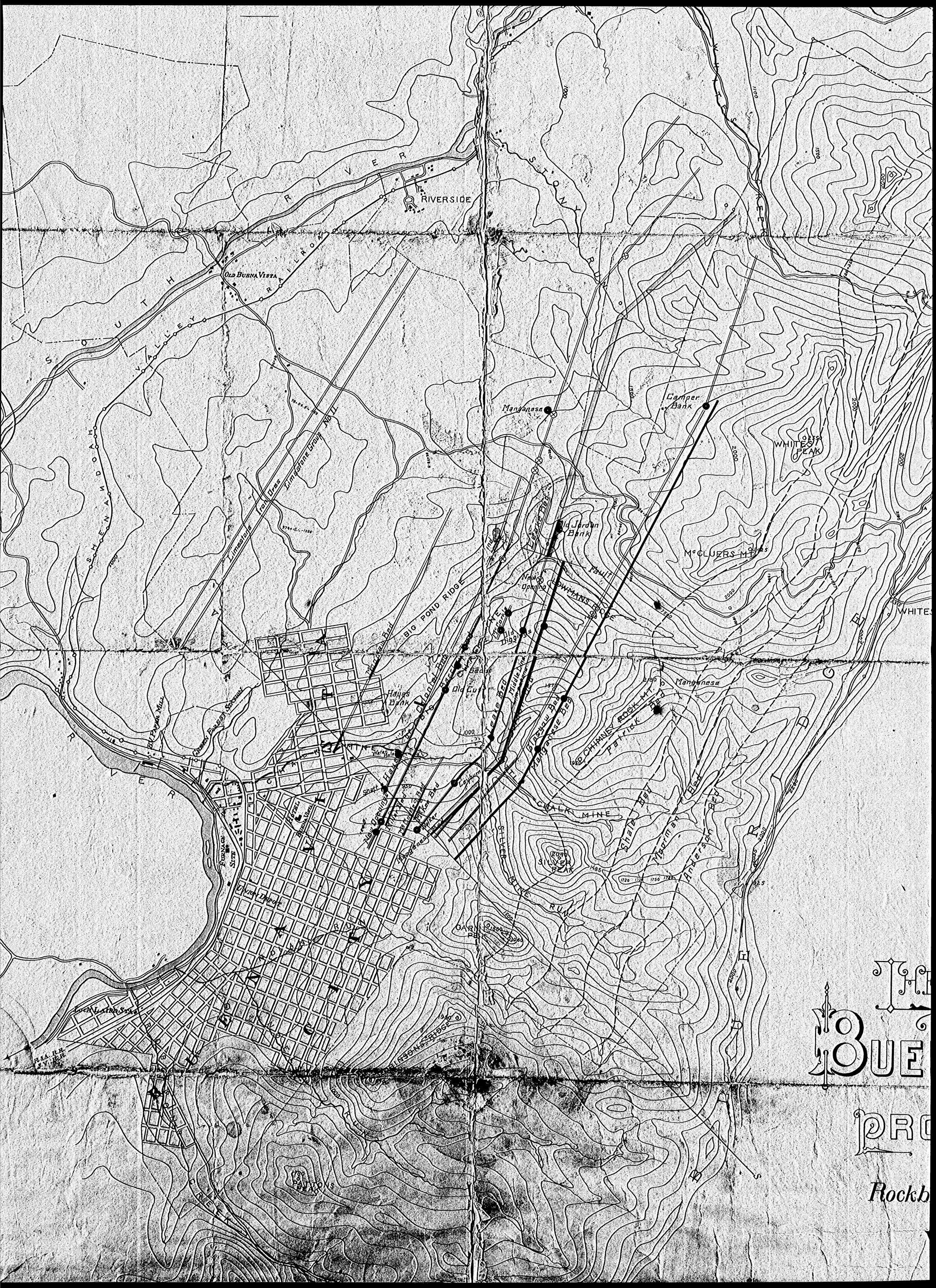
