DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE — Idm-E NO. 94 — DMEA NO. 1526

Application
- [ ] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

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

Right Side

- [x] Project summary (final)
- [x] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [ ] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

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

Right Side

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

Folders No. 3 : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

Docket copy

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

To: Vermont Copper Company, Inc.
South Strafford, Vermont

Pursuant to the provisions of Exploration Project Contract No. Idm-E9h, dated August 1, 1951, (Docket No. DMEA-1526), hereinafter called the "contract", between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the mineral deposit which is the subject of the exploration project, the Government considers and therefore certifies that a discovery or development has resulted from the work from which commercial production of ore may be made.

The Government's estimate of said discovery or development is particularly described and delimited as follows:

A copper-bearing ore body was found beginning at the southern limits of the property described in Article 2 of the contract which is an extension of the vein system now being mined. With minable widths ranging from 5 to 30 feet, this deposit strikes northerly along the east limb of a synclinal fold for a minimum distance of 800 feet. A further extension of the ore deposit to the north also is inferred from the exploration work done.

Dated: MAR 1 5 1954

THE UNITED STATES OF AMERICA

By [signature]
Administrator, Defense Minerals
Exploration Administration

cc to: Adm. Reading File
Operating Committee
Mr. Hedges, USBM
Mr. Thayer, USGS
Contract Adm. and Audit Div.
Field Team (2) Region VIII
Finance Office
Rare & Misc. Metals Division
Docket
Mr. Irving Gumbel, Acting Director, EPS
F. L. Johnson
Mr. Ching
Code 700

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

AUDIT CERTIFICATE

I have examined the records and transactions of:

Vermont Copper Company, Inc.
South Strafford, Vermont

pertaining to Exploration Project Contract No. Idm-194, Docket No. DMA-1526X (as amended by the DMEA Executive Officer of Region VIII by letter dated March 18, 1952, and Amendment No. 2), for the period of August 20, 1951 to December 31, 1952, covering a project of exploration for copper.

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

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

Total cost as billed by contractor	$34,832.51
Exceptions	-0-
Total Accepted Cost	$34,832.51

The contract provides for a 50 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Seventeen thousand four hundred sixteen and 28/100 Dollars,

$17,416.28

is valid and proper.

This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

W. J. BREKHUS
Auditor

December 14, 1953

AUDIT REPORT

I INTRODUCTION

On November 30, 1953 a final DMEA audit (covering the period of August 20, 1951 to December 31, 1952) was made of the records and accounts of operations pertaining to Contract No. Idm-E94, Docket No. DMA-1526X (as amended by the DMEA Executive Officer of Region VIII by letter dated March 18, 1952, and Amendment No. 2) with the:

Vermont Copper Company, Inc.
South Strafford, Vermont

covering a project of exploration for copper.

The accounting records under this contract are located in the Company's office at its mine and mill site which is reached by proceeding east from South Strafford on an unnumbered road for 1.9 miles.

During the course of the audit the following officers and employees were consulted as required:

Mr. John F. Cowley, President
Mr. C. B. Benson, Vice-President and Treasurer
Mr. Richard Dewelly, Geologist
Mr. A. H. Nelson, Office Manager
Mr. R. Bancroft, Assistant Storekeeper

Their cooperation and assistance greatly facilitated the audit.

II GENERAL INFORMATION ON RECORDS

The accounting records for the exploration project are completely integrated, through an apparently modern and comprehensive system, with the general accounts covering the Company's exploration, development, underground and open-cut mining, mill and other operations. A separate General Ledger expense account, identified as "No. 414, Diamond Drilling - DMA Contract 1526X", with related subsidiary cost accounts, is maintained to reflect all project costs. The balances of this account are in excess of the figure reflected on the MF-104, since the Company has absorbed all overtime labor costs since November 1951, equipment rental rates in excess of those allowable under Exhibit "A" of the contract and some other minor costs. Also, all engineering, geological and supervisory costs are not distributed to operational accounts but are recorded as a separate activity.

The source documents covering the costs of this project are recorded on monthly work sheets, which form the basis for preparation of

the monthly MF-104 reports. Therefore, this audit involved in general a check of source documents against the monthly work sheets, and reconciliation of the work sheets with the General Ledger accounts. All costs, except for some materials and rentals of operating equipment, were recorded on an accrual basis.

The Company's accounts are audited after the close of each fiscal year (March 31) by Archibold Peisch and Company, certified public accountants of Norwich, Vermont.

III SCOPE OF AUDIT AND FINDINGS

An interim audit was made and a report submitted, by Mr. K. D. Talbert, DMEA Auditor, on September 19, 1952, covering the period from August 20, 1951 to July 31, 1952. This audit covers the operations from August 1, 1952 to December 31, 1952, and the combined results of both audits are discussed in this report.

The audit was limited to ascertaining the accuracy, propriety and validity of the costs as shown in the "Totals to Date" column of Form MF-104, Operator's Monthly Report and Voucher, for the month of December 1952. The extent of the audit and the findings under each of the "Items of Cost" follow:

(1) Independent Contracts: $26,341.00

Since under the terms of the subcontract effective August 20, 1951 and approved by the Government on August 27, 1952, the Company carries the subcontractor's employees on the Company's payroll and furnishes certain materials and supplies, the Company prepares a monthly statement showing the total amount due the subcontractor from the Company for contract drilling (both DMEA and Company projects) and deductions from this total for Company payments on his behalf, and materials and supplies furnished by or through the Company. These monthly statements of charges and credits, insofar as they pertained to the DMEA project, were checked against drill logs as to footage, computations verified, and actual payments proved against the carbon copies of the check vouchers.

It was found that the total costs properly chargeable to, and allowable under, this item were:

9,070'	diamond drilling	@ $2.85	$25,849.50
641'	casing allowance	@ .50	320.50
124'	cementing allowance	@ .25	31.00
70	dip tests	@ 2.00	140.00
	Total		$26,341.00

(2) Labor and Supervision: $5,013.59

All charges under this item were checked against the recordings on the monthly work sheets. In order to verify the labor time, rates and charges on a sampling basis, the labor costs charged to the project for the months of December 1951, June 1952 and September to December 1952, were checked back from the work sheets, through weekly summaries and daily entries on a Daily Labor and Payroll Distribution Record, to the daily time reports approved by the foremen. Since the Company makes no accounting distribution of supervisory, engineering and geological salaries, charges to the project in this category were computed on the monthly work sheets by the Office Manager on the basis of informal estimates from the pertinent employees as to the time spent on the DMEA project. These estimates appeared to be very conservative.

The audit disclosed that the costs shown under this item on the December, 1952 MF-104, all, proper and allowable, are:

Labor	$3,528.14
Supervision	713.25
Technical Services (Geologists)	772.20
Total	$5,013.59

(3) Operating Materials and Supplies: $1,447.52

All charges against this category were checked against the monthly work sheets, and analysis made to determine propriety of the items charged. All purchases for October, 1951, May to December 1952 were verified against invoices. Vouchered invoices were spot checked for proof of payment against carbon copies of voucher checks. Issues from Company stores were spot checked against stock records and requisitions.

It was determined that Company stores are priced out at average unit purchase cost, including freight, without addition of mark-up. Lumber and timber is cut and milled on the Company's property, and is priced at cost, which is unusually low. All stores are charged to the project at the same unit prices charged Company operations.

The total costs properly chargeable and allowable under this item were found to consist of the following:

Lumber and Timber	$ 140.51
Casing and Pipe	841.08
Cement	317.27
Vials, etc., for Dip Tests	96.04
Other	52.62
Total	$1,447.52

(4) Operating Equipment: $1,159.05

All charges for operating equipment were checked against the monthly work sheets and the hourly rates specified in the contract. There were no daily time logs or other records covering the use on the project of Company equipment. The time charged was based on estimates, all of which, however, appeared to be most reasonable. Rental rates (depreciation) charged for the company-owned tractor and truck were $6.50 and $2.50 per hour, respectively, and are as authorized in the contract. A truck was rented at $3.25 per hour during a period when the Company's truck was not available; the project, however, was charged at the contract rate of $2.50 per hour. Also, a bulldozer, a portion of the time with Operator, was rented during a period when the Company's tractor was under repair; the rental rates were within the contract rates plus the Company's wage rates for an Operator. All charges for these rentals were verified against the invoices and copies of voucher checks.

The proper and allowable costs for Operating Equipment were found to be:

Rental:				
Tractor	6 hours	@ $5.00	$30.00	
Tractor and Operator	7 "	@ 7.26	50.82	
Tractor and Operator	3 "	@ 6.41	19.23	
Truck	7 "	@ 2.50	17.50	$ 117.55
Depreciation:				1,041.50
Total				$1,159.05

(5) Initial Rehabilitation and Repairs:

Not applicable to this contract.

(6) New Buildings, Improvements, etc.:

Not applicable to this contract.

(7) Miscellaneous: $871.35

Sampling and analysis charged under this contract were for 69 assays at $7.50 each. Charges were verified by checking the monthly work sheets and spot checking back to the invoices and copies of voucher checks.

Payroll Taxes and Liability Insurance were checked by computation at rates shown by the Company's files to be in effect. These rates were:

Social Security Tax	1.5%	
Unemployment: Federal	.3	
Vermont	1.0	2.8%

Workmen's Compensation Insurance 4.257%

The total of the items allowable and properly chargeable under "Miscellaneous" were found to be:

Sampling and Analysis	$517.50
Payroll Taxes	137.05
Liability Insurance	216.80
Total	$871.35

IV CONCLUSIONS AND RECOMMENDATIONS

The contract executed on August 1, 1951 called for completion within a period of two years. The final costs incurred were in December 1952, which is the final month covered by this audit. Amendment No. 3 dated February 5, 1953 recessed the work to April 30, 1953. Amendment No. 4, dated August 14, 1953, further recessed the work to October 1, 1953. In a letter dated October 10, 1953 from Mr. John F. Cowley, President of the Vermont Copper Company it was indicated that the Operator considered it to the best interests of the Government and Operator that the contract be terminated. In a reply dated November 20, 1953, from the Executive Officer of the DMEA Field Team the necessary steps for termination were outlined, with no objection to termination interposed by the Government. In view of the foregoing December 31, 1952 is the final date of this audit.

This audit has disclosed that all costs, as charged to this project, are reasonable and proper under the terms of the contract, including the Exhibit "A" as amended.

The total accepted costs as shown on the December 1952 MF-104, reclassified in accordance with this report are as follows:

	Total Accepted Cost	
	Per December 1952 MF-104	As Per Audit
(1) Independent Contracts:		
Drilling	$26,341.00	$26,341.00
(2) Labor and Supervision:		
Labor	3,528.14	3,528.14
Supervision	713.25	713.25
Technical Services	772.20	772.20

	Total Accepted Cost	
	Per December 1952 MF-104	As Per Audit
(3) Operating Materials and Supplies:		
Timber	132.89	140.51
Pipe and Casing	835.86	841.08
Cement	317.27	317.27
Vials, etc., for Dip Tests		96.04
Other	161.50	52.62
(4) Operating Equipment:		
Rental	117.55	117.55
Depreciation	1,041.50	1,041.50
(7) Miscellaneous:		
Sampling and Analysis	517.50	517.50
Payroll Taxes	137.05	137.05
Liability Insurance	216.80	216.80
Totals	$34,832.51	$34,832.51

At the conclusion of the audit, the findings were discussed with Mr. John F. Cowley, President, Mr. C. B. Benson, Vice President and Treasurer and Mr. A. H. Nelson, the Office Manager.

H. J. BREKHUS
Auditor

December 14, 1953

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

AUDIT CERTIFICATE

I have examined the records and transactions of:

Vermont Copper Company

South Strafford, Vermont

pertaining to Exploration Project Contract No. Idm-794, Docket No. DMA-1526X, for the period of August 20, 1951 to July 31, 1952.

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

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

Total Cost as billed by contractor	$26,186.76
Exceptions (per Audit Report)	681.00
Total Accepted Cost	$25,505.76

The contract calls for a 50 per cent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Twelve thousand seven hundred fifty-two and 88/100 Dollars,

— $12,752.88 —

is valid and proper.

This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

E. D. Talbert
E. D. TALBERT
Auditor

September 19, 1952

I INTRODUCTION

On September 15 and 16, 1952, an interim audit (covering the period of August 20, 1951 to July 31, 1952) was made of the records and accounts of operations pertaining to Contract No. Idm-E94, Docket No. DMA-1526X (as amended by the DMEA Executive Officer of Region VIII by letter dated March 18, 1952) with the:

Vermont Copper Company, Inc.
South Strafford, Vermont

covering a project of exploration for Copper.

The accounting records under this contract are located in the Company's office at its mine and mill site which is reached by proceeding east from South Strafford on an unnumbered road for 1.9 miles.

During the course of the audit the following officers and employees of the Company were consulted as required:

Mr. C. B. Benson, Treasurer and Vice-President
Mr. H. G. Brown III, Assistant Geologist
Mr. Clinton Miller, Mine Superintendent
Mr. A. H. Nelson, Office Manager
Mr. R. Bancroft, Assistant Storekeeper

Their co-operation and assistance greatly facilitated the audit.

II GENERAL INFORMATION ON RECORDS

The accounting records for the exploration project are completely integrated, through an apparently modern and comprehensive system, with the general accounts covering the Company's exploration, development, underground and open-cut mining, mill and other operations. A separate General Ledger expense account, identified for the current fiscal year as "No. 414, Diamond Drilling - DMA Contract 1526X", with related subsidiary cost accounts, is maintained to reflect all project costs. The balances of this account and the comparable prior year account are in excess of the figures reflected on the MF-104, since the Company has absorbed all overtime labor costs since November, 1951, equipment rental rates in excess of those allowable under Exhibit "A" of the contract and some other minor costs. Also, all engineering, geological and supervisory costs are not distributed to operational accounts but are recorded as a separate activity.

The source documents covering the costs of this project are recorded on monthly work sheets, which form the basis for preparation of the monthly MF-104 reports. Therefore, this audit involved in general a check of the source documents against the monthly work sheets, and reconciliation of the work sheets with the General Ledger accounts. The General Ledger, however, was two months delinquent; therefore, the July costs were reconciled with the General Ledger posting media. All costs, except for some materials and rentals of operating equipment, were recorded on an accrual basis.

The Company's accounts are audited after the close of each fiscal year (March 31) by a certified public accounting firm (Archibald Peisch & Co., Norwich, Vermont).

III SCOPE OF AUDIT AND FINDINGS

The audit was limited to ascertaining the accuracy, propriety and validity of the costs as shown in the "Totals to Date" column of Form MF-104, Operator's Monthly Report and Voucher, for the month of July, 1952. The extent of the audit and the findings under each of the "Items of Cost" follow.

(1) Independent Contracts:

Since under the terms of the sub-contract, effective August 20, 1951 and approved by the Government on August 27, 1952, the Company carries the sub-contractor's employees on the Company's payrolls and furnishes certain materials and supplies, the Company prepares a monthly statement showing the total amount due the sub-contractor from the Company for contract drilling (both DMA and Company projects) and deductions from this total for Company payments on his behalf and materials and supplies furnished by or through the Company. These monthly statements of charges and credits, insofar as they pertained to the DMA project, were checked against drill logs as to footage, computations verified, and actual payments proved against the carbon copies of the check vouchers.

It was found that the total costs properly chargeable to, and allowable under, this item were:

6,930'	diamond drilling @ $2.85	$ 19,750.50
281'	casing allowance @ $.50	140.50
124'	cementing allowance @ $.25	31.00
44	dip tests @ $2.00	88.00
	Total	$ 20,010.00

The casing allowances, cementing allowances and dip tests had been reported erroneously under (3) Operating Materials & Supplies on the MF-104.

(2) Labor and Supervision:

All charges under this item were checked against the recordings on the monthly work sheets. In order to verify the labor time, rates and charges on a sampling basis, the labor costs charged to the project for the months of December, 1951 and June 1952, were checked back from the work sheets, through the weekly summaries and daily entries on a Daily Labor and Payroll Distribution record, to the Daily Time Reports approved by the foremen. Since the Company makes no accounting distribution of supervisory, engineering and geological salaries, charges to the project in this category were computed on the monthly work sheets by the Office Manager

on the basis of informal estimates from the pertinent employees as to the time spent on the DMEA project. These estimates appeared to be very conservative.

The audit disclosed that the costs shown under this item on the July MF-104 as compared to the costs properly chargeable, and allowable, under the terms of the contract to be:

			Charged	Not Allowable	Allowable
Labor			$2,339.02	$ 32.05 (a)	$2,306.97
Supervision:					
G. Benker	21	days	403.20	403.20 (b)	-0-
F. Taft	7	"	154.70	154.70 (b)	-0-
Engineer	22	"	278.47	14.47 (c)	264.00
Engineer Helpers	12-3/4	"	149.26	9.01 (c)	140.25
Geologists:					
Mikkola	3	"	70.68	22.68 (d)	48.00
Other	27	"	432.00	-0-	432.00
Totals			$3,827.33	$636.11	$3,191.22

These totals are exclusive of $15.00 (2 assays @ $7.50) which was erroneously charged to Labor and Supervision but is properly chargeable and allowable under (7) Miscellaneous. An explanation of the disallowances follows:

(a) Wage rates in excess of those allowable under the terms of the contract:

Driller	Apr. & May	140 hrs.	@ 1½¢ excess	$ 2.10
Driller	June & July	325½ "	@ 4½¢ "	14.65
Laborer	Nov. - Mar.	38 "	@ 1¢ "	.38
Drill Helper	July	8 "	@ 5-3/4¢ "	.46

and wage classifications not authorized by the contract:

Timberman	July	3 hrs.	@ $1.49	$ 4.47
Mechanic	April	4 hrs.	@ 1.47	5.88
Mechanic	April	3 hrs.	@ 1.37	4.11

(b) General supervision not authorized by the contract. Mr. Barker was a former Mine Superintendent and Mr. Taft is the present Assistant Mine Superintendent.

(c) Salary rates in excess of those authorized by contract.

(d) Excess of fee plus expenses for a consulting geologist over the daily rates authorized by contract.

(3) Operating Materials and Supplies:

All charges against this category were checked against the monthly work sheets; an analysis was made to determine propriety of the items charged; all purchases for October, May, June and July were verified against invoices; vouchered invoices were spot-checked for proof of payment against carbon copies of the voucher checks; and issues from Company stores were spot-checked against stock records and requisitions.

It was determined that Company stores are priced out at average unit purchase costs, including freight, without the addition of any mark-up. Lumber and timber is cut and milled on the Company's property and is priced at cost, which is unusually low. All stores are charged to the project at the same unit prices charged Company operations.

The totals costs properly chargeable and allowable under this item were found to consist of the following:

Lumber & Timber	$ 132.89
Casing & Pipe	419.78
Cement	240.57
Vials, etc., for dip tests	96.04
Other	23.96
Total	$ 913.24

(4) Operating Equipment:

All charges for operating equipment were checked against the monthly work sheets and the hourly rates specified in the contract. There were no daily time logs or other records covering the use on the project of Company equipment. The time charged was based on estimates, all of which, however, appeared to be most reasonable. A truck was rented at $3.25 per hour during a period when the Company's truck was not available; the project, however, was charged at the contract rate of $2.50 per hour. Also, a bulldozer, a portion of the time with operator, was rented during a period when the Company's tractor was under repair; the rental rates were within the contract rates plus the Company's wage rates for an operator. All charges for these rentals were verified against the invoices and copies of voucher checks.

The proper and allowable costs for Operating Equipment were found to be:

Rental:				
Tractor	6 hrs.	@ $5.00	$ 30.00	
Tractor and Operator	7 "	@ 7.26	50.82	
Tractor and Operator	3 "	@ 6.41	19.23	
Truck	7 "	@ 2.50	17.50	$ 117.55

Depreciation:				
Tractor	44 hrs. @	$6.50	$ 286.00	
Truck	155 " @	2.50	387.50	673.50
Total				$ 791.05

(5) Initial Rehabilitation and Repairs:

Not applicable to this contract.

(6) New Buildings, Improvements, etc.:

Not applicable to this contract.

(7) Miscellaneous:

All charges for payroll taxes and insurance were checked by computation at the rates shown by the Company's files to be in effect. These rates were:

Social Security Tax		1.5%	
Unemployment:	Federal	.3	
	Vermont	1.0	2.8%
Workmen's Compensation Insurance			4.257%

Since disallowances have been made for salaries and wages under this project, the allowable costs for payroll taxes and insurance must be reduced accordingly, as follows:

	Charged	Disallowed	Allowable
Payroll Taxes	$ 103.83	$ 17.81	$ 86.02
Liability Insurance	166.31	27.08	139.23

Charges for assays (50 @ $7.50) were verified by checking the monthly work sheets and spot-checking back to the invoices and copies of voucher checks.

