July 27, 1951

Memorandum

To: Landon Strobel, Executive Secretary
Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 80, DMA docket 103, and Undocketed exploration loan application of May 3, 1951--The Continental Sulphur and Phosphate Corporation, Sunlight Basin, Park County, Wyoming

Enclosed herewith are three copies of a map concerning the properties of the Continental Sulphur & Phosphate Corporation. These maps are to be attached to the above report by Ogden Tweto, which was forwarded to you on May 3, 1951.

J. H. East, Jr.

A. H. Koschmann

Enclosures

ld

cc: DMA
Koschmann

Mining Division
Region IV

April 24, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMA Dockets 80 and 103, Contract I-DMA-F28, Continental Sulphur & Phosphate Corporation, Sunlight Basin, Park County, Wyoming

Enclosed are eight copies each of the final reports on DMA-103, Contract I-DMA-F28, on the Sunlight Basin property of the Continental Sulphur & Phosphate Corporation by F. L. Hideman of the Bureau of Mines.

We concur with the findings of the examining engineers that the deposits do not warrant a $2,000,000 development loan. We do believe, however, that the deposits might be mined for use by the fertilizer industry and the operator should be obligated to pay the Government a royalty on the net proceeds realized from the sale of this ore.

We recommend that the application for a $2,000,000 loan, DMA-103, and the request for a Certificate of Necessity, DMA-80 be denied.

W. H. King
W. H. King

HMC:oc

cc: DMA Subject
Chron.
Koschmann (2)

[illegible] New Customhouse
Denver 2, Colorado

April 24, 1952

Memorandum

To: Secretary to the Operating Committee, RFC, Washington, D. C.

From: Field Team, Region IV

Subject: Final Report, RFC Dockets 80 and 103, Contract [illegible], Continental Sulphur & Phosphate Corporation, Sunlight Basin, Park County, Wyoming

Enclosed are the original and three copies of the final report on Dockets 80 and 103, Contract [illegible], of the Continental Sulphur and Phosphate Corporation, 2010 Tower Petroleum Corporation, Dallas 1, Texas.

The original application was for a development loan of $2,000,000 to provide funds to purchase mining equipment and to construct a sulphur processing plant. The application was changed to exploration which was estimated to cost $79,410.

The RFC examining geologist estimated the deposit to contain 40,545 short tons of sulphur ore containing between 23 and 35 percent sulphur. It is estimated that approximately 11,[illegible] long tons of elemental sulphur can be recovered which at the present market price would have a value of about $350,000.

The company consulting engineer, H. F. C. Frommel, estimated 51,614 short tons of ore containing between 23 and 35 percent sulphur from which about 12,7[illegible]7 long tons of elemental sulphur can be recovered, having a value of about $411,000 at the present price of sulphur.

Neither the government estimate of tonnage nor the estimate of the consulting engineer warrant the granting of the $2,000,000 loan as requested. We recommend that the development loan and the Certificate of Necessity be denied.

The exploration project resulted in the discovery of 40,545 short tons of sulphur ore. The sulphur ore is low grade, but may be utilized in the fertilizer industry.

[illegible]

The Field Team of Region IV has forwarded the Administrator of the Defense Minerals Administration a Certificate of Discovery.

W. H. King for
J. H. East, Jr.

A. H. Koschmann

Enclosures

HMC:oc

cc: ~~WEStorme~~ G.A. WILSON w/copy of final report
CAAnderson w/copy of final report
AHKoschmann w/copy of final report
DMA Final Report

cc: DMA Subject, Chron.
Koschmann (2)

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

200 New Customhouse
Denver 2, Colorado

July 11, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 80, DMA Docket 103, and Undocketed exploration loan application of May 3, 1951--The Continental Sulphur and Phosphate Corporation, Sunlight Basin, Park County, Wyoming

On June 14 I submitted the geologic report by Ogden Tweto covering the undocketed exploration loan application of May 3, 1951, by The Continental Sulphur and Phosphate Corporation, Sunlight Basin, Wyoming. The report was sent to Washington without Tweto's map, which at that time was being prepared.