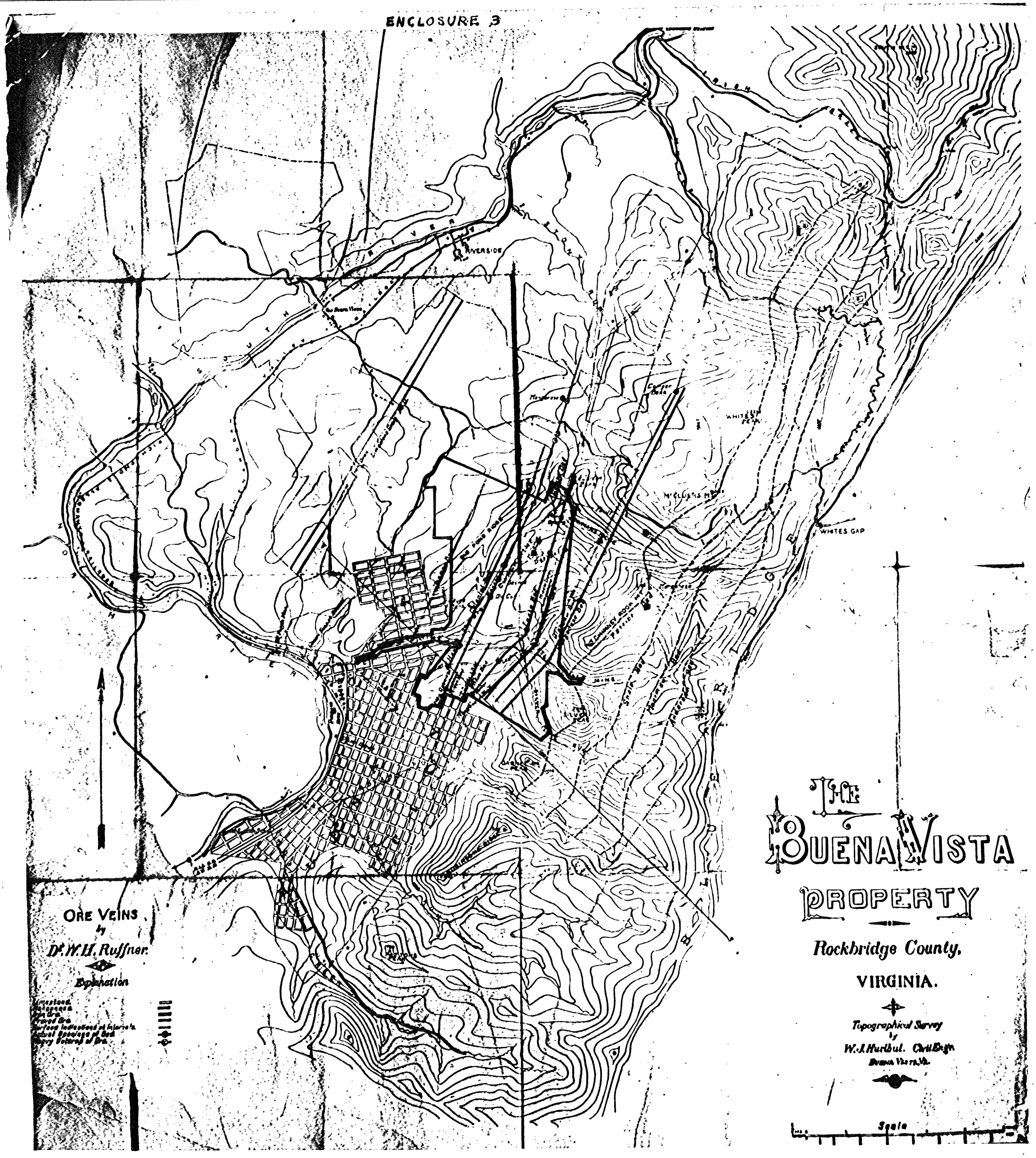