IV CONCLUSIONS AND RECOMMENDATIONS

This audit has disclosed that all costs, as charged to this project, with the exception of the disallowances itemized under items (2) Labor and Supervision and (7) Miscellaneous of the preceding section of this report, are reasonable and proper under the terms of the contract, including the Exhibit "A", as amended, except for the formality on the part of the Government of executing an amendment to the Contract to confirm the change in location of drill stations authorized by letter dated May 21, 1952, to the Company from the DMA Executive Officer, Region VIII.

The adjustments between Items of Costs, as shown on the July MF-104, the recommended disallowances, and approved amounts, are summarized as follows:

	Totals July MF-104	Distribution Corrected	Disalloved by Audit	Allowed by Audit
(1) Independent Contracts:				
Drilling	$19,750.50	$20,010.00	$	$20,010.00
(2) Labor & Supervision				
Labor	2,339.02	2,339.02	32.05	2,306.97
Supervision	720.66	985.63	581.38	404.25
Technical Services	782.65	502.68	22.68	480.00
(3) Operating Mat'ls & Supplies:				
Timber	132.89	132.89		132.89
Pipe & Casing	435.78	419.78		419.78
Granting	273.41			
Cement		240.57		240.57
Other	330.66	120.00		120.00
(4) Operating Equipment:				
Rental	117.55	117.55		117.55
Depreciation	673.50	673.50		673.50
(7) Miscellaneous:				
Sampling & Analysis		375.00		375.00
Payroll Taxes	103.83	103.83	17.81	86.02
Liability Insurance	166.31	166.31	27.08	139.23
(8) Contingencies:				
Assaying	360.00			
Totals	$26,186.76	$26,186.76	$681.00	$25,505.76

At the conclusion of the audit, the findings were discussed with the Treasurer and Vice-President (C. B. Benson) and the Office Manager (A. H. Nelson). The Company is preparing their next monthly MF-104 on the basis of the proper distribution of charged costs as shown in the second column of the above summary.

E. D. TALBERT
Auditor

September 19, 1952

Government's Copy

Defense Minerals Administration
RECEIVED
1 5 1954

EXPLORATION PROJECT CONTRACT
VERMONT COPPER COMPANY, INC.
DOCKET NO. DMEA-1526X

AGREEMENT FOR TERMINATION OF GOVERNMENT'S OBLIGATIONS
under
EXPLORATION PROJECT CONTRACT

It is agreed this 9th day of March, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Vermont Copper Company, Inc., hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-E94, Docket No. DMEA-1526X, dated August 1, 1951, that:

1. All work and operations provided for in said contract shall be terminated as of October 1, 1953.

2. Any work or operations prosecuted or costs incurred by the Operator after October 1, 1953, shall be for the sole account of the Operator without contribution by the Government.

3. The Operator hereby releases and agrees to save the Government harmless from all claims or demands arising out of said contract, except as herein otherwise provided.

4. All rights of the Government under the contract with respect to a percentage royalty and lien for its payment are preserved.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By O P Mittendorf
Administrator, Defense
Minerals Exploration
Administration

VERMONT COPPER COMPANY, INC.

By John F Cowley

Government's Copy

Department of the Interior
Defense Minerals Administration
RECEIVED
AUG 26 1953

EXPLORATION PROJECT CONTRACT
VERMONT COPPER CO., INC.
DOCKET NO. DMEA-1526

AMENDMENT NO. 4

It is agreed this 14th day of August, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Vermont Copper Company, Inc., that:

WHEREAS, underground exploration and development work being done for the company's own account, on both the 975-foot and 925-foot levels of the Elizabeth mine, is constantly adding to the data necessary to properly plan continuation of drilling under Contract No. Idm-E94 (Docket No. DMEA-1526), as amended; the work consists of advancing these levels as well as diamond drilling the footwall of these levels; five of the drill holes have intercepted what is believed to be the anomaly drilled under DMEA contract; and this vein is about 150 feet in the footwall of the Elizabeth vein;

WHEREAS, by October 1, 1953, both the 975-foot and 925-foot levels are expected to have advanced to within 125 feet of the ground covered by Contract No. Idm-E94, and it is considered that the data so obtained may aid the objective of this contract; and

WHEREAS, no equipment in which the Government has an equity is used on this project; and core recovered from drilling completed to date is suitably stored and will be preserved for examination until the project is completed and the final report prepared;

NOW, THEREFORE, work under Contract No. Idm-E94 is recessed from April 30, 1953, to not later than October 1, 1953. The time for completion of the work specified in Article 3 of the contract, as amended, is changed to two years and six months from the date of the contract.

This amendment shall not be construed to increase the estimated total cost of the project nor the aggregate total amount which the Government may be required to contribute.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O Mitchell Dorf
Administrator, Defense
Minerals Exploration
Administration

VERMONT COPPER CO., INC.

By John F Cowley
John F. Cowley, President

Amendment No. 3 to Contract Idm-E94
Docket No. DMA-1526X - ~~(Asbestos)~~ Copper
Vermont Copper Company, Inc.
South Strafford, Vermont

Due to the severe winter season in the area that the exploratory work specified under Contract Idm-E94 is to be conducted, the DMEA Field Team for Region VIII considers that it is advantageous for the Government to recess work under this contract during the winter months and take advantage of more moderate weather when the exploratory work can be conducted with greater efficiency and economy.

It is mutually agreed between the DMEA Field Team and the Operator that work specified under Contract Idm-E94 be recessed from January 1, 1953 to April 30, 1953, at which time work under this contract will be resumed, and that the time for completion of the work specified in this contract be correspondingly extended from 2 years from the date of this contract to 2 years and 4 months from the date of this contract.

No equipment in which the Government has equity is used on this project.

Core recovered from drilling completed to date is stored in a suitable building and will be preserved for examination until the project is completed and the final report is prepared.

This Amendment shall not be construed as authorizing any other change in allowable maximum costs other than those specified, nor shall this Amendment be construed as authorizing any increase in the total estimated allowable maximum cost of the project or the amount of the Government's participation.

VERMONT COPPER CO., INC.

By John F. Cowley
John F. Cowley, Pres.

UNITED STATES OF AMERICA

By W. T. Millar
W. T. Millar, Bureau of Mines
Acting Executive Officer
DMEA Field Team, Region VIII

John B. Hanley
John B. Hanley, Geological Survey
DMEA Field Team, Region VIII

Date February 5, 1953

VERNMENT copy

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~

College Park, Maryland

CONTRACT AMENDMENT
NO. 2

Docket No. DMEA-1526X, Contract No. Idm-E94
Vermont Copper Company, Inc., South Strafford, Vermont

(Copper)

The number and location of diamond drill holes designated in Exhibit "A", paragraph one of the subject contract, is hereby amended to conform to the following number of diamond drill holes and their locations. Coordinates are designated on map entitled, "Plan of Land, Located on Lot #84 in the Third Division of Strafford Township, Orange County, Vermont, owned by Vermont Copper Company, Inc. and dated May 29, 1951."

Maximum Allowable Number of Holes		Section (Coordinates)
3		16,450 N
3		16,700 N
10	including deepening hole 560 below a depth of 462 ft.	17,200 N
5		17,700 N
2		18,200 N
2		18,700 N

No holes shall be drilled other than those here designated.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum."

Dated: October 8, 1952

THE UNITED STATES OF AMERICA

By: McHenry Mosier
McHenry Mosier, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

Accepted:

VERMONT COPPER COMPANY, INC.

By: John F. Cowley
John F. Cowley, President

xxxxxxxxxxxx
College Park, Maryland

March 18, 1952

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket DMA-1526X

Dear Mr. Cowley:

In reference to your letter of March 14, 1952, requesting certain changes in Contract Idm-E94:

The changes that you have proposed seem to be logical in view of the results of the drilling to date, under Contract Idm-E94 and accordingly are approved.

Exhibit A of this contract is hereby amended to include the following addition to the first paragraph:

"In addition, from another diamond drill station at 16,450 N., three holes may be drilled. The first would be inclined to intersect the projected ore zone at an altitude of approximately 600 feet. If this should penetrate ore, a second hole would be inclined to intersect the projected ore zone at an altitude of approximately 520 feet. If this should penetrate ore, the third hole would be inclined to intersect the projected ore zone at a still lower altitude."

The original contract stands in effect in all other provisions.

This amendment does not in any way authorize an increase in any of the following items: (1) the total amount of drilling, (2) the total amount to be expended under the contract, nor (3) the portion of the cost to be paid by the Government.

Yours very truly,

McHenry Mosier

McHenry Mosier, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

copy for COMittendorf (2)
Tom Lyon
NENelson
DNAnderson
DMEA Files (2)

Amendment accepted, March 20, 1952

John F Cowley

John F. Cowley, President
Vermont Copper Company, Inc.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 21 1952

VERMONT COPPER COMPANY, INC.
South Strafford
Vermont

March 14, 1952

Mr. McHenry Mosier, Executive Officer
Bureau Survey Field Team
Defense Minerals Exploration Administration
Region VIII
College Park, Maryland

Dear Mr. Mosier:

Re: Vermont Copper Co., Inc.
DMA 1526-X

Attached hereto are cross section maps showing the progress of diamond drilling together with the regular cost statements covering the captioned project for the month of February 1952.

You will note that we obtained a total advance of 803 feet in two diamond drill holes. During the month we had two severe snow storms of several days each but they did not delay the operations appreciably.

From February 1st through February 4th, diamond drill hole #565 was advanced from 588 to 656 feet for a total contract advance of 68 feet. One dip test was taken at a depth of 646 feet from the collar. No assays were obtained. On February 5th and 6th blasting out for set-up and casing was done preparatory to drilling diamond drill hole #568. On February 7th 6 feet of overburden and the first 8 feet of bedrock was drilled, reamed, and cased for a total of 14 feet. Contract drilling was resumed until February 28th at which time diamond drill hole #568 was terminated at a depth of 769 feet from the collar for a total of 755 feet contract advance. Mineralization varying from weakly disseminated to a trace was found at depths from the collar of: 478 to 479 feet, 503 to 512 feet, 685 to 693 feet, and 704 to 735 feet. One sludge assay showing 0.21% Cu was taken at a depth of 507 to 513 feet. Dip tests were obtained at depths of 20 feet, 150 feet, 300 feet, 500 feet, 602 feet and 769 feet.

Very truly yours,

John F Cowley

John F. Cowley
President

JFC:mm

copy for COMittendorf (2)
DAnderson, Pbg.
DMEA CP
JFCowley (2)

DIAMOND DRILLING AGREEMENT

BETWEEN VERMONT COPPER COMPANY, INC., AND JOHN TWEIT

The agreement set forth below is to be retroactive to the start of drilling: --

River Hole # [illegible] (The first hole in the 17,200 section)

[illegible]

Open Cut [illegible] Hole # [illegible]

Underground Hole # [illegible]

SURFACE DRILLING AT RIVER

[illegible] PAID OR FURNISHED BY TWEIT:

1) Furnish all drilling equipment, materials, and supplies, including drills, rods, bits, power, gas, grease and oil, and miscellaneous tools. Except casings, lumber and other setting-up materials, cement and other materials for grouting, and certain other materials, as specified hereafter to be paid or furnished by the Company.

2) Pay all labor costs, including bonuses, overtime payments on bonuses, pro-rata share of vacations, payroll taxes, Compensation and Group Insurance, except those labor costs listed below as to be paid by the Company.

3) When casing of holes is required, the Company will pay Tweit [illegible]% per foot as allowance for bits and shells to cover drilling and reaming out for casings in rock, and will also pay the labor costs on a basis to be agreed upon between Tweit and the Company for each individual casing job, depending on existing conditions. (All casings and costs of casing in overburden to be paid by the Company, as specified below.)

4) Tweit will furnish all transportation for his work and materials, and the Company will furnish transportation required in connection with the work it agrees to perform.

5) Pay all costs of [illegible] to drill holes up to 1,[illegible] feet, the [illegible] of water supply, including labor costs and pipe.

6) Pay all [illegible] cells, [illegible], etc., made through the [illegible] to all part of the drill hole work.

[illegible]

[illegible]

2) Pay costs of moving and setting-up including labor and lumber and other materials necessary for drill set-ups, and such moving and setting-up is to be made whenever and in such manner as directed by the Company.

3) Pay labor costs and furnish materials, including casings, for casing in overburden; also, furnish casings for casing in rock, and the Company will determine and specify the casings to be left in holes or salvaged. Labor costs for casing in rock to be paid by the Company as specified in A(3) above.

4) Pay labor costs and furnish materials for cementing and cleaning holes when the Company agrees that this is necessary or advisable. The pump for cementing will be furnished by Tweit, and the Company will pay for pump repairs needed at the end of each cementing job as agreed to between Tweit and the Company, based on the Company's inspection of the pumping equipment at the start and finish of each job.

5) Pay the cost of materials and supplies necessary for heating water to prevent freezing, subject to arrangement by Tweit with the Company as to need, methods employed, and other details.

6) Pay labor costs and furnish pipe for supplying water ~~to drill sites over 1,000 feet~~ from ~~the source of water supply~~, the details regarding which are to be arranged with the Company.

7) The Company will furnish the transportation required in connection with the work which the Company agrees to perform.

8) The Company will carry the Public Liability and Property Damage Insurance required to cover its liability in connection with diamond drilling operations. It is suggested that Tweit should investigate to determine what Liability Insurance is necessary to protect his own interests, and to arrange for such Liability and Property Damage coverage.

C. <u>CONTRACT PRICE FOR SURFACE DRILLING AT RIVER</u>

Effective with River Hole # , started the Company will pay Tweit the Contract Price of $[illegible].35 per Foot for Surface Diamond Drilling at the River, which is to cover all of the costs to be paid or furnished by Tweit, as set forth above. And an additional 50¢ per foot allowance for bits and shells for drilling and reaming out for casings, as specified in A (3) above.

D. CONTRACT PRICE FOR SURFACE DRILLING AT OPEN CUT

Effective September 1, 1951, the Company will pay Tweit the Contract Price of [illegible].00 per foot for Surface Diamond Drilling at the Kirkler [illegible] Open Cut and the "Old South Pine."

E. CONTRACT PRICE FOR UNDERGROUND DRILLING

Effective September 1, 1951, the Company will pay Tweit the Contract Price of [illegible] per foot for Underground Diamond Drilling.

F. UNDERGROUND DRILLING

Tweit will furnish and/or pay for all drilling equipment, Materials and supplies, and will pay all costs of moving and setting up, except as specified below.

The costs of moving and setting up in stopes and raises are to be arranged between Tweit and the Company at the time of such moving and setting up, due to the fact that donditions in stopes and raises are too uncertain and varying to make advance contract agreement practicable.

Tweit will pay all labor costs for drilling, moving and setting up as specified under [illegible] of Surface Drilling agreement, except as specified in the paragraph next above.

The Company will supply air and water to within 50 feet of the drill set-up and will furnish air and water hoses for underground drilling, which hoses are not to be taken from underground.

The Company will pay the costs of timbering necessary for set-ups and safety, [illegible]

G. SURFACE DRILLING AT SOUTH MINE AND OPEN CUT #2

Tweit will furnish and/or pay for all drilling equipment, materials and supplies, and will pay all costs of moving and setting up.

Tweit will pay all labor costs for drilling, moving and setting up as specified under [illegible] of Surface Drilling Agreement.

The Company will supply air and water, including hoses, and will furnish timber for set-ups. When water must be hauled to the drill site ~~by truck~~, two hours labor for 2 men on each drill shift will be considered as "Company Time" for hauling water, and not charged as "Contract Time."

H. GENERAL AGREEMENT

1) Men working on Tweit's Diamond Drill projects will be carried on the Company payroll as employees, and will be paid wages at the scheduled hourly rates, the same as the Company's regular employees. Contract bonuses for Tweit's men will be calculated semi-monthly, the same as underground mine contracts. Tweit is to set the contract rate for his men as a basis for calculation and payment of such bonuses. All labor chargeable to Tweit on his drilling projects under this agreement is to be charged to the respective projects as "Contract Time," and all time worked by Tweit's men on the work which the Company agrees to perform is to be considered as "Company Time" and charged to Company costs.

H. 6) Any regular Company employee who has been transferred to Tweit's Diamond Drill Crew by mutual agreement between Tweit, the Company, and the employee, will be taken back as a Company employee without loss of his seniority standing with the Company. This agreement does not apply with regard to men whom Tweit has employed and who were not regular Company employees when employed by Tweit.

7) Working time lost by Tweit's men due to interruptions in drilling due to breakdowns of Tweit's equipment, running our of bits, etc., shall be charged as "Contract Time." When these or other interruptions extend for one full day or more the Company will cooperate with Tweit by employing "transferred employees" on other Company work, as far as possible, but does not guarantee to do so.

H. 2) "Contract Time" charged against Tweit's projects is to be charged at the average hourly rate for each pay week as heretofore. Overtime over 8 hours per day and/or 40 hours per week on contract work is to be at Tweit's discretion. No overtime over 8 and 40 hours respectively, is to be worked on "Company Work" unless authorized by the Company or in cases of emergency.

3) The Company will render Tweit a monthly statement before the fifteenth day of the following month showing the total amount due Tweit from the Company for contract drilling performed during the month and the deductions ~~to be~~ made from this total for Company payments on Tweit's behalf for the following:

a) Wages paid to Tweit's men chargeable to "Contract Work" in accordance with this agreement.

b) Contract Bonuses, including "overtime premium" on such bonuses, pay to Tweit's men.

(Wages paid plus Contract Bonuses before overtime premium will equal contract earnings at footage rates set by Tweit)

c) Amount due the Company for Payroll Taxes, Compensation and Group Insurance, Prorated vacations.

4) A ~~second~~ monthly statement will be rendered to Tweit showing all charges to his account for equipment, materials and supplies purchased by Tweit from or through the Company during the month, and charges for Company services, etc.

5) Payroll Taxes (Vermont Unemployment, Federal Employers' Excise, Federal Old Age Benefit), Compensation and Group Insurance will all be paid by the Company as heretofore, and the Company will withhold employees' income and Social Security taxes, the same as with its regular employees. The prorated portion of these items and vacations will be charged to Tweit on his contract labor on the following basis:

a)	Vermont Unemployment Tax	1.0%
b)	Federal Employer's Excise Tax	.3%
c)	Old Age Benefit Tax (Employer's Portion)	1.5%
	Total Payroll Taxes	2.8%
d)	Compensation Insurance	5.2%
	Total P/R Taxes & Compensation Ins.	8.0%

(This total is applicable on the total of Tweit's labor, including bonuses and overtime premium on bonuses.)

e) Prorated Vacation Payments - 35¢ per shift on men eligible for vacations.

f) Prorated Group Insurance - 30¢ per shift on men covered by Group Insurance.

All of the above rates are based on the rates now paid by the Company and are subject to adjustment whenever there are changes in the cost to the Company.

MF-200
(June 1951)

Indexed
3. Card
Card
Reviewed
AUG 17 1951
G.A.O.

Docket No. DMA 1526X
Commodity Copper
Idm-E94

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this 1st day of August, 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Vermont Copper Company, Inc.
South Strafford, Vermont
24 1951

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Vermont, County of Orange described as follows: [3] that area of land located on Lot #84 in the Third Division of Strafford Township consisting of Parcels numbered; 2E, 2C, 2B and that portion of 3A and 3B lying north of line A-A' as shown and further delineated on "Plan of Land" map attached hereto.

with respect to which the Operator represents and undertakes: [4]

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

(*b*) ~~That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached~~

3. *Exploration project.* The Operator, within Sixty (60) days from the date of this contract shall commence work on a project of exploration for [5] copper ore; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] Two (2) years from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 50 percent of the approved costs incurred; *Provided*, That the aggregate total of all sums paid by the Government under this agreement shall not exceed $ 25,691.00, which is 50 percent of the agreed estimated total cost of this project, $ 51,382.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Vermont Copper Company, Inc.
(Operator)

By C O Mittendorf

Director, Production Expansion Division
Defense Minerals Administration

By John T Cowley
President

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

EXHIBIT A - Exploration Project

The exploration program to consist of establishing six diamond drilling stations at regular intervals as shown on plan map attached and to drill from these stations a total of 24 diamond drill holes averaging 600 feet in length. The drill holes from each station to be drilled, as illustrated by cross-section map 16200 N attached, so as to adequately explore the northward extension of the copper bearing ore body presently being mined.

Work to be done and estimated costs of the project are as follows:

(1) Diamond drilling on contract under which contractor furnishes drilling and pumping equipment, fuel, lubricants and labor (drill operator and helper while on straight drilling)

14,400 feet @ $2.25 per foot	$32,400.00

(2) Drill labor on company time for moving drill, setting up drill and cementing holes

96 days, Drill operator @ $11.00 per day	$1056.00
96 days, Drill helper @ $10.50 per day	1008.00
96 days, Laborer @ $10.00 per day	960.00
Total	$3024.00

(3) Labor for cutting road and preparing drilling stations

22 days, Bulldozer operator @ $12.00 per day	$264.00
44 days, Laborer @ $10.00 per day	440.00
Total	$704.00

(4) Supervision, surveying, mapping, etc.