Attached are 6 copies of the map and it is suggested that 3 be sent to Washington to be filed with the report.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachments (6)

file w/ docket

224 New Customhouse
Denver, Colorado

June 15, 1951

Memorandum

To: G. W. Josephson

From: Field Team, DMA, Region IV

Subject: DMA Docket 80, DMA Docket 103, and Undocket exploration loan application of May 3, 1951 - The Continental Sulphur and Phosphate Corporation, Sunlight Basin, Park County, Wyoming

Referring to our telephone conversation of several days a go at which time we advised you that engineers and geologists who visited the Sunlight Basin property of the Continental Sulphur and Phosphate Corporation would recommend an exploration project, we are attaching the report of Ogden Tweto, geologist, U. S. Geological Survey, and W. E. Young, engineer, U. S. Bureau of Mines.

We concur with the recommendation that an exploration loan should be granted and that any further governmental assistance be held in abeyance until sufficient reserves are established.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Enclosures

Dm, x

Mining Division
Region IV

June 14, 1951

Memorandum

To: DMA Field Team, Region IV

From: Paul T. Allaman, Chief, Mining Division, Region IV

Subject: DMA-103 - Continental Sulphur and Phosphate Corporation, Sunlight Sulphur Deposits, Park County, Wyoming.

I have reviewed the preliminary report by McMillan of May 29, 1951, and the memorandum by W. F. Young of June 12, 1951. No analyses of samples taken have been made, however, it is indicated by the examiners that the first complete report will recommend approval of the exploration loan on a matching basis.

I concur in the recommendation, however, it is my opinion that any further loans for construction should be withheld pending at least partial completion of the exploration. Investigation of similar deposits of sulphur in Wyoming have proven very disappointing in quantity and grade.

Paul T. Allaman
Chief, Mining Division

PTA/ms

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

200 New Customhouse
Denver 2, Colorado

June 14, 1951

Memorandum

To: DMA Field Team, Region IV

From: Supervising Geologist, Colorado-Wyoming

Subject: DMA Docket 80, DMA Docket 103, and Undocketed exploration loan application of May 3, 1951--The Continental Sulphur and Phosphate Corporation, Sunlight Basin, Park County, Wyoming

Attached is the geologic report by Ogden Tweto covering DMA Docket 80, 103, and undocketed exploration loan application of May 3, 1951.

Mr. Tweto points out that the Company's estimated reserve of 2,000,000 long tons of recoverable sulfur, based on "assumed area of 125 acres, and assumed average thickness of 25 feet, and assumed average grade of 35% sulfur," are not substantiated at the present state of investigation. He recommends that the exploration loan for $78,800 be granted, and that the Certificate of Necessity, Docket 80, and Development loan, Docket 103, be held in abeyance until the reserves are established.

I concur in this recommendation.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachment

THE CONTINENTAL SULPHUR AND PHOSPHATE CORPORATION
SUNLIGHT BASIN
PARK COUNTY, WYOMING

DMA Docket 80

DMA Docket 108

Undocketed exploration
lease application
of May 3, 1961

Geology

By Ogden Tweto
U. S. Geological Survey

The sulphur properties of the Continental Sulphur and Phosphate Corporation are on the northwest and southeast sides of Sunlight Creek, in rough mountainous country 8 or 10 miles east of Yellowstone Park and 51 miles by road northwest of Cody, in Park County, Wyoming. The Continental Corporation has made applications for a Certificate of Necessity in the amount of $1,850,000 (DMA Docket 80), a Development Loan of $2,000,000 (DMA Docket 103), and an Exploration Loan, on a 50-50 basis, for a total of $78,800 (Undocketed application on Form MF-105, dated May 3, 1951).

The deposits were examined in connection with their applications on June 4-8, 1951, by William Young and John Hild of the U. S. Bureau of Mines, and Ogden Tweto and H. T. Schasszberger of the U. S. Geological Survey, who are unanimously and emphatically agreed that the property justifies an exploration loan, but that the other two applications should be held in abeyance until the reserves are established.

As shown on the maps accompanying the applications, the sulphur occurs in 8 or 9 distinct deposits strung out in a line about 3½ miles long trending NW-SE across Sunlight Valley. The country rock is andesitic breccia of the Yellowstone volcanic plateau, except for a small boss of Madison limestone that juts up into the volcanics in one deposit. The deposits are of fumarolic origin. Hydrogen sulfide gas is escaping from many small cavities, drill holes, and test pits. The sulphur has evidently formed by oxidation of the H_2S and is doubtless being deposited at the present time. The alignment of the deposits suggests that the gases are

rising from depth along a persistent fissure in the underlying rocks.