The Buena Vista Property

Rockb

ENCLOSURE 3



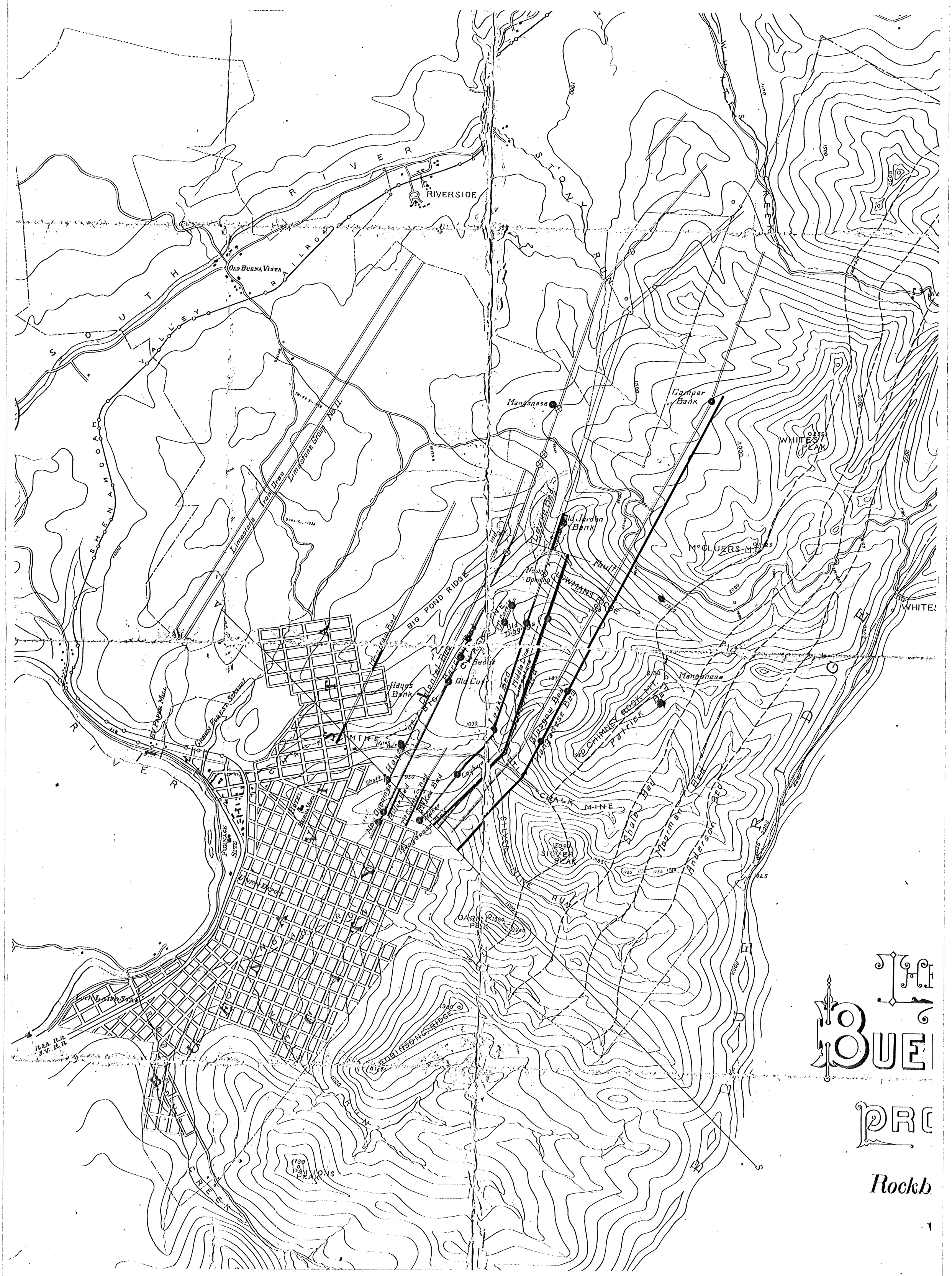
NOTE: DICKINSON FIRE BRICK COMPANY PROPERTY OUTLINED IN BLACK IN CENTER OF THIS PHOTO.

SEE ENCLOSURE 5 FOR ORIGINAL MAP FROM WHICH THIS PHOTO WAS MADE.

PLEASE RETURN THIS PHOTO TO:

DICKINSON FIRE BRICK CO., BOX 614, BUENA VISTA, VA.

DMEA-
3134



Buena Vista

Rockb

FIG. 1

Dickinson Fire Brick Company, Buena Vista, Va.