1 Geologist, 48 days @ $16.00	$768.00
1 Engineer, 48 days @ $12.00	576.00
1 Engineer helper, 48 days @ $11.00	528.00
Total	$1872.00

(5) Supplies, including drill bits, pipe, rods, cement, etc.

14,400 feet @ $0.77 per foot	$11,088.00

(6) Rental of equipment furnished by operator:

Bulldozer, including operating supplies and repairs
176 hours @ $6.50 per hour — $1,144

Truck, including operating supplies, repairs and driver wages
460 hours @ $2.50 per hour — $1,150

Summary of estimated costs:

(1)	$32,400.00
(2)	3,024.00
(3)	704.00
(4)	1,872.00
(5)	11,088.00
(6)	2,294.00
Total	$51,382.00

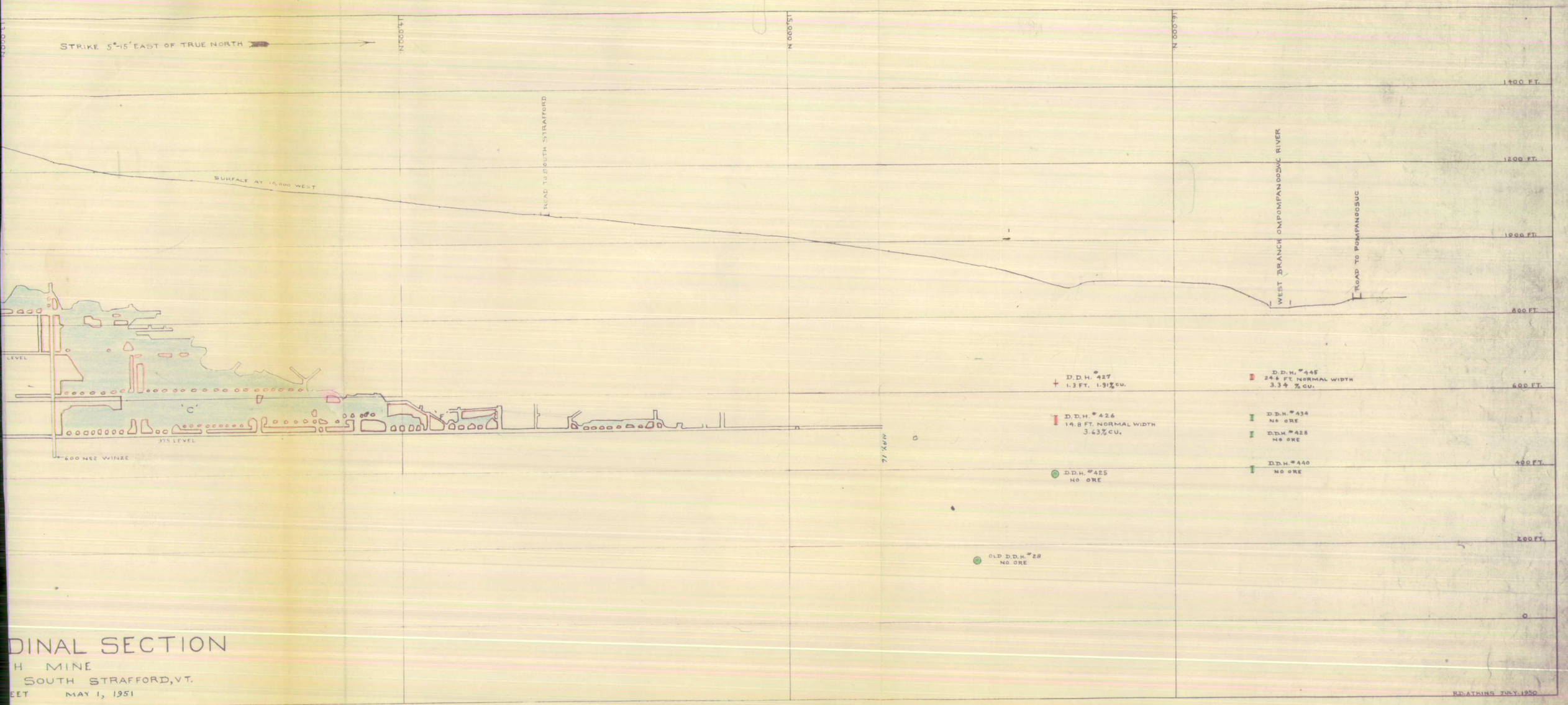
No construction or installation of or repairs to, facilities, structures or buildings is required for this project and costs of this nature are, therefore, not allowable.

VERTICAL LONGITU

ELIZABE

VERMONT COPPER CO, INC

SCALE: 1 INCH = 200



DINAL SECTION

H MINE

SOUTH STRAFFORD, VT.

EET MAY 1, 1951

Form MF-103*
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. dma 15226 X

Date received 6-4-51

Participation

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD, VERMONT

Name and address of applicant

Date May 29, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $51,382.00

Mineral or metal Copper Ore

Percentage of Government participation 50%

Location of mine South Strafford, Vermont

Date of filing MF-100 May 23, 1951

DMA Docket Number, if available

INSTRUCTIONS

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

THE APPLICANT

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

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

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

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

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

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

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

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

THE EXPLORATION

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

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

THE REQUIREMENTS AND COSTS

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

CERTIFICATION

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

VERMONT COPPER COMPANY, INC. — By John F. Crowley
(Name of company) — (Signature of authorized official)

May 29, 1951 — President
(Date) — (Title)

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

*Same as footnote on page 1.

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

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD, VERMONT

ATTACHMENT TO
U. S. DEPT. OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
FORM MF-103

1. Answered on MF 100

2. Answered on MF 100

3. Answered on MF 100

4. Answered on MF 100

5. Answered on MF 100

6. There are no claims, liens or encumbrances against the property.

7. Owner

8. Tentative balance sheet as of March 31, 1951 attached hereto.

9. Applicant is prepared to invest $25,691.00 representing its full share of cost of the project as detailed in question 23.

10. (a) The real property that will be involved in the exploration project is the same as shown below under 1 (b) and on attached sketch entitled "Plan of Land - Located on Lot #84 in the Third Division of Strafford Township, Orange County, Vermont, owned by Vermont Copper Company, Inc. South Strafford, Vermont."

(b) The legal description of the exact area upon which the exploration is to be conducted is as follows:

That area of land located on Lot #84 in the Third Division of Strafford Township, Orange County, Vermont, consisting of Parcel #2E, 19.8 acres, Parcel #2C, 60.1 acres, Parcel #2B, 88.2 acres, and that portion of Parcel #3A and Parcel #3B lying north of line A - A' through survey stations B and 38.

Survey commences 117 feet N-40° E of elm tree on South Strafford road (State Highway 132) at iron pipe driven in ground numbered Station 38, thence 2,222 feet N 40° E to iron pipe numbered Station 39, thence 1,082 feet N 1° 50' W to iron pipe numbered Station 40, thence 566 feet N 13° 40' E to iron pipe numbered Station 41, thence 314 feet N 31° 40' E to iron pipe numbered Station 42, thence 810 feet S 58° 20' to iron pipe numbered Station 43, thence 122 feet S 31° 50' E to iron pipe numbered Station 44, thence 165 feet S 0° 15' E to iron pipe numbered station 45, thence 1,681 feet S 52° 50' E to iron pipe numbered Station 46, thence 758 feet S 35° 40' W to iron pipe numbered Station 47, thence 744 feet S 3° - 40' W to iron pipe numbered Station 48, thence 317 feet S 61° - 50' E to iron pipe numbered Station 49, thence 1,366 feet S 35° - 18' W to iron pipe numbered Station A, thence 1,099 feet S 37° 03' W to iron pipe numbered Station B, thence approximately 2,430 feet due W to close with iron pipe numbered Station 38.

All bearings in relationship to magnetic north.

Property line survey by George H. Cook, licensed engineer, Montpelier, Vermont 1942.

11. Answered on MF 100

12. Answered on MF 100

13. Answered on MF 100

14. Diamond drill equipment owned by contractor will be used in exploration work.

15. Ore which may be mined as a result of this project will be extracted through a shaft to be sunk on the property described under 1 (b) above, trucked to the Vermont Copper Company Mill described in MF 100, shipped to the Phelps Dodge Smelter and refinery at Laurel Hill, Long Island, N.Y., from which electrolytic copper will be returned to Vermont Copper Company, for sale to consumers.

16. Answered on MF 100

17. Answered on MF 100

18. Answered on MF 100

19. None

THE EXPLORATION

20. The exploration will be conducted to locate the extension of the copper bearing vein now being mined south of the area included in this project.

21. The proposed work under this project consists of diamond drilling at regular intervals the area north of the known copper bearing vein now being mined by the Vermont Copper Company. It is proposed to establish diamond drill stations at 500 feet intervals as shown on plan map No. 1 and to drill at least four holes EX size as shown in our previous drilling on sections N-15700 and N-16,200 submitted with Form MF 100.

It is proposed under this project to establish six such diamond drill stations and to drill twenty four diamond drill holes averaging 500-700 feet in depth or a total of 14,400 feet of holes.

At an average advance of 30 feet per day or 750 feet of drill hole per month, the project should be completed in 19 months. In the event that ore is found at the first station, then shaft sinking for extraction would be commenced as soon as practical.

22. The geological basis of the project is the probability of the extension of the present orebody as shown by results of diamond drilling on sections N-15,700 and N-16,200 submitted with form MF 100. The areas covered by the project have not been considered as ore bearing in the past but all structural data available indicates that the extension of the ore deposit may be found by the drilling laid out. Surface geology is almost impossible to do because of the overburden and a heavy growth of brush and scrub timber.

23. Cost of diamond drilling from six diamond drill stations. 24 diamond drill holes @ 600 ft. each.

A. Drill labor on company time for moving drills, set up drills and cementing time.

96	Drill runner @ 11.00 per day		$1,056.00
96	Drill helper @ 10.50 per day		1,008.00
96	Laborers @ 10.00 per day		960.00

Labor for road - 3,000 feet

10	Bulldozer operator @ 12.00 per day		120.00
20	Laborers @ 10.00 per day		200.00

Labor for clearing 6 Diamond Drill Stations

12	Bulldozer operator @ 12.00 per day		144.00
24	Laborers @ 10.00 per day		240.00

B. Engineering - Surveys for diamond drill stations, diamond drill holes, making necessary maps, logs of holes, etc.

Chief Engineer - geologist -	48 days @ 16.00	768.00
Engineer	48 days @ 12.00	576.00
Engineer Helpers	48 days @ 11.00	528.00

C. None

D. None

E. Cost of water pipe, Cost of Drill rods, Cost of drill hole casing, Cost of cement — 14,400 feet @ 75¢ per foot of hole drilled — $10,800.00

F. Diamond drilling will be done by contract under which contractor furnishes diamond drill and water pump together with gas engines, all fuel and lubricants, and labor. (1 drill runner, 1 helper while on straight drilling) @ 2.25 per foot $32,400.00

G. Rental of Bulldozer - Company owned by Vermont Copper Co.
176 hours (22-8 hour shifts) @ $6.50 per hour $1,144.00

Rental of Trucks - Company owned by Vermont Copper Co. for transporting Equipment and Men
460 hours @ $2.50 per hour (including driver) $1,150.00

H. Nominal at 2¢ per foot drilled. $ 288.00

I. None

24.

Month	Station	Ft. Drilled	Cost at $3.60 Per Ft.
1st	#1	750	$2,700.00
2nd	#1	750	2,700.00
3rd	#1	750	2,700.00
(4th	#1	150	540.00
(4th	#2	600	2,160.00
5th	#2	750	2,700.00
6th	#2	750	2,700.00
(7th	#2	300	1,080.00
(7th	#3	450	1,620.00
8th	#3	750	2,700.00
9th	#3	750	2,700.00
(10th	#3	450	1,620.00
(10th	#4	300	1,080.00
11th	#4	750	2,700.00
12th	#4	750	2,700.00
(13th	#4	600	2,160.00
(13th	#5	150	540.00
14th	#5	750	2,700.00
15th	#5	750	2,700.00
16th	#5	750	2,700.00
17th	#6	750	2,700.00
18th	#6	750	2,700.00
19th	#6	750	2,700.00
20th	#6	150	540.00
Total		14,400	$51,840.00

It is recognized that the above schedule may vary to some extent due to favorable or unfavorable drilling conditions in each hole but the average as shown herein is a result of our experience. Actual schedules for preparing drill stations and necessary road work in advance of when required, will be done as weather and operating conditions permit.

VERMONT COPPER COMPANY, INC.
TENTATIVE STATEMENT OF OPERATIONS
FOR THE PERIOD APRIL 1, 1950 TO MARCH 31, 1951

SALES		
Copper (7,242,404 Pounds)	$1,739,436.69	
Copper Cathode Allowances Received	10,312.42	
Gold & Silver	25,837.69	
TOTAL SALES	1,775,586.80	
Deduct Charges Against Production	363,447.30	
NET MINE REVENUE		$1,412,139.50
OPERATING COSTS		
Mining	631,476.55	
Surface	140,032.92	
Milling	138,407.99	
General Overhead	182,522.23	
Total	1,092,439.29	
Less Income Credits to Operating Costs	15,069.45	
NET OPERATING COSTS	1,077,369.84	
Add Decrease in Inventory of Copper (Tentative)	81,283.30	1,158,653.14
OPERATING PROFIT BEFORE DEPRECIATION & COST DEPLETION		253,486.36
DEDUCT		
Depreciation (Tentative)	107,073.84	
Cost Depletion (Tentative)	30,150.00	137,223.84
PROFIT AFTER DEPRECIATION & COST DEPLETION		116,262.52
OTHER INCOME		16,628.09
		132,890.61
OTHER EXPENSES		9,031.63
NET PROFIT FOR THE PERIOD MARCH 31, 1950 TO MARCH 31, 1951		$123,858.98 *

* * * * * * * * * * * *

Gross Pounds Actually Produced for Year 4/1/50 - 3/31/51	6,897,180
Smelter Deduction	212,816
Net (Saleable) Pounds Produced	6,684,364

* * * * * * * * * * * *

* There will be no federal income tax payable on the profit for the fiscal year ended March 31, 1951, due to a loss carry-over of $284,000.00 from the fiscal year ended March 31, 1949.

VERMONT COPPER COMPANY, INC.
TENTATIVE BALANCE SHEET
MARCH 31, 1951

	Balance Sheet March 31, 1950			Tentative Balance Sheet March 31, 1951		
ASSETS						
CURRENT ASSETS						
CASH		43,662.27				56,768.75
RECEIVABLES						
Mine Office Miscellaneous	16,903.32			15,266.31		
Copper Billed to B. of F.S.	77,640.54			146,186.68		
Cathode Allowance				900.53		
Silver				7,794.96		
TOTAL		94,543.86				170,148.48
COPPER INVENTORY						
1,350,513 Pounds @ 17.32¢ (Cost)		233,908.85				
792,860 Pounds @ 19.25¢ (Estim. Cost)						152,625.55
OTHER INVENTORIES						
Broken Ore Reserves	75,957.93			16,784.58		
Warehouse Inventories	78,690.86			105,018.78		
TOTAL		154,648.79				121,803.36
PREPAID INSURANCE		355.85				591.94
PREPAID INTEREST						322.22
TOTAL CURRENT ASSETS		527,119.62				502,260.30
FIXED ASSETS						
Depreciable	1,663,490.09		1,699,444.51			
Depletable	246,806.40		246,806.40			
TOTAL		1,910,296.49			1,946,250.91	
Reserve for Depreciation	911,576.03		1,018,430.53			
Reserve for Depletion	124,658.74		154,808.74			
TOTAL		1,036,234.77			1,173,239.27	
NET FIXED ASSETS		874,061.72				773,011.64
INVESTMENTS IN AFFILIATED COMPANIES (Sharon Power Co.)		1,164.71				1,266.29
OTHER DEFERRED CHARGES & PREPAID EXP.		3,853.00				10,144.79
TOTAL ASSETS		$1,406,199.05				$1,286,683.02
LIABILITIES						
CURRENT LIABILITIES						
Accrued Wages & Salaries		3,106.82			7,955.41	
Accrued Comp. & Exp. due Officers					12,000.00	
Taxes Withheld from Wages & Sal.		1,790.55			7,713.50	
Accrued Payroll Taxes (Employer's)		1,646.74			3,049.27	
Accounts Payable		38,045.09			74,526.80	
Accrued Smelting & Refining Charges		68,711.32			62,685.34	
Phelps Dodge Advances		188,000.00			114,000.00	
Accrued Interest Payable		9,197.98			193.17	
TOTAL CURRENT LIABILITIES			310,498.50			282,123.49
NOTES PAYABLE			265,000.00			50,000.00
CAPITAL						
Common Stock (130,000 Shares)		130,000.00			130,000.00	
Paid-in Surplus		700,900.55			700,700.55	
Earned Surplus from April 1, 1950					123,858.98	
TOTAL			830,700.55			954,559.53
TOTAL LIABILITIES			$1,406,199.05			$1,286,683.02

Form MF-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

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

NOT TO BE FILLED IN BY APPLICANT

Docket No. dma-1526X

Date received MS-0403

926 CD

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD,
VERMONT

Name and address of applicant

Date May 18, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) Necessity Certificate pursuant to the provisions of Sec. 124-A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

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

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).
   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - [x] Owner.
   - [ ] Lessee.
   - [ ] Contractor.
5. Number of years in production Since 1943
   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

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

Name and Address	Official Title (If officer is also director indicate by "D")	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year	Estimated Net Worth Outside of Interest in Applicant	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common	Preferred	Amount	Net Cash Surrender Value After Loans
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
George Adams Ellis	Chairman Bd/Directors	1,666.67		7,950			
Frank Eichelberger - Pres. to 3/16/51	D.	13700.00		23,000			
Robert F. Patrick	D.	-0-		500			
J. Howard Moore	D.	-0-		900			
E. A. DeVillermont	Vice-Pres. D.	600.00		6,975			
Clarence B. Benson	Vice-Pres. D.	7150.00		1,000			
Vt. Development Trust		-0-		45,000			
Edward A. Ellis	D.	-0-		3,500			
Margaret R. Ellis	D.	-0-		1,150			
Stanley C. Wilson	VicePres.& Secretary D.	3500.00		6,300			
John F. Cowley	President since 3/16/51 D.	750.00		6,000			
	Total	37366.67	x x x x x	102,275		x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$ 1,000,000	$130,000	$ 1.00	130,000	None
Preferred stock	$ None	$ None	$ -	-	-

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	Copper Ore	144,914	222,636	245,451	16,000
2. Quantity of product processed (specify unit of measure and type of process) short tons	Copper Concentrate	96.77	12,013	14,215	1,111
3. Quantity and grade of product sold or shipped (specify units of measure) pounds	Electrolytic Copper	4,314,248	5,914,713	6,716,735	540,000

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

12. Ore or Mineral Reserves:

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

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

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

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

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)	221,000	2.38% Cu	$11.65	$10.18	$9.25
Indicated (probable)	300,000	2.5% Cu	$12.25	$10.70	$9.25

(*c*) If placer:

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

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

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

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

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

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

13. Access Roads: See attached sheet.

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

14. Water Supply: See attached sheet.

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

15. Power: See attached sheet.

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

16. Labor: See attached sheet.

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

17. Equipment and Facilities: See atttached sheet.

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

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

CERTIFICATION

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

Vermont Copper Company
(Name of company)

By John F Cowley
(Signature of authorized official)

May 22, 1951.
(Date)

President
(Title)

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

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

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD, VERMONT

ATTACHMENT TO
U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMIN.
FORM MF 100

GENERAL TECHNICAL DATA

1. Materials produced:
   a) Chief mine product; copper ore containing approximately 2% copper
      Chief mill product; copper concentrates containing approximately 25% copper. Shipped to Smelter for treatment to electrolytic copper.
   b) By products; a pyrrhotite concentrate containing approximately 36% S and 55% iron.

2. Name of Company: Vermont Copper Company, Inc.
   Name of Mine : Elizabeth Mine
   Mill: Copper Flotation mill
   Old Names of Operation:
   1929-1930 - National Copper Co.
   1926- - American Metal Co.
   1917-1919 - Vermont Copper Co.
   a) Linear feet of shafts; No. 3 Shaft - vertical, three compartments, each 5' x 5'; 825 feet from surface to 115 feet below 975 foot level.
      No. 2 Winze - Incline @ 70°, two compartments, 1 - 4' x 6', and 1 - 3' x 6'. Start at 600 level and extend 42' below 975 level. Slope distance 417 feet.
   b) Linear feet of drifts (accessible)

300 level	-	1,400
400 level	-	300
575 level	-	3,100
600 level	-	700
725 level	-	200
850 level	-	100
975 level	-	3,300
Total Drifts		9,100

Linear feet of crosscuts

575 level - #3 shaft crosscut -	890 feet
575 level - Diamond Drill Station Cross Cuts	100 feet
975 level - #3 Shaft Crosscuts	800 feet
975 level - Diamond Drill Station Cross Cuts	200 feet
Total Crosscuts	1,990 feet

   c) Linear feet of tunnels (adits)

300 level Adit #1	1,200 feet
300 level Adit #3	900 feet
Total	2,100 feet

   d) Linear feet other mine openings. - None
      Mine is not flooded.
      Pumping from 3 separate pump stations. Gross water pumped approximately 250 gallons per minute.
      Production capacity approximately 20,000 tons per month.