Much of the sulfur occurs in the "wash" of small fragments of andesite, although some is in shattered or intensely jointed bedrock. The wash contains bits of wood, logs, and stumps that are heavily impregnated, or even replaced, by sulfur. The gases and solutions that accompany the H_2S have altered the andesite intensely. It is bleached white in the vicinity of the sulfur deposits, and most of the rock constituents except the silica have been removed, leaving a white, brittle, porous rock that consists largely of opal. At places, particularly near the edges of the bleached areas, there is much bright green chlorite in the rock, and in others, the rock is buff in color and contains considerable clay. Some rock of the latter type is coated by yellow clay, iron sulfate, or a mixture of the two, on joint planes. This yellow coating has apparently been mistaken for sulfur. Locally, in a few of the deposits, finely granular gypsum is abundant.

As shown in the documents supporting the applications, the Company's estimate of the reserves is about 2,000,000 long tons of recoverable sulfur. This is based on an assumed area of 125 acres, an assumed average thickness of 25 feet, and an assumed average grade of 35% S. All three of their dimensions seem insufficiently substantiated at the present state of investigation. The area of the exposed deposits is much less than 125 acres. The largest deposit, known as "B" deposit, was mapped by plane table on a scale of 100 feet to the inch and was found to be a group of small deposits separated by rather extensive barren-looking areas, rather than a single large deposit 34 acres in extent as assumed heretofore. The other deposits all contain similar barren areas. The average thickness

will not be known until considerable drilling is done, but we doubt that it is as much as the 25 feet assumed in the Company's calculations. The thickest sulfur seen was about 10 feet, and although several drill holes have shown sulfur at depths up to 60 or even 100 feet, few of these have shown sulfur above the cut-off grade of 20% at depths of more than 10 feet. In two holes, sulfur of good grade was cut at depths of 50-60 and 90-105 feet, but there was much essentially barren rock above them, suggesting that the sulfur may be in fissures at these depths. The average grade of the sulfur in the present exposures is probably considerably less than 35%. The operators have concentrated their drilling, test-pitting, and bulldozing in the areas that are obviously highest in grade. These are small, however, and if a maximum area is to be classed as sulfur-bearing, then the average grade must be reduced.

Thus drilling, test-pitting, or trenching must be done to determine whether sulfur is present beneath some of the covered areas, to determine the thickness of the deposits, and to determine grade. As sulfur of good grade (25 to 50%) is visible at many places, there are grounds for going to the expense of such work, and it is accordingly recommended that the Exploration Loan for $78,800 (government participation 50%, or $39,400) be granted. The other two applications cannot be appraised until such an exploration program is completed.

If the Exploration Loan is granted, it should be made contingent upon Government supervision or upon assurance upon the Government's behalf that the Company has personnel capable of efficiently directing such work. The Company is doing exploration work at present with two diamond drills, but the work suffers badly for want of competent direction. The Company

has agreed and is now attempting to find and hire a capable man to direct the exploration work.

The map of "Deposit B" mentioned above is being drafted and will be forwarded as soon as completed.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

Mining Division
Region IV

May 14, 1951

AIR MAIL

Memorandum

To: J. H. East, Jr., Cleveland, Ohio

From: Chief, Mining Division, Region IV

Subject: DMA 80, Searchlight Basin, Sulfur, Wyoming

Attached is the copy of a memorandum I wrote you concerning this application. It is sent to refresh your memory.

I had already assigned McMillan to contact Jack Winfrey at Cody on May 21. In discussing the matter with Koschmann, it was decided that McMillan would only make a preliminary investigation and determine what was needed for a geologist and engineer when assigned to complete the investigation. This was agreed to by Mr. Winfrey.

Paul T. Allsman

Paul T. Allsman

Enclosure 1

Copy to: AH Koschmann
WD McMillan
PT Allsman
DMA File

JHE

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
DENVER, COLORADO

Region IV

Mining Division

May 10, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division

Subject: DMA 80, Searchlight Basin Sulfur, Wyoming

J. Barr, DMA, called from Washington today about the above investigation and pointed out the critical situation regarding sulphur. He also stated the Continental Company is making application for exploration. I told him we would make investigation as soon as the company notified us that the area was open for investigation.

A few minutes later, Jack Winford called from Dallas, Texas. He stated that they were opening the road and establishing the camp preparatory to drilling. He also requested that we have an engineer and geologist meet him at Cody Inn, Cody, Wyoming, May 20 or 21 and go into the deposit with him for at least a preliminary size up of the problem.