DMEA 3134

EXPLANATION

Limestone

Iron ore and manganese

Actual openings of bed

Heavy outcrop of ore

Geology by W.H. Ruffner 1889

X 1-2 Sites visited by Field team

Scale: 1" = 1000' (approximate)

Outline of property

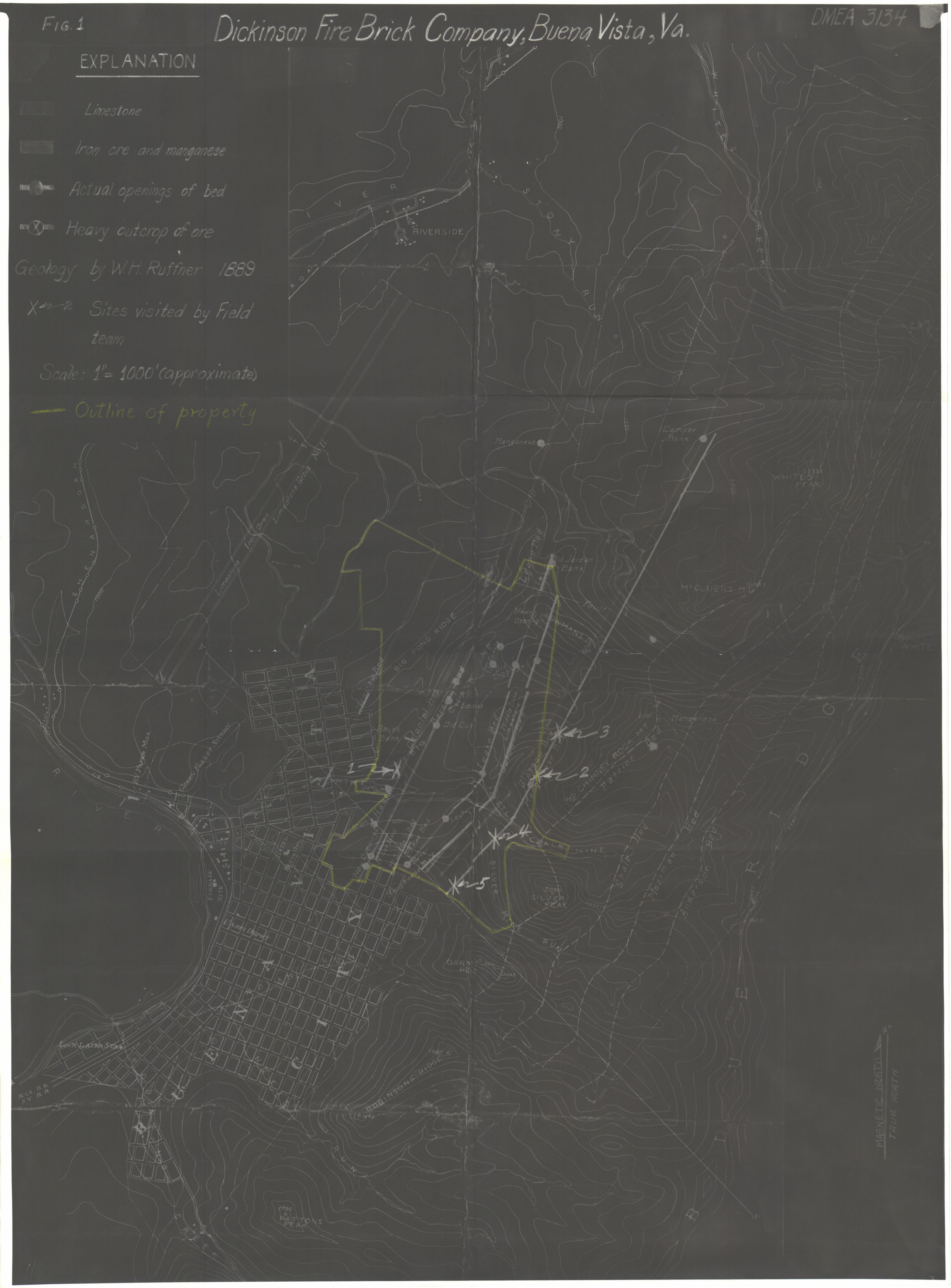


FIG. 1

Dickinson Fire Brick Company, Buena Vista, Va.

DMEA 3134