GENERAL TECHNICAL DATA

3. a) Elizabeth Mine is eleven miles south east from Kendall, a railroad station on the Boston and Maine Railroad.
   b) Orange County Copper District, Vermont.
   c) Strafford township. No section or Range.
   d) Orange County, Vermont

4. a) Mine is in operation now by Vermont Copper Company, South Strafford, Vermont.
   b) Mine is operated as owner.

5. Mine has been in uninterrupted production since 1943.

6. a) Vermont Copper Company has operated the Elizabeth Mine for a period of eight years producing up to January 1, 1951, 1,077,809 tons of ore with a copper content of 39,885,771 pounds and a recovery in concentrates of 36,192,646 pounds.

   b) The Chairman of the Board of Directors is Mr. George Adams Ellis, a lawyer of national repute and the senior partner of the law firm Clark, Carr & Ellis, 120 Broadway, New York. Mr. Ellis has been connected with large copper interests for more than thirty years.

   The President of the Company is Mr. John F. Cowley. He has been active in successful mining properties for 30 years, including 13 years with the United Verde Copper Company of Jerome, Arizona; 5 years as Mine Superintendent of the Idaho Maryland Mines Corporation, Grass Valley, California; 2 years as Manager, West Coast Mines, Winnennecca, Nevada; 5 years as Mining Engineer, Metals Reserve Company, Washington, D.C., and 4 years as Consulting Mining Engineer for the Turkish Government, Ankara, Turkey.

   The Vice-President and Manager of the Company, Mr. Clarence B. Benson, is a graduate of Dartmouth College and had a general business and accounting background before becoming associated with this Company in 1943. He was engaged in public accounting work with the firm Archibald M. Peisch & Co., Norwich, Vt., after leaving college; then served as sales and systems representative for the National Cash Register Company until he joined Vermont Copper Company, Inc., early in 1943 as Chief Accountant. Was elected Treasurer in 1945, Vice-President in 1950, and has acted as Manager since 1949.

   The Mine Superintendent is Mr. Frank Taft a graduate of the University of Idaho, School of Mines, in 1934, since which time he has had a wide and varied experience in large and small mines in Washington, Idaho, Montana and South America. He spent 8 years with the Howe Sound Mining Company as engineer; 4 years with Goldfield Consolidated Mining Company as Mine Superintendent; one year around Kellogg, Idaho, in charge of several small operations.

GENERAL TECHNICAL DATA

6. a) The Mill Superintendent is Mr. Helmer A. Johnson a graduate of Montana School of Mines in 1937. Two years as construction engineer and assayer. Four years ore testing engineer and metallurgical consultant with the Galligher Company, Salt Lake City, Utah. 1943 to date, Mill Superintendent, Vermont Copper Company.

7. a) Ore was discovered at the Elizabeth Mine in 1793. The deposit was worked first as a source of iron sulfate and later as a source of copper, which was mined during several periods up to 1937. The present operation was started in 1943 and has been continuous since that date. Production prior to the present regime is estimated by the U. S. Bureau of Mines as 250,000 tons of 2.2% copper ore, an aggregate content of 11,000,000 pounds of copper.

From 1943 to 1950 inclusive, 1,077,809 tons were mined averaging 1.86% copper from which 36,192,646 pounds of copper were recovered in a concentrate averaging 23.4% copper.

The several suspensions of operations of the previous operators were due presumably to the low price of copper.

b) Pike Hill Mine and Ely Mine and others in the vicinity have been operated in periods of high copper prices since the early part of the last century.

c) A report by Dr. H. E. McKinstry, "Ore Reserves of the Vermont Copper Company, South Strafford, Vermont", dated April 16, 1951, is attached hereto.

11. It is expected that monthly production will increase as stope development progresses. Maximum mill capacity is approximately 20,000 tons of ore per month.

12. a) See McKinstry report attached hereto.

b) 1. Vertical and longitudinal sections with assay plan map of 975 North Drift attached.

13. The Mine is eleven miles from Kendall a station on the Boston and Maine Railroad; two miles from South Strafford; and 20 miles north of White River Junction, Vt. It is connected to all three places by good "black top" roads.

14. The water supply is obtained from the Ompompanoosuc river and is adequate for all requirements at all seasons of the year.

15. Power is obtained from the Central Vermont Public Service Corp. Approximately 700,000 KWH per month are consumed at an average rate for that quantity of $.0083 per KWH.

16. In the mine a recent representative payroll included 22 miners, 34 muckers, 20 trammers, 10 timbermen, 3 hoistmen, 3 skiptenders, 10 maintenance men, 12 miscellaneous. In the mill there were 5 crushermen, 6 flotation men and 4 miscellaneous. On surface, 3 carpenters, 1 plumber, 6 machinists and welders, 3 electricians, 8 miscellaneous. In the office and warehouse, 7 men. Total including watchmen and foremen - 165.

17. The Mine is equipped with main hoisting facilities through a 3 compartment shaft from the surface to 975 level including a 500 H.P. two drum hoist. 10 ton Electric Trolley locomotive haulage from 300 level main shaft pocket thru the 300 adit to the mill and also from the upper level ore passes thru No. 1 adit on 300 level to the mill. 2 Mancha trammers, 1 - 3½ ton Mancha locomotive, and 1 - 7 ton trolley locomotive complete the underground haulage set up.

Drilling equipment consists of 20 - IR 48 Stopers, 10 IR DA30 Drifters, 12 - IR DA35 Drifters, 15 IR Jackhammers and 6 Atlas Diesel jackhammers.

Mucking equipment consists of 3 Eimco 21 B Shovel loaders, 1 - Sullivan shovel loader and 10 heavy scraper hoists.

Compressed air is furnished by 3 - 1000 cfpm electrically driven compressors housed in a well built compressor building.

Shop equipment includes necessary tools and equipment and is housed in a suitable building.

The office and warehouse occupy a separate building which is also well built and in good condition.

A change room of ample capacity with locker and shower bath facilities is well built and in good shape.

The mill buildings consist of a coarse ore bin and primary jaw crusher 28" x 40" building, a 1000 ton fine ore bin with secondary jaw crusher 26" x 38" and third stage Allis Chalmers cone crusher together with necessary conveyor belts, screens grizzlies and housing.

The Main Mill building houses a 9' x 6' Marcy Mill, 72" Akins type classifyer, 4 conditioners, 10 rougher flotation cells, 8 cleaner circuit flotation cells and 10 scavenger flotation cells together with the necessary pumps and compressors.

A thickener, a 2 disc filter and 4 final cleaner cells together with concentrate bin and truck scale are housed in an adjoining building.

All buildings and equipment are in good condition.

Additional equipment consists of 3 Mack trucks for hauling concentrates, 1 pick up truck, 1 station wagon and 2 touring cars.

An assay office together with complete facilities for making necessary analyses of products is located adjacent to the main mill building.

18. A small open pit operation at the location of the outcrop of the principal ore vein is operated intermittently. Breaking, mucking and hauling from the open pit operation are done under contract.

A substantial tonnage of low grade ore has been salvaged from the old dumps at the Ely and Pike hill mines which are also owned by the Vermont Copper Company.

The operations at these old dumps are restricted to the summer season when the roads are firm.

Ore Reserves of the
Vermont Copper Company
South Strafford, Vermont

April 16, 1951

H. E. McKinstry

Extract from covering letter signed by Professor McKinstry:

" A very important piece of additional information has reached me too late to incorporate in the body of the report. On page 5 it is stated, "Three holes drilled in this section have not found ore but a fourth had not yet, at the time of my visit, reached the projected position of the ore zone." This fourth hole has just cut a band of ore 24.6 feet wide and assaying 3.4% copper. This adds a probable extension of 500 feet beyond the ore in the previous group of drill holes. The tonnage represented by this ore is not yet known because we do not know its size in vertical dimension. If it has a vertical extent of 100 feet, it would add 100,000 tons or say 6 million pounds of copper to any figures mentioned in the report. A vertical extent of 100 feet is not improbable. On the other hand it may turn out to be not more than 50 feet. I doubt if it will be less and I have no doubt about its longitudinal continuity."

SUMMARY

Elizabeth Mine

Ore available for continuous mining is estimated at about 220,000 tons averaging 2.4% and containing approximately 10 million pounds of copper. This tonnage is recalculated from the most recent data, including that from raises and crosscuts. As I believe that the widths and heights assumed are conservative, it is not unlikely that a larger tonnage than this will ultimately be mined from the blocks on which this estimate is based. Therefore, the figure given should not be taken to mean that the 14,000,000 pounds mentioned in certain previous estimates is necessarily excessive.

It is not unreasonable to expect that additional ore will be developed in the north orebody below the 975 level. No basis exists for a definite estimate of such ore but I would not be surprised if it amounted to at least 100,000 tons of 2½% ore.

Beyond this there is room for another 200,000 tons of similar ore between the present face and the drill hole 700 feet to the north but the presence and continuity of such ore remains to be established by development work now in progress.

The iron and sulphur content of run-of-mine ore can safely be taken as 22% iron and 13% sulphur.

Apart from the copper ores mentioned so far, there is indicated by drilling a shoot of sulphide low in copper but containing substantial percentages of iron and sulphur. This material amounts to at least 1,000,000 tons containing a little over 1% copper and at least 21% iron and 12% sulphur.

These estimates are summarized in the following table:

Available Ore	Tons	Copper %	Tons Copper
North End of 975 level	106,000	3.4	3680
575-975 Level	45,000	1.5	675
Above 575 Level (400-151)	30,000	1.4	420
Above 575 Level (300-110)	40,000	1.3	520
	221,000	2.38	5295
Prospective Ore Inaccessible until a Deeper Level is Established			
Below 975 Level	100,00	2.5	2500
Prospective Ore North of Present Face			
Above and Below 975	200,000	2.5	5000
Low Grade Ore			
South of Present Workings	1,000,000	1.0	10,000

Properties other than Elizabeth

In view of the geological nature of the country and the fact that large areas are concealed by glacial cover, it is difficult to believe that the known copper occurrences are the only ones that exist. A survey of the twenty mile belt to the north of Elizabeth by methods employing geologic mapping, geophysical investigations and geochemical testing would have a reasonable chance of discovering new orebodies. This, however, would be a long-term project to be carried out either under government auspicies or by the Vermont Copper Company over a period of years.

However, the immediate neighborhood of the two former producers, namely the Ely and the Pike Hill mines deserve detailed prospecting. Like most prospecting, this entails a substantial element of risk but the reward in the event of success would be ample to make the risk attractive.

I would recommend:

Pike Hill. Expenditure of $10,000 on bulldozing and

diamond drilling to test known favorable structures.

Ely. Expenditure of $2000 in geologic mapping and bull-dozing to disclose structure. This would require one field season's work. Further expenditure on drilling would depend on the results of this investigation.

INTRODUCTION

Most of the known copper occurrences in Vermont lie in a belt measuring 20 miles from north to south and four miles wide. Within this belt the Vermont Copper Company owns the three principal properties that have produced copper in the past. Of these the Elizabeth mine is the only one now in operation and the only one which contains developed reserves. The two other properties, Ely, 8 miles north of Elizabeth and Pike Hill, 20 miles north of Elizabeth, have produced substantial tonnages in the past and offer interesting possibilities for finding new ore.

ELIZABETH MINE

Location

The Elizabeth Mine is 2 miles southeast of the village of South Strafford, 15 miles northwest of Hanover, New Hampshire, and 20 miles northwest of White River Junction, Vermont.

History and Production

Ore was discovered here in 1793. The deposit was worked first as a source of iron sulphate and later as a source of copper, which was mined during several periods up to 1937. The present operation was started in 1943 and has been continuous since that date. Production prior to the present regime is estimated by the U. S. Bureau of Mines as 250,000 tons of 2.2% copper ore, an aggregate content of 10,500,000 pounds of copper. From 1943 to 1949 inclusive, 832,358 tons were mined averaging 1.93% copper and containing 32,130,351 pounds. The highest average grade for any of these years was 2.56% in 1946.

Orebodies

The main ore shoot has the shape of a thick ribbon standing

on edge with its long dimension inclined downward to the north at an angle of 10 to 12 degrees with the horizontal. At its southern end the shoot comes to the surface and is being mined in an open cut. Underground, mining has followed the ribbon-like shoot downward to the north for a distance of 5000 feet. The deepest level, 975 feet lower than the outcrop, follows the ore northward. The face of this level, when I last saw it on April 5, 1951, was in high grade ore and the bottom of the drift was in ore which must extend below the level. The distance to which it extends has not yet been determined but will shortly be tested by diamond drilling. Also the distance to which ore extends to the north has not been determined. Seven hundred feet ahead of (north of) the present north face a drill hole put down from surface on the edge of the Pompaneosue River intersected a band of ore 15 feet thick and averaging 3.6% copper. Five-hundred feet still farther north drilling is in progress. Three holes drilled in this section have not found ore but a fourth had not yet, at the time of my visit, reached the projected position of the ore zone.

This description of the ore shoot as similar to a ribbon is, of course, an over-idealization. Actually the orebody is irregular in outline and is composed of higher and leaner bodies of sulphide material. Its irregularity, however, is less than that of most of the world's orebodies of similar type. Its strike for the length of a mile varies remarkably little from a due north bearing. Its dip ranges from 65 degrees at the upper, southern end, to about 80 degrees at depth to the north. Its plunge (i.e. the inclination of its long dimension), though varying locally does not depart from the average of 12 degrees through any great distance. This remarkable regularity and persistence, in spite of great complexity of detail, is

highly encouraging to the expectation that the orebody will continue still farther to the north.

975-Level Orebody

The most important body of available ore is that developed recently by the north drift on the bottom (975) level, where sulphides of excellent grade have been opened up for a length of 1000 feet.

Width of Ore

In most places the ore occupies the full width of the drift and in addition there are streaks of sulphide in the east and west walls. The distance to which ore exists in the west wall (foot-wall) has been tested by a series of crosscuts and boxhole raises put in in preparation for mining, though it is possible that in places streaks of ore still remain unexposed. In the east or hanging wall, there are no crosscuts (except two just started) and only a few drill holes. Thus there is still a possibility of additional ore in places in this wall. In one raise a width of over 40 feet is exposed by crosscuts from the raise but that the orebody in general is as wide as this now seems doubtful. In my opinion it is safe to assume the width as exposed by the drift and footwall crosscuts. This varies from 15 to 30 feet and averages about 20 feet.

Grade of Ore

The grade of this ore has been determined by grab samples which were taken at frequent intervals during the driving of the drift. While this method of sampling is less dependable than channel sampling, the experience in this mine is that it gives a reasonable indication of the average content of the ore if erratic high-grade samples are reduced or, alternatively, if allowance is made

for probable dilution. In computing the grade, the samples in the drift have been averaged in 100 foot intervals and this average has been combined with the average of samples taken in the footwall crosscuts within the same interval.

Height

The distance to which ore extends above and below the level has not been fully determined. In estimating the tonnage of ore above the level the height assumed has been based on five raises, all but one of which reached the top of the ore. The height indicated in this manner varies from zero to 60 feet. It is entirely possible that additional strands of ore may exist at elevations not reached by the raises but there is no basis for including such possibility in the estimate.

Tonnage

Based on these assumptions and after allowing for dilution in mining by 20% of waste carrying 0.5% copper, the ore above the level represents about 100,000 tons of 3.4% copper content.

Although mining of this ore is already in progress it will not be feasible to extract all of it immediately as it is necessary, at least with the present system of mining, to leave a pillar above the level. This might tie up something on the order of 20,000 tons which could not be mined until either the level was ready for abandonment or until stoping had progressed upward from a newly established deeper level, as discussed in the next paragraph. The basis of the estimate is given in the following table.

North End of 975 Level

Coordinates	Length x wd. x ht.	Tons	Av. assay	Tons cu.
13945-14000	55x15x25	2,000	2.07	43
14000-14100	100x20x25	5,000	1.94	97
14100-14200	100x20x60	12,000	1.37	165
14200-14330	130x30x50	19,500	4.6	897
14330-14400	70x30x50	10,500	3.76	395
14400-14500	100x20x50	10,000	3.97	397
14500-14600	100x20x50	10,000	5.69	569
14600-14700	100x25x30	7,500	6.59	494
14700-14800	100x20x(?)	small?		
14800-14900	100x15x30	4,500	2.82	127
14900-15800	100x15x50	7,500	5.40	405
13945-15800 (1055 feet)		88,500	4.01	3589
Allowing for 20% dilution by .05% waste		17,700	.05	88
		106,200	3.46	3677

Ore below Level

The distance to which this same ore extends below the level has not been determined. To answer this question, the present program calls for three crosscuts into the hanging (west) wall of the drift from which inclined diamond drill holes will be bored to test the ore zone below the level. If ore extends for an average distance of 50 feet below the level, which I consider a reasonable expectation, the tonnage would be about 100,000. The grade may well be less than that indicated by the level, since it commonly happens that the tops of shoots in this mine are richer in copper than their lower portions. But it would not be unreasonable to expect a grade of 2%. Before any ore can be mined below the level it will be necessary to (1) establish presence of the ore by diamond drilling and (2) drive a new deeper level to get under it. All this may take nearly a year.

Other Orebodies

Toward the south end of the mine, ore of lower grade is amply

indicated by drill holes, though the exact tonnage is not yet accurately determined. The shoot extends from just above the 975 level upward to the 575 level and is now being opened by an incline. An estimate of 45,000 tons grading 1.50% is conservative.

This same shoot extends above the 575 level where it was apparently missed by former workings which failed to expose the full width on the level. Existence of this ore is indicated by new workings out of the north end of an old stope above the 575 level. This block is estimated at 30,000 tons of 1.4%. The upward extension of this ore above the old stope is estimated at 40,000 tons at 1.3% copper.

There is still a little ore in the open cut and between the open cut and the 200 level but as it is nearly exhausted no attempt is made to estimate the remaining tonnage.

Broken Ore

Broken ore in stopes as of March 1, 1951, is estimated by Mr. Richard Atkins, Chief Engineer, as 13,000 tons. This is not included in the present estimate as I am assuming that it will compensate for the small tonnages already mined from blocks included in the estimate.

High-iron Low-copper Ore

South of and below the present workings there is a large tonnage of sulphide matter indicated by drilling. Because of its low grade in copper it could be mined only with substantial contribution from its contained iron and sulphur. Drill holes indicated something in the neighborhood of a million tons with copper content a little over 1% and iron at least 21% and sulphur at least 12%.

Iron and Sulphur Content

The ore consists in large part of the mineral pyrrhotite, a

composed of iron and sulphur. This mineral does not of itself contain copper; the copper is carried by chalcopyrite, which makes up roughly 6% of the ore as mined, varying, of course with the copper content of the ore. In addition to pyrrhotite and chalcopyrite there are varying amounts (roughly 40%) of other material, chiefly quartz, rock matter (schist) and a little pyrite.

Pyrrhotite is a mineral whose composition is not strictly constant. Specimens of pure pyrrhotite from different localities range from 57 to 63% iron, the balance of the 100% being sulphur. The Elizabeth mine pyrrhotite is close to the composition FeS, that is, it approaches the higher limit in iron.

Samples are not analyzed for iron and sulphur as a matter of routine but there is considerable information from old drill hole assays and from mill tailings to give an indication of the content in the two elements. The evidence for presence of substantial percentages of iron and sulphur does not rest entirely on these scattered analytical data, since it is obvious to the eye that the ore carries a high, though somewhat variable proportion of pyrrhotite.

The following data are averages of a large number of analyses:

	Iron	Sulphur	Copper
8000 tons mined in 1930[1]	36.4	23.0	2.29
1,565,000 tons estimated in 1940 on the basis of drill hole assays[2]	26.2	15.1	1.76
Average of mill tailings for 13 separate months, 1944-1950	21.8	12.03	
Calculated content of mill heads for these 13 months[3]	22.8	13.6	

1/ U. S. Bureau of Mines, War Minerals Report No. 2, 1942, p. 7.
2/ Report of Lehman Corporation, 1940, H. E. McKinstry.
3/ Calculation based on concentration ratio 14:1, concentrate assaying 36% iron and 34% sulphur.

In short, I would say that a safe average for run-of-mine copper ore would be 22% iron and 13% sulphur. If ore low in copper

were mixed with the object of getting a high-iron product, it might be possible to get millheads averaging 24% iron and 14% sulphur, or with careful selective mining, perhaps somewhat higher.

ELY MINE

The Ely property is 8 miles north of the Elizabeth mine. It was discovered in 1821 and worked intermittently for a century. It is estimated (U.S. Bureau of Mines) that the mine produced 400,000 tons of 3.3% ore, practically all of it from a single ore shoot. This would be equivalent to over 26 million pounds of copper.