I promised we would have someone meet him May 21 at Cody Inn.

P. T. Allsman

Copy to Allsman
McMillan
Koschmann
DMA files

U. S. GEOLOGICAL SURVEY

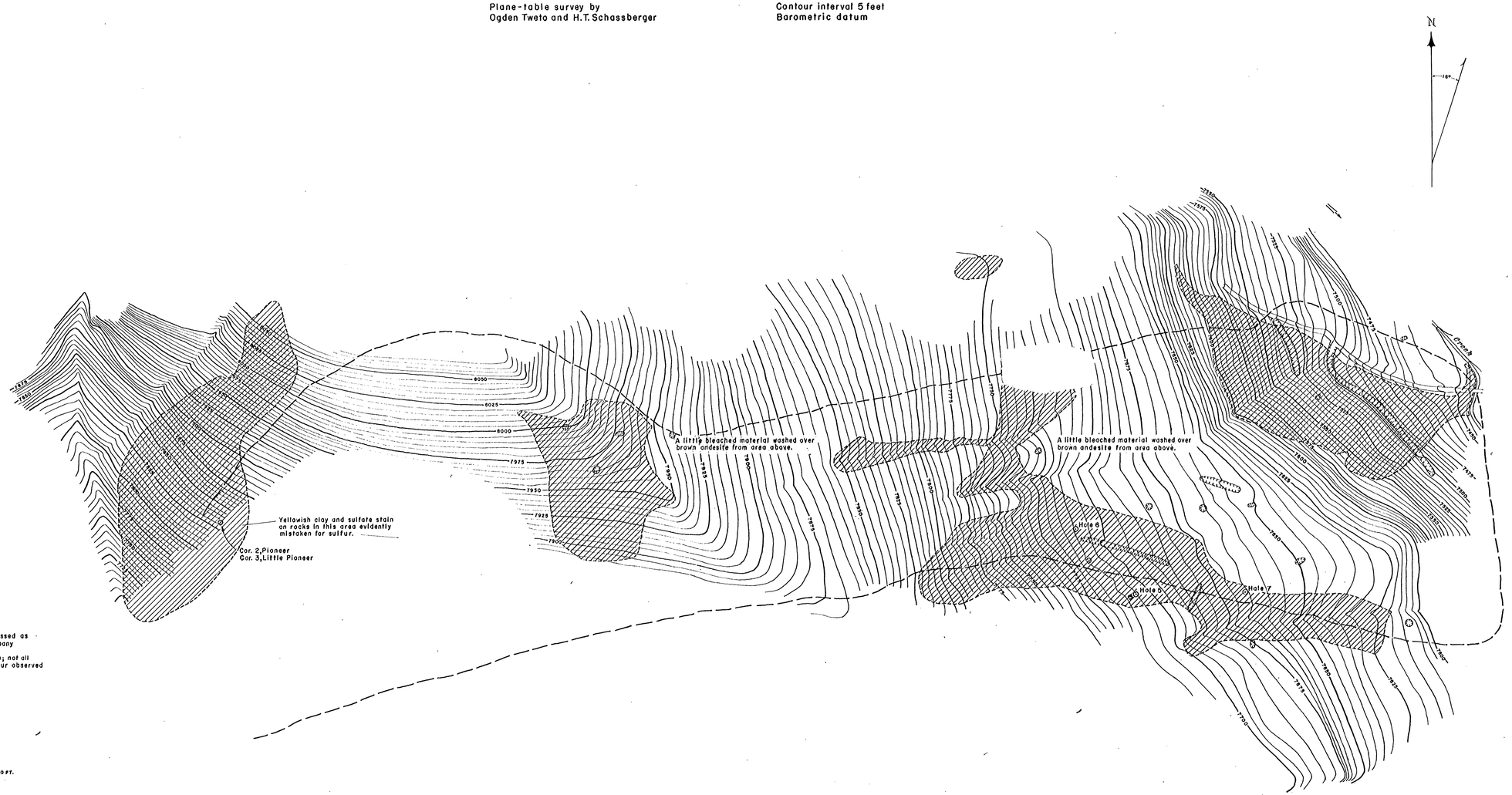
Map of Deposit "B"

Sunlight Basin Sulfur Deposits

Park County, Wyoming

Plane-table survey by
Ogden Tweto and H. T. Schassberger

Contour interval 5 feet
Barometric datum



DMA Dockets 80 and 103