All, or practically all, of this ore came from a single shoot which followed downward on an incline for a distance of 3400 feet. It was a ribbon-like body of ore about 100 feet broad and ten feet thick. At the bottom it was cut off by a fault or dike at a depth of 1800 feet (measured vertically) below the outcrop.

Although this shoot could very possibly be found again beyond the fault, I do not believe that the chance of finding it and the amount of ore that might be found would be sufficient to warrant pumping out and rehabilitating this deep incline. Instead, the interesting feature at Ely is the possibility of discovering one or more additional shoots.

In 1943-5 the U.S. Bureau of Mines conducted a geophysical investigation using the self potential method. Several anomalies were outlined. To test them the Bureau put down eight diamond drill holes but found no new ores. Subsequently a U.S. Geological Survey party under the direction of Walter White mapped the area geologically. Unfortunately, their work was done after completion of the Bureau's drilling which was, therefore, not based on the geological findings. White has told me that he was favorably impressed with the possibility of finding new ore.

White's map was carefully made and showed dip and strike of the rocks in admirable detail but included no mapping or correlation of rock types. In the summer of 1950, Arthur Still and I spent a day on the property and later Still spent two days more in mapping the accessible workings as well as parts of the surface. While this time was all too brief to result in a complete map, it did suggest that detailed mapping with attention to rock types would give a much clearer picture of the structure. The shoot is localized by a tight fold which is part of the overturned (almost recumbent) west limb of a major anticline. There is a suggestion that other tight folds exist.

I would recommend a program of detailed mapping which would require 4 to 6 man-weeks. The results might indicate favorable localities which could then be tested first by bulldozing (topography permitting) and then by diamond drilling.

PIKE HILL MINES

The Pike Hill group of mines is 20 miles north of the Elizabeth. Ore was discovered at Pike Hill at least as early as 1846. Records, probably incomplete, indicate a past production of at least 7 million pounds of copper. The average grade of the ore is not known, but records of sampling indicate that at least parts of the orebodies averaged from 2 1/3 to 3 3/4% copper. No doubt there were some shoots that were richer. During one period (1866-1881) 31,500 tons were produced having a grade of 8.5 to 10% copper but this was undoubtedly hand-sorted material.

Within a north-south distance of 3000 feet, three ore-shoots were mined. They were known as the Smith, Eureka and Union. Each of them is a lens or assemblage of lenses having a northeasterly

plunge and each was localized by a roll in the cleavage of the enclosing rock. That is, the cleavage swings from its normal course (namely a little west of north, with an easterly dip of 30 to 40 degrees) to a strike which is more nearly east-west and a dip which is more northerly.

In the summer of 1950, A. R. Still mapped the ground north of the northernmost (Union) mine for a distance of 5000 feet. Within this interval three additional rolls in the cleavage were located. I regard these as structures favorable to the occurrence of ore. Any or all of them may contain orebodies similar to the Union or Eureka shoots.

By way of testing these indications, I recommend:

1. Where topography permits, exposing the bedrock by bulldozing.
2. Diamond drilling. Prior to drilling, however, I believe that some geophysical work, preferably by the induction method, would be advisable.

VERMONT COPPER COMPANY, INC.
South Strafford, Vermont

RECORD AND FORECAST OF PRODUCTION,
COST, AND INCOME

	RESULTS OF OPERATIONS							Totals	Forecast of Operations
	July 1946	August 1946	September 1946	October 1946	November 1946	December 1946	January 1947	July 1946 - January 1947 Inclusive	February 1947-June 1947 INCLUSIVE (Note 8)
DRY TONS OF ORE MINED AND MILLED	9,595.08	8,817.55	11,654.40	11,201.54	10,566.05	11,105.66	11,990.19	74,930.47	58,000
COPPER CONTENT OF ORE	2.98%	2.75%	2.10%	1.93%	2.05%	2.07%	2.02%	2.239%	2.165%
SILVER CONTENT OF ORE - OZ. PER TON(Note 1)	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
POUNDS OF RULE 13 COPPER IN CONCENTRATES (Per our calculated production)(Note 2)	526,170	443,974	439,303	382,015	385,672	411,841	433,972	3,022,947	2,262,150
NET SMELTER RETURNS (Note 3)	$51,867.22	$43,557.74	$44,017.29	$35,363.87	$49,310.80	$61,527.56	$59,375.20-Note 4)	$345,019.68	$334,929.35
PREMIUMS EARNED ON CALCULATED PRODUCTION	$66,428.96	$56,051.72	$55,462.00	$48,229.39	$37,560.60	$30,888.08	$32,547.90	$327,168.65	
TOTAL OPERATING COST (Note 5)	$54,066.55	$49,921.52	$54,150.55	$72,946.32	$58,855.39	$67,710.00	$65,000.00-Estimated)	$422,650.33	$322,500.00
OPERATING MARGIN (Note 6)	$64,229.63	$49,687.94	$45,328.74	$10,646.94	$28,016.01	$24,705.64	$26,923.10-Estimated)	$249,538.00	
NET SMELTER RETURNS FOR SILVER (Note 7)	$ 1,512.47	$ 1,434.39	$ 2,024.68	$1,950.15	$ 1,819.85	$ 1,889.82	$ 2,062.90	$ 12,694.26	$ 7,523.55

Note 1 - Estimated, as no fire assaying is done.
Note 2 - Our calculated production since February 1, 1946, appears to be approximately 120,000 pounds of copper in excess of smelter settlement returns received to January 31, 1947. This may be due to the fact that we were unable to check our production calculations during the months February through June, when we were forced to stock-pile concentrates because of smelter strike.
Note 3 - After Smelter Deductions, Trucking, Freight, Smelting, Refining, Assaying, Sampling and Weighing.
Note 4 - Net Smelter Return calculation for January includes smelter charge of $5,300.39, adjusting treatment charges to October 31, 1945, due to retroactive pay increases.
Note 5 - Out-of-pocket only. Before Depreciation and Depletion.
Note 6 - Net Smelter Returns plus Premiums Earned, Less Operating Cost
Note 7 - Net realized Returns with no allocation of Charges under (3) above. Net smelter returns for silver are also included in "Net Smelter Returns" listed above.
Note 8 - On basis of open market copper price of 19½¢ a pound.

CONTRACT NO. DMP-94
between
UNITED STATES OF AMERICA
and
VERMONT COPPER COMPANY, INC.

THIS CONTRACT, entered into between the UNITED STATES OF AMERICA, hereinafter called the "Government", acting by and through the Administrator of General Services, his successors, assigns and duly authorized representatives (pursuant to the authority contained in the Defense Production Act of 1950, as amended, and Executive Order 10480, as amended), and VERMONT COPPER COMPANY, INC., a corporation, organized and existing under the laws of the State of Vermont , hereinafter referred to as the "Contractor";

WITNESSETH:

WHEREAS, the Government, acting by and through the Emergency Procurement Service of the General Services Administration, on April 20, 1953 entered into Contract No. GS-OOP-7328(SCM) with the Contractor providing, among other things, for the sale and delivery to the Government of approximately Eight Million (8,000,000) pounds of electrolytic copper cathodes during the period from June 1, 1953, through June 30, 1954, produced from ores mined from the Elizabeth Mine, located in Orange County, Vermont, hereinafter referred to as the "Mine"; and

WHEREAS, the Contractor represents that the nature of the ore deposit and other factors do not permit the economic recovery of copper at the present market level; and

WHEREAS, the Contractor has now applied for a new contract from the Government for the purchase by the Government of refined copper derived from copper ore produced from the Mine; and

WHEREAS, the Government considers that production of copper ore from the Mine is in the interest of national defense, and desires the maintenance of mining operations for the production of copper ore from the Mine; and

WHEREAS, the Government has determined that the terms and conditions of this Contract are necessary to insure that the supply of copper ore from such high cost source will be continued after June 30, 1954;

NOW, THEREFORE, in consideration of the premises and of the mutual promises herein contained, the parties hereto agree as follows:

ARTICLE I. PRODUCTION

A. Effective as of July 1, 1954, the Contractor shall mine and mill ore from the Mine and shall carry on operations so as to produce copper concentrates, at a rate which will enable it to deliver and it shall deliver

to the Government refined copper cathodes meeting the specifications set forth in Article III hereof, in the quantities and during the times indicated in the following schedule:

	Pounds of Refined Copper Cathodes
During Calendar Year 1954	4,000,000
During Calendar Year 1955	8,000,000
Total	12,000,000

B. The Contractor shall make satisfactory arrangements for smelting and refining facilities with a refiner or refiners of established experience and responsibility sufficient to enable it to meet the delivery obligations hereunder, and shall submit to the Government within thirty (30) days from the date of this Contract, in writing, evidence satisfactory to the Government that such facilities are available to the Contractor.

C. The Government agrees to accept refined copper cathodes delivered under Article II-A hereof from the refiner or refiners at the time of delivery by the Contractor to the refiner or refiners of copper concentrates produced hereunder, and in an amount equal to the amount of net recoverable refined copper contained in said copper concentrates so delivered to the refiner or refiners.

ARTICLE II. DISPOSITION OF PRODUCTION

A. The Contractor shall sell and the Government shall buy, at the price set forth in Article IV hereof, all refined copper cathodes produced and delivered hereunder in accordance with the terms hereof.

B. Any quantity of copper concentrates produced by the Contractor in excess of the amount which will enable it to deliver to the Government refined copper cathodes in accordance with the schedule set forth in Article I hereof, or the refined copper derived from such excess production, may be sold by the Contractor to industry in accordance with its usual methods of sale and at its current selling price; provided, however, that any such sale shall not be for utilization outside the United States, its territories and possessions, in the absence of written approval to the contrary by the Government.

ARTICLE III. SPECIFICATIONS

All refined copper delivered hereunder shall be electrolytic cathode copper meeting the requirements and conditions of National Stockpile Specification P-16-R1, dated April 9, 1953, in standard non-premium shapes and sizes, analyzing a minimum purity of 99.9%, and otherwise conforming to the requirements of the American Society for Testing Materials Specification No. B-115, latest revision as of the date of this Contract; provided, however, that all cathodes delivered hereunder shall be not less than twelve (12) inches by twenty-seven (27) inches in size and each lot shall be of the same nominal size.

ARTICLE IV. PRICE

The price for refined copper sold to the Government hereunder shall be thirty-one and six-hundredths cents ($0.3106) per pound, with freight allowed to Connecticut Valley points.

ARTICLE V. DELIVERY AND STORAGE

A. The Contractor shall notify the Government in writing at least ten (10) days in advance of the anticipated date of delivery to the Government of each lot of refined copper, which notification shall contain the approximate weight of each lot and identification as to each grade. In no event shall any refined copper be shipped to the Government or for its account unless and until explicit shipping instructions are furnished by the Government. All refined copper tendered to the Government hereunder shall be in lots of not less than thirty (30) short tons. All refined copper delivered to the Government pursuant to this Contract shall be prepared for shipment in accordance with the refiner's usual methods for packing, storing, and shipping similar materials, in so far as such methods are consistent with the requirements of Article III hereof.

B. Delivery to the Government hereunder shall be f.o.b. common carrier's conveyance, refiner's plant, and title shall pass to the Government upon issuance of a receipted bill of lading. In the event the Government shall fail to supply shipping instructions to the Contractor within thirty (30) days after the Contractor's written notice to the Government of the availability of such refined copper for delivery to the Government pursuant to the terms of this Contract, or if the Government so requests, the Contractor shall cause such refined copper to be adequately stored at reasonable charges and shall cause storage certificate, in form satisfactory to the Government, to be issued therefor. Title to refined copper placed in storage pursuant to the terms hereof shall pass upon issuance of an acceptable storage certificate, and such refined copper shall be considered as delivered for the purposes of this Contract.

C. The Contractor shall, if the Government so desires, make arrangements with the refiner, or refiners, satisfactory to the Government, to act as forwarding agent for the Government without additional expense to the Government, to effect shipment of all deliveries in accordance with instructions to be furnished by the Government and to process all necessary shipping documents. All costs, if any, incurred in placing refined copper on board common carrier and handling charges in connection therewith shall be for the Contractor's account. operating cost?

ARTICLE VI. WEIGHING, INSPECTION, SAMPLING AND ANALYZING

Refiner's weight certificates shall govern and the cost of weighing shall be for the Contractor's account. The Government may at its election and expense have any and all deliveries of refined copper weighed by a licensed weigher and sampled and analyzed by recognized analysts selected by it. The Standard Specifications of the American Society for Testing Materials, latest revision as of the date of this Contract, shall apply to the weighing, inspection, sampling and analyzing of any refined copper delivered under this Contract and in the investigation of any disputes that may arise from such weighing, inspection, sampling and analyzing. Any refined copper delivered under this Contract which fails

to meet the specifications set forth in Article III hereof as determined by this Article shall not be cause for cancellation of any deliveries hereunder but such refined copper shall be deemed rejected and is to be replaced by the Contractor at its expense within ninety (90) days at the Government's point of destination in the United States unless the Government, in writing, within thirty (30) days, notifies the Contractor of its acceptance of such refined copper under this Contract, and, in addition, the Contractor shall reimburse the Government for the cost of the weighing, inspection, sampling and analysis of the defective material being replaced.

ARTICLE VII. PAYMENT

Payment for refined copper delivered hereunder shall be made promptly upon presentation to the Government of (1) the Contractor's properly certified invoice, satisfactory to the Government, showing, among other things, grade, lot, marks, pieces, and weights; (2) certified weight certificates and certificates of analysis; and (3) copy of receipted common carrier's bill of lading or storage certificate in the case of refined copper stored hereunder.

ARTICLE VIII. TERMINATION

The obligations of the parties hereunder shall cease and this Contract shall be terminated (except that the obligations of the parties hereto with respect to the disposition of, and payment for, such quantity of refined copper as may have been produced hereunder prior to the time of such termination shall remain in full force and effect until discharged in accordance with the terms hereof) upon the earlier occurrence of:

(a) December 31, 1955; or

(b) The production and disposition hereunder by the Contractor of Twelve Million (12,000,000) pounds of refined copper cathodes.

ARTICLE IX. REPORTS

The Contractor shall furnish the Government, from time to time, such reports as the Government may reasonably require, including but not limited to:

note

(a) Monthly reports showing production of copper ore, copper concentrates, and refined copper, and costs thereof;

(b) Financial reports as of the close of the Contractor's fiscal year within sixty (60) days thereof which shall be

certified by an independent certified public accountant for each fiscal year during the term of this Contract; and

(c) Such other reports and information as the Government may reasonably require.

ARTICLE X. ADDRESSES

Notices by the Government to the Contractor provided for in this Contract shall be addressed to:

Vermont Copper Company, Inc.
South Strafford
Vermont;

and notices and reports by the Contractor to the Government shall be addressed to:

Emergency Procurement Service
General Services Administration
7th and D Streets, S. W.
Washington 25, D. C.

or such other address as either party for itself may specify to the other in writing.

ARTICLE XI. COMPLIANCE WITH APPLICABLE LAWS

In the performance of this Contract, the Contractor shall comply with and give all stipulations and representations required by any applicable Federal, State, Municipal or local law, or Executive Order, or any applicable rules, orders, regulations or requirements of any government department or bureau, but nothing herein contained shall be considered as preventing the Contractor from contesting in good faith the validity of such law, rule, order, regulation or requirement or any charge that Contractor has not complied therewith.

ARTICLE XII. WALSH-HEALEY ACT

There are hereby incorporated by reference all representations and stipulations required by the Walsh-Healey Public Contracts Act, as amended (41 U. S. Code 35-45), and regulations issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect.

ARTICLE XIII. ANTI-DISCRIMINATION

In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, or national origin; and further agrees to insert the foregoing provision in all subcontracts hereunder except subcontracts for standard commercial supplies or for raw materials.

ARTICLE XIV. CONTINGENT FEES

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Contract without liability or in its discretion to deduct from the Contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XV. INTEREST OF MEMBER OF CONGRESS

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this Contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

ARTICLE XVI. ACCESS TO BOOKS AND RECORDS

The Contractor agrees that the Government or any of its duly authorized representatives shall, while the Contract is in effect, and for a period of three (3) years thereafter, have access to and the right to examine any pertinent books, documents, papers and records of the Contractor involving transactions related to this Contract.

The Contractor further agrees to include the following provision, with appropriate insertions, in all its subcontracts (herein defined as any agreement with another party providing for construction, improvements, or other work called for by this Contract, whether or not that purpose is so specified in the agreement) hereunder:

> "(Name of Subcontractor) agrees that the Government or any of its duly authorized representatives shall, until the expiration of three years after final payment under Prime Contract No. DMP-94 between the United States of America and Vermont Copper Company, Inc., have access to and the right to examine any pertinent books, documents, papers and records of (Name of Subcontractor) involving transactions related to this Contract."

ARTICLE XVII. ASSIGNMENT

A. The Contractor shall not, without the prior written consent of the Government, sell, assign, or pledge this Contract or any of its rights, powers, privileges, duties or obligations thereunder; provided, however, that any moneys due or to become due under this Contract, but not including any advances made or to be made hereunder, may be assigned by the Contractor to a bank, trust company or other financing institution, including any Federal lending agency, pursuant to and in accorance with the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C.15).

B. All rights, powers, privileges, duties or obligations under this Contract shall inure to any successor or successors of the Administrator of General Services or any branch or agency of the Government to which the Administrator of General Services shall hereafter delegate or assign his authority to act for the Government hereunder.

ARTICLE XVIII. FORCE MAJEURE

If the performance of any part of this Contract by either the Contractor or the Government is prevented, hindered or delayed by reason of any cause or causes beyond the respective control of the Contractor or the Government, and which cannot be overcome by due diligence, then the Contractor or the Government, as the case may be, shall be excused from such performance during the continuance of any such happenings or events. To become operative, the Contractor or Government, as the case may be, shall give to the other, within ten (10) days after the occurrence of such happenings or events, written notice thereof, together with a statement setting forth the facts in evidence, and, upon the conclusion of such happenings or events, shall notify the other in writing of such termination within ten (10) days.

ARTICLE XIX. DEFAULT

Notwithstanding any other provision of this Contract, the Government may, by notice in writing to the Contractor, cancel this Contract or any part thereof at any time, without payment by the Government of damages or penalty of any kind for such cancellation, in the event (a) a receiver, liquidator or trustee is appointed for Contractor or its property, or Contractor makes an assignment for the benefit of creditors, or Contractor becomes insolvent, or a petition is filed by or against Contractor pursuant to any of the provisions of the United States Bankruptcy Act, as amended, for the purpose of adjudicating Contractor a bankrupt, or for the reorganization of Contractor, or for the purpose of effecting a composition or rearrangement with Contractor's creditors, and such receiver, liquidator, or trustee is not discharged or any such petition filed against Contractor is not dismissed within sixty (60) days, (b) of the liquidation or dissolution of Contractor, whether voluntary or involuntary, (c) of default by Contractor in the performance of any of the terms, conditions or covenants of this Contract or any amendment or supplement thereto, (d) of the determination by Government that Contractor obtained this Contract for the purpose of speculation.

ARTICLE XX. NON-WAIVER

The failure of either the Contractor or the Government to insist in any one or more instances upon the performance of any of the terms, covenants or conditions of this Contract, shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant or condition by the other party hereto, but the obligation of such other party with respect to such future performance shall continue in full force and effect.

ARTICLE XXI. MODIFICATIONS

No oral statement of any person shall modify or otherwise affect the terms, conditions or specifications of this Contract.

ARTICLE XXII. READJUSTMENT AND CANCELLATION

Notwithstanding any other provision hereof:

(a) The Government shall, at its option, by giving written notice to the Contractor, have the right to renegotiate any of the terms and conditions of this Contract, including the price for refined copper to be delivered to the Government hereunder. If the Government and the Contractor are unable to agree upon a readjustment within ninety (90) days from the date of such written notice, then this Contract as to any portion thereof remaining uncompleted shall, as of the end of such ninety (90) day period, automatically terminate without payment of damages or penalty of any kind by the Government;

(b) The Government shall also have the right to cancel this Contract, without payment by the Government of damages or penalty of any kind for such cancellation, upon ninety (90) days' written notice to the Contractor;

(c) This Contract shall automatically terminate, without payment of damages or penalty of any kind by the Government, as to any portion of the Contract remaining uncompleted after June 30, 1956;

provided, however, that the Contractor's obligation with respect to storage, sales and shipment of the refined copper shall survive the termination of this Contract.

IN WITNESS WHEREOF, the parties hereto have caused this document to be duly executed this 19th day of March, 1954.

UNITED STATES OF AMERICA

By /s/ A. J. Walsh

VERMONT COPPER COMPANY, INC.

By /s/ John F. Cowley

Title President

ATTEST:

By /s/ Stanley C. Wilson

Title Clerk

(CORPORATE SEAL)

GSA-WASH DC 54-6597

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

DOCKET COPY

Project Summary Report

By: Michael Ching April 20, 1954

1. Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Property - Elizabeth Mine
Orange County, Vermont

Operator - Vermont Copper Company
South Strafford, Vermont

Operator's property rights -
Owner of an area of land on Lot #84 in the Third Division of Strafford Township consisting of parcels numbered 2E, 2C, 2B and that portion of 3A and 3B lying north of line A-A' as shown on "Plan of Land" map attached to contract.

2. Contract dated August 1, 1951

Work authorized (actual cost basis)

Prepare six diamond drilling stations and drill 24 holes totalling 14,400 feet	$51,382.00
Government's share @ 50%	25,691.00

Amendments -

No. 1. March 18, 1952. Permits drilling of 3 holes from a new position further south than originally planned.

No. 2. October 8, 1953. Amends the number and location of the diamond drill holes.

No. 3. February 5, 1953. Provides for work recess from January 1 to April 30, 1953, and extension of completion date from 2 years to 28 months from date of contract.

No. 4. August 14, 1953. Provides for work recess from April 30 to not later than October 1, 1953, and extension of completion date from 28 months to 30 months from date of contract.

Work completed -

20 diamond drill holes, drilled from 8 locations, totalling 9,711 feet	$34,832.51
Government's share @ 50%	17,416.28

Project work was started in August, 1951 and completed December 31, 1952. Contract was in recess until October 1, 1953, at which date it was terminated by agreement.

3. Final Audit - December 14, 1953

Total cost as billed by Operator	$34,832.51
Exceptions	None
Total accepted cost	$34,832.51
Government's share @ 50%	17,416.28

4. Certification of Discovery - March 15, 1954

5. Comments -

The purpose of the project was to explore for the northward extension of an ore body which was being worked in the Elizabeth mine, by means of groups of diamond drill holes drilled from stations spaced at regular intervals of 500 feet along the strike of the principal vein. This plan was modified somewhat as the work progressed and new information became available.

Accordingly, some holes were drilled at points 500 feet and 750 feet further south than originally planned to successfully intersect the ore body. A footwall zone indicated by an electromagnetic anomaly west of the known ore vein was also added to the original drilling area. Some mineralization was found in the footwall zone but not sufficient to indicate a commercial ore body.

The Elizabeth ore body is located in a highly metamorphosed schist of paleozoic age. An amphibolite bed 40-60 feet wide, within the main country schist, forms a tight synclinal fold, and the ore is found in this syncline. The main ore body is located in the east limb or hanging wall zone and the newly discovered mineralization mentioned above is located in the west limb or footwall zone.

While drilling from the surface under the subject contract the Operator continued underground drifting on the 975 level for his own account. The drift followed the vein system northward and is expected to enter DMEA ground early in April, 1954. The information obtained from this underground work was of great value in evaluating and planning the surface diamond drilling. Through the latter drilling an ore body was found which extended northward from the south boundary of DMEA ground for a minimum distance

of 800 feet, and appeared to have a minable width of from 5 to 30 feet. It contains an estimated 90,000 tons of 2.5% copper ore and appears to be a continuation of the ore body presently being worked in the Elizabeth mine.

The possibility of finding other ore bodies further to the north and in the parallel vein to the west is good, but additional exploratory drilling from the surface at this time is not justified because of excessive cost, and the fact that more effective work can be done later on the basis of geological information secured from advancing underground workings. For these reasons the subject contract was terminated by mutual agreement after 9,711 of the authorized 14,400 feet of drilling had been completed.

The Operator conducted the exploration work in an efficient and intelligent manner. The engineering and geologic supervision was excellent, and progress and final engineering and geologic reports were good.

Michael Ching

Michael Ching

✓ Audited

✓ Certified

ANALYSIS SHEET - DMEA PROJECT

Analysis as of 11/20/54
Incl. Voucher for Final

✓ Actual Cost

☐ Agreed Unit Costs

Name Vermont Copper Co.

Docket No. 1526

State Vermont

Commodity Copper

Ind-E No. 94

OPERATION	AUTHORIZED Units	AUTHORIZED Costs	COMPLETED Units	COMPLETED Costs	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Diamond) (Specify)	14,400	51,382.00	9,711	34,832.51	~~51~~ 34,832.51
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify)					
Totals		51,832.00 X		34,832.51	34,832.51

Correct total 51,382.00 ✓

Prepared by [illegible]

✓

ACTION ON INTERIM
OR FINAL FIELD TEAM REPORT
Date 10/5/56

Referred to:

1. ~~Mr. Mittendorf~~ Mr. Selfridge
2. ~~Mr. Dickson~~
3. ~~Mr. Chambers~~
4. ~~Docket Control Mail Section~~
5. ~~Mr. Bakan~~ ~~Division~~
6. Docket Control Mails and Files

Note comments in report regarding:

1. Revised ore reserves

2. Investment data

3.

4.

and take appropriate action.

- - - - - - - -

Action taken by Division:

C. O. Mittendorf (fw)
~~Robert E. Adams~~

Docket

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

Memorandum for the Files October 5, 1956

From: C. O. Mittendorf
Administrator

Subject: Semi-Annual Report Data for Certified Project

Docket DMEA-1526 (Copper)
Contract Idm-E94 - Vermont Copper Company, Inc.
Elizabeth Mine, Orange County, Vermont

On Thursday evening, August 30, 1956, I arrived at the Elizabeth Mine and was a guest at the Cowley residence. Before retiring I discussed ore reserves, production, and investment data, which Mr. Cowley very freely offered to furnish the next day. The next morning I called at the office.

It was a most inopportune time for me to request these data because it was not only payday and the end of an operating period, but the staff and crew were preparing for a three-day shut-down over Labor Day. This also included the mill. Hence, the small accounting and clerical staff were already heavily engaged in their own work. An untimely accident caused by the welder inadvertently allowing his lighted torch to enter his glove resulted in severe burns and necessitated transport to the nearest physician some 17 miles away. This unfortunate mishap added to the confusion.

I found that the answers to the few questions I raised were more difficult to supply than I had anticipated. Considerable back-reference work was necessary. There were two principal reasons for this:

1) Because Vermont Copper repaid DMEA in one lump sum, no separate records were kept for DMEA ore.

2) The property changed hands after the DMEA project was completed, and accounting records as between Vermont Copper and Appalachian Sulphide were terminated and reestablished accordingly. Hence it was necessary to work from two separate sets of records.

I finally came out with the following data:

1) Original estimate of reserves

90,000 tons of 2½% copper

2) Increase by work performed subsequently

90,000 tons @ 3%

3) Revised estimate of reserves

180,000 tons @ 3%

Reconciliation

There were two reasons for the increase: (a) erroneous assumptions made upon completion of the DMEA work, and (b) additional work done by the operator.

(a) The most northerly drilling under DMEA indicated that the orebody was "horsetailing." The last DMEA hole failed to intersect ore. At this point the contract was terminated by mutual agreement.

(b) Further underground development and surface drilling to the north by the operator revealed that the last DMEA hole was misleading since the orebody did reconsolidate and continue northerly for several hundred feet.

High-grade areas between DMEA holes north of Coordinate 1620 N. were disclosed by production raises.

4) Total production from DMEA area and extension proved by operator

174,000 tons @ 3% copper

5) Percent of revised reserves mined

97 percent
(6000 tons remain N. of Coordinate 1620 N.

6) Value of DMEA production sold

The management estimates that the 180,000 tons of 3% ore will result in 9,603,000 pounds of salable copper in concentrate after smelter loss deductions.

The gross revenue per pound of copper after deductions for transportation, sampling, umpiring, refining, etc., is as follows:

1954	one-third of total @ 33¢ per lb.	
1955	two-thirds of total @ 39.94¢ per lb.	
Average		36.6¢ per lb.

36.6 x 9,603,000 = $3,481,698

Mill recovery 91.2% (55# per ton ore); ratio of concentration 6.6:1; grade concentrate 24.8% copper

7) Production remarks

Mr. Cowley did extend the life of the mine from 1½ to 2 years by his open cut operations inaugurated when I last visited the property in 1953. He has followed the trough of the syncline from where it outcropped and on its downdip for a distance of 600-800 feet. I visited the open cut Sunday morning, September 2, in a heavy rain which began early Saturday evening. The cut was flooded by rain and run-off and I was told that some of the crew worked through the early morning hours to salvage the dozer, shovel, and pumps. It was said that some men worked in water to chest height. Obviously, the cut must be pumped out before mining can resume. Cowley estimates that the mine has one more year in sight. He is milling 23,000 tons per month. Mill heads are falling and averaged 1.3% copper for August. He has an arrangement with GSA whereby one-third of monthly production of refined copper is shipped to stockpile under his contract with GSA at 31½ cents per pound. He sells the other two-thirds on the open market. Although the August operating statement was still in preparation, it was felt that it would show a substantial loss for the month.

Other remarks (Investments, etc.)

The operator extended the 975 N. drift (main haulage) for 1500 feet and drove 350 feet of footwall subdrifts. The 975 N. drift is 8 x 8 (no timber), has 30# rails; 16" vent tube with two 15 H.P. blowers; 6" air line and 1" water line. (He taps drill holes for water requirements.) Direct cost $35 per foot. Estimates total pre-production expenditures directly related to the DMEA work at $75,000.

Operator has also conducted active exploration work north of the DMEA work during the past two years. Surface and airborne geophysical surveys, soil analyses and diamond drilling - estimated cost $75,000. None of this exploration work resulted in a finding of ore.

The eventual abandonment of the mine will result in a tremendous economic shock to the nearby communities. The crew is not especially worried because many feel that the mine has ceased operations before, only to resume them later, and that "something will happen again."

Cowley is also manager of the Ore Knob Mine located in North Carolina. Like Vermont Copper, it is controlled by Nipissing, a subsidiary of Ventures. Some of the key men at Vermont Copper have already been assigned to the new enterprise. The chief mill mechanic will break in the new mill at Ore Knob early in 1957 and Pat Sheedy will remain at Vermont Copper to help wind up. There is the possibility that the Vermont Copper mill will be dismantled and part of it reinstalled at Ore Knob.

The Ore Knob shaft is nearing completion and station cutting will soon get under way. The shaft is 1040 feet deep; 3 compartments; steel sets, 5.3 x 5.6 inside. It was contracted by the Corwin Company of Birmingham, Alabama, at $267 per foot.

The Denver Engineering Company has the contract for the first section of the mill. Foundations, bins, and buildings are completed and some machinery has already been installed. Other items are yet to arrive. Contract cost 350 tons per day unit (except primary crusher) $514,000.

O Mitkeadoy

Administrator

File Copy
Surname

Klugeschied.
Mariano
Martin
E. Johnson
Mittendorf

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

JUN - 8 1956

Mr. Robert A. Laurence
Executive Officer
Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Re: Docket No. DMEA-1526 (Copper)
Appalachian Sulphides Company
(Formerly Vermont Copper Co.)
Elizabeth Mine
Orange County, Vermont
Contract No. Idm-E94

Dear Mr. Laurence:

We refer to Semi-Annual Report of Certified Project dated March 7, 1956.

In the above-mentioned report it was stated that a letter was to be sent to Mr. Mittendorf by the company manager giving the revised ore reserve data, production to date, and the increase in reserves by work performed subsequent to the DMEA work.

We would also suggest that it would be desirable to have any available information on expenditures for development, etc., and the effect of all this work on the community and surrounding region which the company would be willing to give.

The information has never been received by the Administrator and, as we are now in the process of recording some statistics, we would like to have it as soon as possible.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (2/B)

APPROVED:

/s/ Robert W. Geeham (2/B)
Member, Bureau of Mines

Thor H. Kiilsgaard (2/B)
Member, Geological Survey

WPKlugeschied/er 6/6/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS

R.C.B.

Chron.

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Surname

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

September 21, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Docket No. DMEA-1526, Vermont Copper Company, Elizabeth Mine, Orange County, Vermont, Contract No. Idm-E94, (Copper).

Docket No. DMA-269X-A, Banner Mining Company, Mineral Hill Copper Mine, Pima County, Arizona, Contract No. I-DMA-E32, Copper.

Docket No. DMA-269X-B, Banner Mining Company, Twin Buttes Copper Mine, Pima County, Arizona, Contract No. I-DMA-E33, Copper.

I have scanned the above dockets relative to any possible change in tonnage setup due to present copper prices.

In the case of Vermont Copper Company, Inc., it would be hard to expand the ore reserve (due to increased price base) with the information we have at hand.

The DMEA drilling extended the known ore zone for a distance of 800 feet northerly. It is quite probable that such ore zone continues northerly beyond the limits of the DMEA drilling, but no data are available other than favorable surface exposures.

The main ore body occurs in the east limb of a synclinal fold. DMEA drilling also indicated mineralized areas within the west limb of the same fold but the intercepts were very low grade, 0.3 to 0.5% copper, which is hardly ore even at present prices. However, it is possible that this west limb may contain commercial ores in some areas.

As to the remaining tonnage, these people paid their indebtedness to the Government in May 1954 and we have no subsequent data. DMEA ores were 90,000 tons, 2.5% Cu.

We have two Banner Mining Company projects, DMA-269X-A and DMA-269X-B.

DMA-269X-A

The Field Team gave an estimate of 451,261 tons of 2.8% copper ore.

The Operator's estimate was 529,400 tons with a grade of:

2.61% Cu.
.78oz. Ag.
.05% WO_3
.05% MoS_2

In view of the present price situation, I would be inclined to accept the Operator's estimate.

The company also discovered a promising orebody called The Daisy Mine, some 2,500 feet to the northwest. We have little information on this.

As to ore remaining, the Government received full payment in April 1955, and we have no recent information. A fair guess would be that 225,000 tons have been milled to date, which would leave some 300,000 tons. However, some of the ore milled may have come from the Daisy Mine.

DMA-269X-B

A small DMA orebody of 4,057 tons has already been mined out. However, low-grade ores, totalling 63,800 tons of 1.6% copper, should properly be included if such has not already been done. Such ore should be commercial today.

W. R. Griswold

W. R. Griswold

WRG/er

Copy to: Docket (3)
Base Metals (3)
Chron.

Bill —

When you have a breather — can you tell me something about the prodn potential of Vermont Copper & Banner Mining —

Specifically:
In each case we set them up in our ore reserve journal — tons X — grade @ ¢ per lb.

The Jney report (Reg V) states that Vermont Cu ore body is much larger than estimated & grade up to 4%. Is there enough data in our files to estimate how much tonnage might remain on both cases — when mined at — say 40-45¢? (& thus change our ore reserve estimates substantially)

SEP 1 1954

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket DMEA-1526 (Copper)
Contract Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Under the contract cited above the Government allotted a total of $51,382.00 for the exploration project and agreed to share 50 percent of the actual cost of the approved work. Your company claimed on the "Operator's Monthly Report and Voucher" a total cost of $34,832.51. The Contract Administration and Audit Division of this Administration in its final audit report of December 14, 1953, determined the total allowable cost of the project to be $34,832.51, and the Government's share at 50 percent participation to be $17,416.28.

The amount of $17,416.28 was, therefore, established on our books as an account receivable to be liquidated during a period of ten years from date of contract provided that sufficient ore would be marketed to make such payment at the rate of royalty established in the contract.

Your company, however, elected to repay the entire amount of the Government's advance immediately instead of waiting for the slower royalty earnings to retire the obligation. The amount of $17,416.28 was received from your company and deposited with the Treasurer of the United States on May 17, 1954, and our records have been adjusted accordingly. This is an unusual act on the part of our contractors. It has saved the Government money, time, and energy in bookkeeping, engineering, inspection, and other general overhead expenses.

I wish to express the sincere appreciation of this Administration for the patriotic and commendable manner in which the Vermont Copper Company performed its operations and obligations under DMEA contract No. Idm-E94.

With warmest personal regards,

Sincerely yours,

Administrator

JIChambers/
COMittendorf/fw
cc: Mails & Files
Admr. Reading File
Mr. Chambers
F.T. Reg. VIII
Rare Metals Div.
Mr. Gildersleeve-Rm.5223
Mr. C. H. Johnson-Rm.3621

R.C.G.

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

Defense Minerals Administration
RECEIVED
MAY 17 1954

May 17, 1954

Mr. John F. Cowley, President
Vermont Copper Co., Inc.
South Strafford, Vermont

Subject: Docket DMEA-1526 (Copper)
Contract No. Idm-E94

Dear Mr. Cowley:

This is to acknowledge receipt of Vermont Copper Company, Inc. Voucher No. 54-5-15 for $17,416.28 payable to Treasurer of the United States in repayment of funds advanced by the Government during exploration under the subject contract.

Work under this contract has been interesting and associations pleasant. We are glad that it was proved successful.

Very truly yours,

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

WTM:rwa

copy for Mr. Mittendorf
DMEA Files 2

Standard Form No. 1044—Revised
Form approved by Comptroller General U. S.
June 25, 1936

Contract Adm. & Audit Division

SCHEDULE OF COLLECTIONS

Schedule No. DMEA-2

Sheet No. 1

U. S. Department of the Interior, Bureau of Mines, College Park, Maryland
(Department or Establishment) (Bureau or Office)

Received by I. Carrico, Regional Disbursing Officer at Cleveland, Ohio
(Name) (Title) (Station)

Period May 1954 Sta. 14-23-050 D. O. Symbol No. 448
(Month or quarter ended)

Date Received	Receipt Number	Name of Remitter	Detail Description of Purpose for Which Collections Were Received	Amount	Fund to be Credited (Symbol and title in full)
5/17/54		Vermont Copper Company, Inc. South Strafford, Vermont	Lump Sum Repayment of Government Advance on Contract Idm-E-94, Docket No. DMEA-1526, Elizabeth Mine, Orange County, Vt.	$27,416.28	14X4401 Revolving Fund, Defense Production Act, Interior
			Total,	$27,416.28	

Received _____, subject to collection. Forwarded May 17, 1954

_____
(Disbursing clerk or accountable officer)

By _____ By _____
(Name)

Title P. R. Kantner, Admin. Asst.

Certificate of Deposit No. _____ dated _____

U. S. GOVERNMENT PRINTING OFFICE 10—1790

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

MINES AND OFFICE
Telephone - South Strafford 5-2411

COPY

May 13, 1954

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

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Millar:

Vermont Copper Company, Inc. desires to repay the advance of $17,416.28 made by the Government under the subject contract in order to save the Government and the Copper Company the time, trouble and expense of making repayment by royalties as provided in the contract.

Pursuant to instruction from Mr. C. O. Mittendorf, Administrator, by letter dated April 30, 1954, we enclose our check drawn to the order of the Treasurer of the United States in the amount of $17,416.28.

We also wish to express our thanks and appreciation to you and your staff for the splendid cooperation we have received in this matter.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:sm
Encl.
cc: C. O. Mittendorf

FILE COPY
SURNAME:

Jackson

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

APR 30 1954

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Receipt is acknowledged of your letter dated April 23, 1954, in connection with repayment of the funds advanced by the Government under the subject project.

I agree that the proposed lump sum repayment of the advance made to your company by the Government, as suggested by you, would save both your company and the Government considerable time, trouble, and expense. If your company decides to make the repayment in this way, please draw the check to the order of the Treasurer of the United States, and mail it to Mr. W. T. Millar, Executive Officer, DMEA Field Team, Region VIII, Bureau of Mines, Eastern Experiment Station, College Park, Maryland.

The cooperation you have given to DMEA with respect to this project and your desire to expedite settlement of your obligations is sincerely appreciated.

Sincerely yours,

C. O. Mittendorf
Administrator (By E.S.T.)

MChing/FEJohnson/
COMittendorf/fw
4/29/54

cc: Adm. Reading File
Docket
CHJohnson, Rm. 3621
B.Gildersleeve, B-242-A,GSA
Mr. Chambers
Code 700
Mr. Ching
Field Team, Reg. VIII(2)

R.C.

Surname
Dock[redacted] copy

700

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

Ching
Ell

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Receipt is acknowledged of your letter dated April 23, 1954, in connection with repayment of the funds advanced by the Government under the subject project.

We have no objection, of course, to your suggested procedure for repayment in one lump sum at this time. If your board of directors approves of this procedure, please make the check payable to the Treasurer of the United States and send to Mr. W. T. Millar, Executive Officer, DMEA Field Team, Region VIII, Bureau of Mines Eastern Experiment Station, College Park, Maryland.

Sincerely yours,

Administrator

MChing/gla
4-27-54
cc to: Adm. Reading File
Docket
Messrs. CHJohnson, Rm. 3621
B.Gildersleeve, B-242-A, GSA
Mr. Chambers
Code 700
Mr. Ching
DMEA Field Team, Region VIII (2)

4/27/54 gla

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

MINES AND OFFICE
Telephone - South Strafford 5-2411

April 23, 1954

Mr. C. O. Mittendorf, Administrator
Defense Minerals Administration
U. S. Department of the Interior
Washington 25, D. C.

Re: Docket DMEA -1526(Copper)
Contract Idm-E94

Dear Mr. Mittendorf:

This will acknowledge your letter dated April 20, 1954 in connection with royalty payments which will be due the government when ore production commences in the area covered by the subject contract.

We have started a raise at N 16,400 today which is practically on the border of the said area. This raise is in waste rock now and we expect ore to be encountered between 50 - 75 feet above the 975 level or sometime during the month of May. Any ore extracted will be sampled as indicated by Mr. Burmeister's memorandum to you.

In view of the complications involved in sampling, assaying, accounting and auditing by our people and yours in arriving at a satisfactory basis for the payment of these royalties, it is believed that both our Company and the Government would make substantial savings if we pay you the entire amount of the loan in one lump sum at this time.

This procedure will be recommended to our board of directors at its annual meeting on May 11th with the probability of approval.

Will you kindly advise us if there is any objection to such procedure.

Very truly yours,

John Cowley

John F. Cowley
President

JFC:an

FILE COPY
SURNAME:

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

APR 20 1954

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Re: Docket DMEA-1526 (Copper)
Contract Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Your letter of January 19 to the DMEA office at College Park, Maryland, indicates that production subject to the Government's royalty may start this month, and inquires as to "... the procedure recommended with regard to determination of quantity, grade and net proceeds."

The general rule for determining the "net proceeds" upon which the Government's royalty is to be computed may be stated as follows:

> "The Government's royalty shall be a percentage of the sum of the individual payments made (including any bonuses, premiums, allowances, or other benefits) for the production sold, in the form sold (ore, concentrates, metal, or equivalent) at the point of delivery (f.o.b. point); less the deductions and charges made by the buyer arising in the regular course of its business and shown on the buyer's settlement sheets, on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and hauling or freight paid by the buyer directly to a carrier.
>
> "The costs of treatment processes, sampling and assaying, or transportation, performed or paid by the operator or by anyone other than the buyer, are not deductible from 'the sum of payments made' for purposes of royalty calculation.
>
> "The term 'treatment processes,' as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent, but not fabricating or manufacturing) used to put the crude ore or other production after its extraction from the ground into a commercially marketable form."

Any difficulty there may be in applying the rule in your case arises, as I understand it, from the fact that not all of your production will be subject to the Government's royalty, and also from the various methods employed in processing and disposing of your production.

RCG

Mr. Burmeister, in a memorandum report dated February 17, has stated your suggestion, as I understand it, to keep a daily record of the number of cars of ore produced. All cars, he states, would be sampled, and the assay of the composite sample multiplied by the established car tonnage factor would represent the copper content of the ore produced that day. It is understood by Mr. Burmeister that the same procedure would be followed regarding the iron sulfide, and that in each case the over-all mill recovery and concentration factors would be applied to determine the tonnage and grade of DMEA concentrate produced. It would appear that such a method would develop factors to determine the extent to which DMEA production is reflected in the sum of proceeds received from the sales of copper, silver, and pyrrhotite.

If the application of the foregoing to your particular case is inconvenient or impracticable, we might agree on some formula for computing the Government's royalty. Please give me your suggestions.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

Enclosure

JLHofflund/COMittendorf/fw
4/20/54

cc: Mails & Files
Admr. Reading File
Field Team, Reg. VIII (2)
Rare Metals Div.
Mr. Hofflund
Mr. Mittendorf

140

FILE COPY
SURNAME: K

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

NSinRR

April 15, 1954

Memorandum

To: The Administrator

From: Chief Counsel

Subject: Draft of letter, Administrator to Operator, Vermont Copper Company, Docket No. DMEA-1526 Contract Idm-E94

You submitted the subject draft of a letter on a routing slip indicating "Surname, if you can! Comment, if you can't!"

I can surname, but would like to comment. Inasmuch as I am sure you understand my reservations with respect to the "uniform rule" for computing royalties set forth in DMEA Circular 32, Supplement No. 2, of April 6, 1954, it is not my intention to refrain from surnaming correspondence which refers to and relies upon that circular.

However, I have some reservations with respect to your draft letter. Mr. Cowley's letter of January 19 really didn't require any answer until this time, and I think you should avoid the excuses for delay set forth in your first paragraph.

In writing to an operator we should not refer to any "promulgation of uniform rules to be followed in computing the Government's percentage royalty under the provisions of our various contract forms." We cannot bind operators by any promulgation of rules, and it is much better to let the correspondence take the form of simply assuming that the rule applies to the particular contract.

The statement of "the rule" on the last page of your letter is inaccurate and incomplete. It should be taken verbatim from Supplement No. 2 of Circular 32.

I have endeavored to provide you herewith with a skeleton letter which you can fill in. I will confess that I do not understand your stated suggested method of accounting for DMEA ore.

If I am here making confusion worse confounded, I can escape by the usual easy outlet "no legal problem involved."

J. L. Hofflund

J. L. Hofflund
Chief Counsel

Attachment

JLHofflund/emd

Copy to: Docket
J. L. Hofflund
chron.

DRAFT

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Re: Docket DMRA-1526 (Copper)
Contract IDM-294
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Your letter of January 19 to the DMRA office at College Park, Maryland, indicates that production subject to the Government's royalty may start this month, and inquires as to ". . . the procedure recommended with regard to determination of quantity, grade and net proceeds."

The general rule for determining the "net proceeds" upon which the Government's royalty is to be computed may be stated as follows:

> The Government's royalty shall be a percentage of the sum of the individual payments made (including any bonuses, premiums, allowances, or other benefits) for the production sold, in the form sold (ore, concentrates, metal, or equivalent) at the point of delivery (f.o.b. point); less the deductions and charges made by the buyer arising in the regular course of its business and shown on the buyer's settlement sheets, on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and hauling or freight paid by the buyer directly to a carrier.
>
> The costs of treatment processes, sampling and assaying, or transportation, performed or paid by the operator or by anyone other than the buyer, are not deductible from "the sum of payments made" for purposes of royalty calculation.
>
> The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent, but not fabricating or manufacturing) used to put the crude ore or other

production after its extraction from the ground into a commercially marketable form.

Any difficulty there may be in applying the rule in your case arises, as I understand it, from the fact that not all of your production will be subject to the Government's royalty, and also from the various methods employed in processing and disposing of your production. Mr. Burmeister, in a memorandum report dated February 17, has stated your suggestion (as I understand it) ". . . " /Mitt: You will have to fill this in/.

If the application of the general rule to your particular case is inconvenient or impracticable, we might agree on some formula for computing the Government's royalty. Please give me your suggestions.

Sincerely yours,

J. K. [redacted]

Administrator

Surname
Docket copy

700

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

Ellis

April 14, 1954

Memorandum

To: Mr. C. C. Wittendorf, Administrator

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Comments on proposed letter to
Vermont Copper Company re: Royalty Payments
Docket No. DMEA-1526 (Copper)

This Division previously drafted two such letters. Both letters depended on keeping a running account of DMEA ore by car sampling and car tonnage factor as stated by Burmeister and referred to in the last paragraph, second page, of subject proposed letter. Then taking the monthly DMEA copper production and applying average mill and smelter-refinery recoveries the actual amount of DMEA copper produced (since recoveries for this ore remain fairly uniform) would be known and paid for at the rate of 5 percent of the sales value of net metal produced. However, the difference in the two methods brought out in our two letters was simply whether to allow or disallow concentrate transportation cost and smelter-refinery costs.

The first two pages of the presently proposed letter are quite clear and are meant for a build-up of the suggested method of repayment as shown in the second paragraph of page three of the letter. However, I doubt whether Cowley will understand that paragraph. Or, if he does, he will object to it on the basis of the difficulty in processing such a method. While the recovery of the metal may be fairly constant and more or less the same for this ore from both parts of the mine, i.e., Company and DMEA, mine and mill tonnages may vary considerably and the actual "tie-up" in the mill bins and mill circuit will most assuredly vary, making a reconciliation with any "specific lot" most difficult.

However, after all, the letter should "smoke him out" as simply the other two letters were supposed to do and, furthermore, as has been aptly stated, he surely expects to honor the obligation in the long run anyway.

Ernest Wm. Ellis

Ernest Wm. Ellis

EWEllis/gla
cc: Adm. Reading File
Docket
Code 700 contract file
Mr. Ellis

FILE COPY
SURNAME:

Mistendorf
Noted

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

4-12-54

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Re: Docket DMEA-1526 (Copper)
Contract Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Reference is made to the last two pragraphs of your letter dated January 19, 1954, addressed to the attention of Mr. W. T. Millar, Executive Officer of Region VIII, concerning the recommended procedure for the determination of royalty payments due the Government under the subject contract. Our reply to your inquiry has been delayed pending receipt from the General Services Administration of copies of contract No. DMP-94 and your contract with Phelps-Dodge Corporation, and of our own promulgation of uniform rules to be followed in computing the Government's percentage royalty under the provisions of our various contract forms. Both of these actions have been accomplished during the past week.

It will be the purpose of this letter to define in broad terms the amounts which will be subject to Government royalty and to suggest a method for determining to what extent those amounts reflect sales of production resulting from the DMEA work. It is not the purpose of this letter to define any of the various steps of metallurgical and inventory accounting which might be necessary, since these details can best be worked out after receipt of your written suggestions or by later oral discussions.

It is our understanding that the revenue realized from your mining operations will come from three principal sources; namely, the sums received from the General Services Administration under contract DMP-94, the sums received directly from the Phelps-Dodge Corporation for silver, and such other revenue as is received from the sale of pyrrhotite.

Our rule for royalty computation clarifies the meaning of the terms used in the repayment provisions of all contract forms used under the DMEA program. It is as follows:

"The Government's royalty shall be a percentage of the individual payments made (including any bonuses, premiums, allowances, or other benefits) for the production sold, in the form sold, at the point of delivery, less the deductions and charges made by the buyer arising in the regular course of its business and shown on the buyer's settlement sheets on account of the cost of treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight paid by the buyer directly to a carrier.

"The costs of treatment processes, sampling and assaying, or transportation, performed or paid by the operator or by anyone other than the buyer, are not deductible from 'the sum of payments made' for purposes of royalty calculation."

The application of this rule to copper production sold under contract DMP-94 would indicate that all payments made for refined (DMEA) copper delivered thereunder would be subject to the Government's percentage royalty.

The same determination would apply in the case of all payments made for silver, since it is our understanding that the Phelps-Dodge Corporation, which is technically the buyer of the silver, does not allocate freight and treatment charges against silver contained in copper concentrate in the regular course of its business.

This office has no information concerning the terms under which pyrrhotite is marketed. It is presumed that the material is either sold f.o.b. railhead at an agreed tonnage price, net of transport and processing; or shipped to the buyer's plant where settlement is made on the basis of contained sulphur with probable credits for iron sinter. In the first case, the Government royalty would be computed on the gross income received f.o.b. railhead. Under the second marketing method, the stated "rule" would apply and appears to require no further explanation.

In the matter of accounting for DMEA ore, I note that Mr. Burmeister in his memorandum report dated February 17 states your suggestion to keep a daily car count on all DMEA ore trammed. All cars, he states, would be sampled, and the assay of the composite sample, multiplied by the established car tonnage factor, would be furnished to the Government. It is understood by Mr. Burmeister that the same procedure would be followed regarding the iron sulphide and that, in each case, the overall mill recovery and concentration factors should apply to determine the tonnage and grade of DMEA concentrate produced.

It would appear that, once the royalty computation rule is established and company concentrate inventory is accounted for, a more simple method could be devised to determine the extent to which DMEA production would thereafter be reflected in the sum of the proceeds received for sales of copper, silver, and pyrrhotite.

As a suggestion, the daily car count and sample could be applied to both company and DMEA ore to arrive at two weighted figures representing the contained copper input to the crusher bin each day. The results of such a daily procedure would be cumulative for a period fixed by the last shipment of a specific lot, for instance. The calculated percentages of the cumulative weighted input of contained copper could thereafter apply percentagewise, directly and uniformly, to proceeds received for sales of copper, silver, and pyrrhotite. A reconciliation should be made at six-month intervals to adjust for any wide variations in monthly proportions of Company vs. DMEA ore, and plant circuit inventories.

I am enclosing for your information a copy of DMEA Order-1 as revised March 19, 1954. Your particular attention is directed to Section 10(g) which provides authority to agree to other bases of royalty computation in special cases. Chief Counsel has advised me that this administrative discretion may be applied retroactively in cases such as yours.

I shall be pleased to receive your comments on the foregoing and any further suggested methods for reporting DMEA production for purposes of royalty computation.

Sincerely yours,

Administrator

Enclosure

COMittendorf/fw
4/12/54

cc: Mails & Files
Admr. Reading File
Field Team, Reg. VIII (2)
Mr. Mittendorf
Rare Metals Div.

Surn
Docket copy

700

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

Ching
Selfridge
Hedges
Guild
Hattendorf

MAR 1 8 1954

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

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Vermont Copper Company
Elizabeth Mine
Orange County, Vermont

Dear Mr. Millar:

Enclosed are executed Field Team and Finance Office copies of "Agreement For Termination of Government's Obligations Under Exploration Project Contract" dated March 9, 1954, effective as of October 1, 1953, relating to the captioned contract.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (2/5)

Enclosures 2

APPROVED:

J. H. Hedges (2/5)
Member, Bureau of Mines

Philip W. Guild
Member, Geological Survey (2/5)

MChing/gla
3-15-54
cc to: Adm. Reading File
Operating Committee
Docket
Messrs. CHJohnson, Rm. 3621
ARKinkel, Jr., Rm. B-242A, GSA
MChing
Code 700
DMEA Field Team, Region VIII

VERMONT COPPER COMPANY, INC.
South Strafford
Vermont

March 16, 1954

Emergency Procurement Service
General Services Administration
7th and D Streets S.W.
Washington 25, D. C.

Re: Contract No DMP - 94
Att: Mr. John C. Ford

Gentlemen:

This will acknowledge your letter dated March 12, 1954 together with five copies of a proposed contract between the Government and Vermont Copper Company, Inc., and three copies of a certification with respect to retention of any company or person to solicit or secure the proposed contract.

The contract is acceptable to Vermont Copper Company, Inc., and we enclose herewith:

Four certified copies of resolutions by the Board of Directors of Vermont Copper Company, Inc., authorizing the President of said company to negotiate the contract.

Four copies of Contract No. DMP - 94 properly signed and with the corporate seal affixed thereto.

Two copies of a certification with respect to retention of any company or person to solicit or secure the contract signed and with corporate seal affixed.

Four copies of a contract between Phelps Dodge Refining Corporation and Vermont Copper Company, Inc., providing for the smelting of the copper concentrates produced by Vermont Copper Company, Inc., and the refining of the copper from such concentrates. (Article I B of the contract)

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:fg
Encl

PHELPS DODGE REFINING CORPORATION

COPY

March 27, 1953

Mr. George Adams Ellis, Chairman
Vermont Copper Company, Inc.
120 Broadway
New York, N. Y.

Dear Mr. Ellis:

This will acknowledge receipt of your letter of March 27, 1953 confirming the exercise of your option under contract dated January 1, 1953 to have returned under further notice by you the payable copper contents of the Vermont Copper Concentrates delivered to us.

Very truly yours,

PHELPS DODGE REFINING CORPORATION

WALTER C. BENNETT

President

VERMONT COPPER COMPANY, INC., of South Strafford, Vermont, (hereinafter referred to as "producer") agrees to deliver to PHELPS DODGE REFINING CORPORATION of 40 Wall Street, New York, New York (hereinafter referred to as "Refiner"), and the Refiner agrees to receive and to process the material below described as hereinafter provided and upon the terms and conditions hereinafter stated.

MATERIAL:

Copper Concentrates produced from the property of the Vermont Copper Company, Inc., South Strafford, Vermont.

QUANTITY AND PERIOD:

Total production of copper concentrates from Producer's Vermont property from April 1, 1952, to December 31, 1957. Refiner shall not, however, be obligated to receive in any one month in excess of 2,500 short tons of copper concentrates, dry weight.

ANALYSIS:

The copper concentrates shall conform approximately to the following analyses:

Cu	20- 30%	Pb	o.05%
Ag	2 - 5 ozs. per ton	Al	0.50%
Au	0.01 - 0.04 oz. per ton	As	Trace
SIO	1.5%	Sb	Trace
Fe	30 - 35%	Cl	0.04%
S	30 - 40%	Ni)	
Zn	1.00%	Co)	None to a trace

DELIVERY:

F.o.b. cars, or alongside wharf, at Refiner's Plant, Laurel Hill, Long Island, New York.

WEIGHING, SAMPLING AND ASSAYING:

The copper concentrates to be delivered hereunder shall be weighed and sampled promptly after arrival at Laurel Hill, Long Island, New York, according to standard practice at Refiner's expense in the presence of Producer's representative. The expense of such representative shall be borne by Producer.

The samples shall be divided into three parts or more at the option of either party, one or more to be retained by Refiner, one or more to be retained by Producer, and one to be sealed and held by Refiner as the umpire sample. Assays shall be made independently by the respective assayers of Producer and Refiner and the results compared in the customary manner. Should the variation between Producer's and Refiner's assay be not more than the following:

Copper	0.20%
Silver	0.40 oz. per short ton
Gold	0.005 oz. per short ton
As - Sb	0.25%
Ni - Co	0.25%
Bi	0.05%
Cl	0.25%

the exact mean of the two assays shall be taken as basis of final settlement. Should the assays not agree within said splitting limits, the umpire mutually agreed upon shall be resorted to and the middle assay of the three parties shall be the basis for final settlement. The cost of umpire assay shall be borne by the party whose result is the further from the umpire assay. For the purpose of this contract, umpire to be used shall be selected in rotation by mutual consent between Producer and Refiner from Ledoux and Company, Walker and Whyte, of New York, N.Y., and C.L. Constant & Company of Newark, N. J.

BASIS OF ACCOUNTING:

Copper: Refiner shall purchase the full copper content as determined by electrolytic assay, less 15 pounds of copper per short dry ton of concentrates delivered hereunder at the Engineering and Mining Journal daily quotations for domestic electrolytic copper wirebars, f.o.b. refinery, averaged for the Engineering and Mining Journal week (i.e. Thursday through the following Wednesday) following the date of sampling of the last car in each lot.

Silver: Refiner shall pay for ninety-seven (97) percent of the silver content by commercial fire assay in excess of one-half of a troy ounce per short dry ton of the concentrates delivered hereunder at the higher of (A) or (B):

(A) Ninety (90) cents per ounce, being the approximate value per ounce of the standard silver dollars or fractions thereof receivable by Refiner upon exchange for silver content qualified for delivery to U.S. coinage mints adjusted to the equivalent value of silver .999 fine, and to cover cost of delivery and acceptance of meeting requirements and conditions prescribed for acceptance at the Mint.

This price shall be applicable to silver content qualified for delivery to coinage mints of the United States pursuant to the Act of Congress of July 31, 1946 which amended the Silver Purchase Act of July 6, 1939, and to the Treasury Department's Newly Mined Domestic Silver Regulations as amended thereunder whereby silver mined subsequently to July 1, 1946, from natural deposits in the United States or any place subject to the jurisdiction thereof may be tendered in exchange for standard silver dollars coined from 70 per centum thereof (or silver certificates or any other coin or currency of the United States in an amount in dollars equal to such standard silver dollars), the remaining 30 per centum, with the consent of the owner, to be deducted and retained by the Mint as seigniorage for services performed by the Government relative to the coinage and delivery of standard silver dollars.

(B) The average of the Handy & Harman New York quotations for foreign silver published in the Engineering and Mining Journal for the calendar week preceding the 90th day following date of sampling of the material at Laurel Hill.

Settlement for the silver, under (B), shall be contingent upon the Refiner not being restrained from selling such silver in the open market. In case of any such restraint, the Refiner shall return to the Producer in New York City, on the silver due date, any silver which cannot be sold under the above silver pricing clause.

Gold: Refiner shall pay for ninety-eight per cent (98%) of the gold contents by commercial fire assay in excess of .01 of a troy ounce per short dry ton of the concentrates delivered hereunder at the average net price per troy ounce paid by United States Mints for the calendar week following the week of sampling at the Refiner's works.

It is further agreed that the Producer shall furnish the Refiner with all certificates, affidavits or other proofs and reports as may be required from time to time to qualify the silver and gold content of the said copper concen- [illegible]r delivery under the terms of any governmental proclamation and all regulat- [illegible]ofore or hereafter issued thereunder.

PRODUCER'S OPTION TO ELECT RETURN OF COPPER:

Producer shall have the option at any time during the term of this contract, prior to the sampling of the concentrates at the refinery, to elect to have returned to it for such period or periods as it designates, the payable copper concents of the material delivered hereunder. If and when Producer exercises this option, it is agreed that all advances with interest outstanding against such copper will be repaid prior to the delivery of the returnable electrolytic copper, and in the event such electrolytic copper is to be returned to the Producer for shipment to the U. S. Government, the Refiner shall be reimbursed by the National City Bank of New York under existing arrangements between Producer, Government and the National City Bank. The basis for returning copper hereunder is as follows:

Copper: The full copper content as determined by electrolytic assay, less 15 pounds per short dry ton of concentrates delivered hereunder, shall be returned to Producer 30 days after date of sampling. Refiner shall make return in the form of electrolytic copper in standard shapes guaranteed to contain at least 99.9% copper, and to conform to American Society for Testing Materials specifications B 5-43, f.o.b. cars, Laurel Hill, Long Island, New York, subject to Producer's shipping instructions.

Producer shall have the right to specify such shapes and sizes, other than standard shapes and sizes, which said Refiner is able to produce, in which event Producer will pay to Refiner the premium for such shapes and sizes prevailing on the date of return, and if cathodes are returned, Refiner will credit Producer with an amount equal to the cathode allowance prevailing on the date of return.

SMELTING CHARGE:

Producer shall pay to Refiner a Smelting Charge of Fourteen Dollars and Fifty-nine Cents ($14.59) per short dry ton of copper concentrates.

REFINING CHARGE:

Producer shall pay to Refiner one and three-quarter cents (1-3/4¢) per pound of returnable copper as defined under "Basis of Accounting".

LABOR VARIABLE:

The Smelting Charge above, which is based upon a base labor rate at the Refiner's Laurel Hill Works of $1.71416 per hour, shall remain unchanged through December 31, 1953. Thereafter the variation shall be as follows:

For each 1¢ per hour increase above the base labor rate in effect at Refiner's Laurel Hill, Long Island Works, January 1, 1954, the Smelting Charge shall be increased 12¢ per short dry ton of copper concentrates, fractions in proportion and for each 1¢ per hour decrease below the $1.71416 per hour shown above and down to 99.1¢ per hour the Smelting Charge shall be decreased 12¢ per short dry ton of copper concentrates, fractions in proportion.

For any variation in the base labor rate between 99.1¢ per hour and 80.6¢ per hour, there shall be no adjustment in the Smelting Charge. For each 1¢ per hour decrease below or increase up to 80.6¢ per hour, the Smelting Charge shall be decreased or increased 12¢ per short dry ton of copper concentrates, fractions in proportion.

PENALTIES:

Arsenic and Antimony combined: 1% free of penalty, excess over 1% shall be penalized at the rate of fifty cents (50¢) per unit, fractions in proprotion.

Bismuth: 0.1% free of penalty, excess over 0.1% shall be penalized at the rate of twenty-five cents (25¢) per pound, fractions in proportion.

Chlorine: 0.1% free of penalty, excess over 0.1% shall be penalized at the rate of one unit of copper for each unit of chlorine, fractions in proportion.

PAYMENT:

Payable copper contents less all charges shall be payable promptly after agreement of assays for each lot. Net settlement for silver and gold shall be made on the 90th day following date of sampling at Laurel Hill.

At Producer's request, Refiner will advance up to 90% of the estimated net value of the copper concentrate upon receipt of railroad bills of lading and advices of shipment. Refiner will charge Producer interest at the rate of 3% for such advances.

GOVERNMENTAL REGULATIONS:

This contract is subject to all the terms and conditions of any order, rule or regulations heretofore or hereafter made by any bureau or department of the United States Government or by any commission and/or authority duly organized and acting pursuant to any Federal or State statute.

Should any such regulation prevent or materially interfere with the free operation of any provision of this Agreement, the contract may thereupon be suspended or cancelled upon written notice to the other by the party claiming such interference.

CONTINGENCIES:

In case of governmental action, war, fire, flood, strike, lockout, accident to plant, or other causes not limited to the foregoing beyond the reasonable control of the parties interfering with the production, transportation, receipt or treatment of said material, or return of electrolytic copper and/or silver as herein contemplated, the party affected may suspend this contract during the continuance of such interference by notifying the other; but such party will nevertheless exercise all reasonable efforts, at normal expense to limit and obviate such interference.

In case of such interference the period of delivery and treatment hereunder, shall be extended pro tanto.

DIVERSION:

At any time, deliveries and receipts hereunder shall, at the Refiner's option, be made at such works other than the said works of the Refiner as the Refiner shall specify in notice of its election to that effect, given by it to the Producer. Unless otherwise agreed between the parties, all expense of each such diversion, in excess of the ordinary expense of delivery as hereinafter provided, shall be borne by the refiner.

SUCCESSORS AND ASSIGNS:

This agreement and all its provisions ahll bind and inure to the benefit of the parties hereto, their successors or assigns.

IN WITNESS WHEREOF, each of the parties has signed and accepted this agreement this 1st day of January, 1953.

VERMONT COPPER COMPANY, INC
(Producer)

GEROGE ADAMS ELLIS
Chairman

PHELPS DODGE REFINING CORPORATION
(Refiner)

WALTER C. BENNETT, pres.
HENRY KASSCHAU, Asst. Sec.

Surname
Docket copy

700

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

MAR 15 1954

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Elizabeth Mine
Orange County, Vermont

Dear Mr. Cowley:

Enclosed is a "Certification by the United States of America of a Discovery or Development Under an Exploration Project Contract." This certification covers all the land described in Article 2 of the above-described contract.

By the terms of the Exploration Project Contract, as amended, and of the certification, all copper and other valuable minerals produced from the claims described in Article 2 of the contract, from August 1, 1951, the date of the contract, are subject to the Government's percentage royalty as set forth in the contract until the sum of $17,416.28 is paid, or until August 1, 1961.

Payments should be made to Mr. W. T. Millar, Executive Officer, DMEA Field Team, Region VIII, Bureau of Mines, Eastern Experiment Station, College Park, Maryland. Checks should be payable to the Treasurer of the United States. Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Millar of any changes in ownership or production rights that might have any effect on the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period, please notify Mr. Millar at six-month intervals that no production has been made, when that is the case.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

MChing/gla
3-10-54

cc to: Adm.Reading File
Operating Committee
Mr. Hedges, Rm. 4604
Mr. Thayer, Rm. 5216 GSA
Field Team, Region VIII (2)
Docket
Contract Adm. and Audit Div.
F.E.Johnson
M.Ching
Code 700

Surname
Docket copy

700

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

MAR 15 1954

Mr. Irving Gumbel, Acting Director
Materials Division
Emergency Procurement Services
General Services Administration Bldg., Room 5002,
Washington 25, D. C.

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Vermont Copper Company
Elizabeth Mine
Orange County, Vermont

Dear Mr. Gumbel:

Enclosed is a copy of a certification of discovery or development of the captioned project.

The project contract was dated August 1, 1951, and covers an exploration project estimated to cost $51,382.00, with Government participation to the extent of 50 percent, or $25,691.00. Project work under the contract was started in August, 1951, and was terminated by agreement on October 1, 1953. A final audit shows total expenditures during the life of the contract amounting to $34,832.51, with the Government's share amounting to $17,416.28.

The contract authorized the drilling of 14,400 feet of surface diamond drill holes to explore for the northward extension of a copper bearing ore body representing the principal ore zone of the Elizabeth mine.

The work accomplished consisted of 20 diamond drill holes totalling 9,711 feet, drilled from eight locations. An ore body was found which extended northward for a minimum distance of 800 feet and appeared to have a minable width of from 5 to 30 feet. It contains an estimated 90,000 tons of 2.5 percent copper ore and appears to be a continuation of the ore body presently being worked in the Elizabeth mine.

The possibility of finding other ore bodies further to the north and in a parallel vein to the west is good, but additional exploratory drilling from the surface at this time is not justified because of excessive cost, and the fact that more effective work can be done later on the basis of geological information secured from advancing underground workings.

The DMEA is of the opinion that the principal objective of the subject project was attained and, accordingly, we have certified that a discovery or development has resulted from the work.

Sincerely yours,

Thayer C. Mitchell
Administrator

MChing/gla 3-10-54
cc to: Adm. Reading File
Operating Committee - Mr. Hedges - Mr. Mitchell
Field Team, Region VIII (2)
Docket File
Contract Adm. and Audit Div.
F. E. Johnson
M. Ching
Code 700

Ellis
Potter
Hoffman
Chiemsen
Lorraine
Hedges
Selfridge
Johnson

R.C.G. 3-15-54

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1954

March 11, 1954

Memorandum

To: E. W. Ellis, DMEA

From: C. H. Johnson, Base Metals Branch

Subject: DMEA-1526X (Copper), Vermont Copper Company

I have reviewed the final report of the Field Team (Burmeister and Stewart, February 25, 1954) on the above-named project, and concur in the recommendation that a Certificate of Discovery be issued.

For purposes of record and possible future need, it probably should be noted that the estimated ore reserves are in the inferred class.

If the holes were logged, as they should have been, the complete logs should be a part of the final report.

The final report should have included a map showing the location of the drill holes with reference to the mine and the project area.

The Vermont Copper Company deserves commendation for the low unit cost of the work.

C. H. Johnson

C. H. Johnson

Copy to - Mr. Newcomb, USGS
Minerals Division
Mr. Johnson
Files

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

Defense Minerals Administration
RECEIVED
MAR 15 1954

March 10, 1954

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

Re: Docket DMEA - 1526 (Copper)
Contract Idm-E94

Gentlemen:

This will acknowledge your letter dated March 9, 1954 in connection with the termination of the subject contract, together with five copies of an agreement for such termination signed in behalf of the Government.

The provisions of the agreement are satisfactory to us and we are returning to you the original and four copies which we have signed.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:sm

FILE COPY
SURNAME:

Ching
Ellis
Hedges
Lazarovsky
Gilbrige
Hofflund

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

MAR 9 1954

Mr. John F. Cowley
President, Vermont
Copper Company, Inc.
South Strafford, Vermont

Re: Docket No. DMEA-1526 (Copper)
Elizabeth Mine
Orange County, Vermont
Contract Idm-E94

Dear Mr. Cowley:

Enclosed are the original and five copies of an agreement for termination of the subject exploration project contract, signed in behalf of the Government.

If the provisions of the agreement are satisfactory to your company, please sign all six copies of the agreement, retain the copy marked "Operator's Copy," and return the original and four copies to this office.

Sincerely yours,

SIGNED
Administrator

Enclosures 6

MChing:HCR:ep 3-5-54

Copy to: Docket
Administrator
Admr. Reading File
Operating Committee
Region VIII (2)
Mr. C. H. Johnson, B/M
Mr. A. R. Kinkel, Jr., USGS
Mr. Ellis
Mr. Hofflund
Mr. Rubin
Chron.
Pending

R.C. 9-9-54

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
FEB 26 1954

February 26, 1954

Memorandum

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

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket No. DMEA-1526X - (Copper)
Vermont Copper Co., Inc.
Contract No. Idm-E94

Transmitted herewith are:

Original and 3 copies - Operator's Final Report

Original and 3 copies - Field Team's Final Report

Original and 2 copies - Field Team's Recommendation on Terminating the Contract.

W. T. Millar

W. T. Millar

Enclosures

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

RECEIVED
2 6 1954

January 19, 1954

U. S. Department of the Interior
Defense Minerals Administration
College Park,
Maryland

Att: Mr. W. T. Millar
Contract Idm E94
Docket DMEA 1526 X

Gentlemen:

Attached hereto is a report by our Chief Geologist, Dr. Mikkola, on the results of diamond drilling under the captioned contract and a final report, Forms MF-104 and MF-104A showing work completed and expenditures made.

You will note that the estimated quantity of ore made available from such drilling totals 90,000 tons containing 2.5% copper.

We have previously furnished you monthly reports together with maps showing cross sections of each diamond drill hole and the ore interceps.

Our present development program on the 975 level of the Elizabeth mine is steadily progressing to the north and we now expect to do some raising in ore within the DMEA area begining in April, 1954 from which royalties will be payable to the government.

Will you kindly advise us of the proceedure recommended with regard to determination of quantity, grade and net proceeds.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:fg

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Defense Minerals Administration
RECEIVED
JAN 26 1954

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of Final Return, 195____ Docket No. DMEA 1526 X Contract No. IDM-E94
Operator's Name Vermont Copper Co., Inc. Minerals Copper
Address South Strafford, Vermont
Contract Amount, $ 51,382.00 Government Participation: 50 % Amount, $ 25,691.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:		26,341.00	26,341.00			
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor		3,528.14	3,528.14			
Supervision		713.25	713.25			
Technical Services		772.20	772.20			
(3) Operating Mat'ls. and Supplies:						
Timber		132.89	132.89			
Explosives						
Pipe		835.86	835.86			
Track						
Cement		317.27	317.27			
Other		161.50	161.50			
(4) Operating Equipment:						
Rental		117.55	117.55			
Purchase						
Depreciation		1,041.50	1,041.50			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis		517.50	517.50			
Payroll Taxes		137.05	137.05			
Liability Insurance						
P/R Insurance		216.80	216.80			
(8) Contingencies (specify):						
TOTALS		34,832.51	34,832.51			

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 1/19/54 *Payee Vermont Copper Co., Inc.

Per John J. Crowley Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

→ NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$_____

Signature _____
(Authorized Certifying Officer)

Date _____ Vou. No. _____
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. ..... in accordance with the terms of the contract.

Signature ..... Title ..... Date .....

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature ..... Title ..... Date .....

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(*a*) *Form MF–104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(*b*) *Form MF–104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(*c*) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF–104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF–104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF–200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF–200; and delete word "Independent" if the contract reported is on Form MF–200 (A). Also, report work paid for on a unit basis under contract Form MF–200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF–104 when submitted for reimbursable expenses incurred under contract Form MF–200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF–200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF–104 is required to be documented. The four copies of Form MF–104 are not to be thus supported.

Form MF–104 submitted for reimbursement under fixed price contracts on Form MF–200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF–104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

Defense Minerals Administration
RECEIVED
1 26 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Final Return 195____ Docket No. DMEA 1526 X Contract No. DM-E94

Operator's Name Vermont Copper Co., Inc. Minerals Copper

Address South Strafford, Vermont

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core				34,832.51	9,711	3,587	14,400	3.568
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS				34,832.51				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date January 19, 1954 Operator Vermont Copper Co., Inc.

Per John H Cowley Title President

NOTE.—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.

REMARKS: Final Return

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

VERMONT COPPER COMPANY, INC
SOUTH STRAFFORD, VERMONT

January 19, 1954

To: John F. Cowley, President
From: Dr. Aimo K. Mikkola, Geologist
Subject: Report on D.M.E.A. Diamond Drilling

Contract Idm-E-94
Docket DMEA - 1526X

The primary contract, Idm-E-94 dated August 28, 1951, provided for 24 diamond drill holes each about 600 feet long or 14,400 feet drilling. This drilling was planned at six stations, numbered 1-6 inclusive, north of 16,700 N co-ordinate. The purpose of the drilling was to explore the northward extension of the Elizabeth sulphide body, which is presently being mined.

This contract was amended under date of March 18, 1952 to provide for drilling south of the 16,700 N co-ordinate at stations numbered -1 and -1½, and again under date of October 28, 1952 to permit drilling to explore the possible footwall zone indicated by an electromagnetic anomaly 400 - 500 feet west of the known ore body at stations numbered -1A, 1A, 2A and 3A.

General Geological Structure

The Elizabeth ore body is located in a highly metamorphosed schist of the paleozoic age. This schist formation is termed the Gile Mountain formation and consists in its western part mostly of garnet biotite schist with bands of quartzite and fine-grained quartzitic biotite schist. All of these schists are so similar that it is impossible to follow any certain horizon. The only horizon marker is an amphibolite bed about 40-60 feet wide. The general structure in the mine has been solved by means of this amphibolite.

The amphibolite forms a tight synclinal fold; the ore being located in this syncline. The sequence around the ore body is from East to West, from hanging wall to footwall, as follows:

1. Garnet biotite schist with quartzite bands, the main country schist.
2. Hanging wall amphibolite, the East limb of the syncline.
3. Garnet biotite schist, similar to 1. above.
4. Ore in limy bed. (In tremolite skarn)
5. Garnet biotite schist, similar to 1. above.
6. Ore.
7. Garnet biotite schist, similar to 1. above.
8. Footwall amphibolite, the West limb of the syncline.

The strike is, generally speaking, North-South with some variations to the East and West. The dip in the East limb is steep, about 70-80 degrees to the East, and rather straight. The dip on the West limb varies widely from 30 to 70 degrees, depending on the location on the wide drag folds on this limb. The fold axis has a northerly plunge of 10-15 degrees in the south end of the mine, but turns southerly in the North end of the mine. The axial plane dip is about 65° to the East.

The ore is controlled primarily by a favorable horizon of tremolite skarn and by the axial plane shearing, especially on the East limb of the syncline in the North end of the mine.

Faulting is rather common through the whole ore body, but appears to be of only minor importance in localizing the ore. The faults are mostly so-called strike faults which run only short distances, one following another within a few feet, and are partly of pre-ore age and partly post-ore. The post-ore faults are filled by carbonate and pyrite crystals. However, in the North end of the mine there is a stronger fault zone with at least 50 feet of displacement in the normal sense at 15,600 N. How much of this movement is pre-ore and how much is post-ore has not been determined at this time.

At the time of starting the DMEA drilling in 1951, the structure had not been solved. The ore was known in only the East limb of the syncline, and therefore the drill holes at stations 1,2,3, -1 and -1½ were aimed to intersect this zone. Later, electromagnetic exploration and underground workings disclosed the West limb, and the program was changed to include this zone.

Diamond Drilling Data

Station Number	At	Hole Number	Dip Degrees	Bearing	Total Footage	Mineralized Zone Feet	% Cu
1	17,200N	516	-60	N90W	750	5.2	2.05%
		522	-60	N90W	209	abandoned for flattening	
		527	-70	N90W	707	none	- - -
						(20.0	0.52
		539	-50	N90W	646	(24.0	0.85
						(40.4	0.23
		544	-64	N90W	543	none	- - -
		560	-45	N90W	462	none	- - -
2	17,700N	565	-65	N90W	814	none	- - -
		568	-50	N90W	769	6.0	0.21 (Sludge)
-1½	16,450N	574	-49	N90W	496	(3.0	0.65
						(9.0	0.90
		578	-55	N90W	538*	(36.7	2.60
						(12.5	1.11
		587	-64	N90W	648	none	- - -
-1	16,700	611	-58	N90W	553	37.8	2.67
-1A	16,700N	631	-58	N90W	296	27.9	0.32
		634	-35	N90W	286	37.2	0.50
1A	17,200N	636	-35	N90W	38		abandoned
		637	-40	N90W	233	none	- - -
		639	-67	N90W	263	none	- - -
2A	17,700N	642	-60	N90W	389	10.3	0.13 (Fe-16.6%)
		643	-62	N90W	601	15.2	0.14 (Fe-13.0%)
3A	18,200	649	-45	N90W	394	9.1	0.23 (Fe-11.9%)

20 Holes Totaling 9,635 feet, including casing

* 76 feet, hole #598 cemented and redrilled

Total 9,711 feet

Results

The mineralized zone on the East limb of the syncline was intersected at 16,450 N, 16,700 N and 17,200 N sections. The two first sections show rather good grade ore about 30 feet wide, which is probably a double width caused by faulting. at 17,200 N the mineralized zone of minable grade is only 5 feet in one hole, and the hole about 50 feet above shows a mineralized zone 24 feet wide with grade of only 0.85% Cu. In addition, there is a zone of weak mineralization, of 50 foot width and about 0.3% Cu, on both sides. Section 17,700 N shows only 6 feet of weak mineralization with 0.20% Cu. in the sludge.

Structurally, the holes do not furnish much information, due to the fact that there are no horizon markers to help interpret the structure. In none of these holes is the hanging wall amphibolite intersected, but the footwall amphibolite, the West limb of the syncline, was cut at 17,200 N and 17,700 N sections at a horizon we believe to be close to the bottom of the syncline.

The electromagnetic survey made during the Summer of 1952 disclosed a promising anomaly which seemed to follow the footwall (or West limb) amphibolite. Since there were geological reasons to believe that this limb is mineralized, the diamond drilling was moved about 200 feet to the West. The drilling was done at four sections - - 16,700 N, 17,200 N, 17,700 N and 18,200 N. A weak mineralization was found in all except the 17,200 N section. At 16,700 N the mineralized zone is about 30 feet wide, but the grade is under the mining limit (about 0.40% Cu). At 17,700 N and 18,200 N the mineralized zone is only 10 - 15 feet wide and the copper content is very low - - 0.1%-0.2%, but the pyrrhotite mineralization is considerably heavier. None of the holes in the West limb of the syncline cut ore of minable grade. However, the underground workings on this limb show that the mineralized zone is only about 50 feet high and flat-lying, pinched out frequently by drag folding both up the dip and along the strike. This type of shoot is a very small target for the diamond drilling and can be missed very easily.

The estimated tonnages of minable ore gained by the present diamond drilling is as follows:

	Length	Height	Width	Tons	Cu
16,400N - 16,800N	400	50	30	60,000	2.6%
16,800N - 17,200N	400	50	15	30,000	2.3%
		Total		90,000	2.5%

The failure to find ore North of 17,200 N section might be explained by one or more of the following:

In the East Limb

1. The ore terminates south of the 17,700N section
2. The plunge turns steeply to the North with the mineralized zone underneath the bottom level of the present drilling.
3. The displacement along the post-ore fault increases toward the North, and thus the mineralized zone is underneath the bottom level of the present drilling.
4. The syncline opens to the North, and thus the strike turns to the East, so that the drilling at 17,700 N was too far to the West.

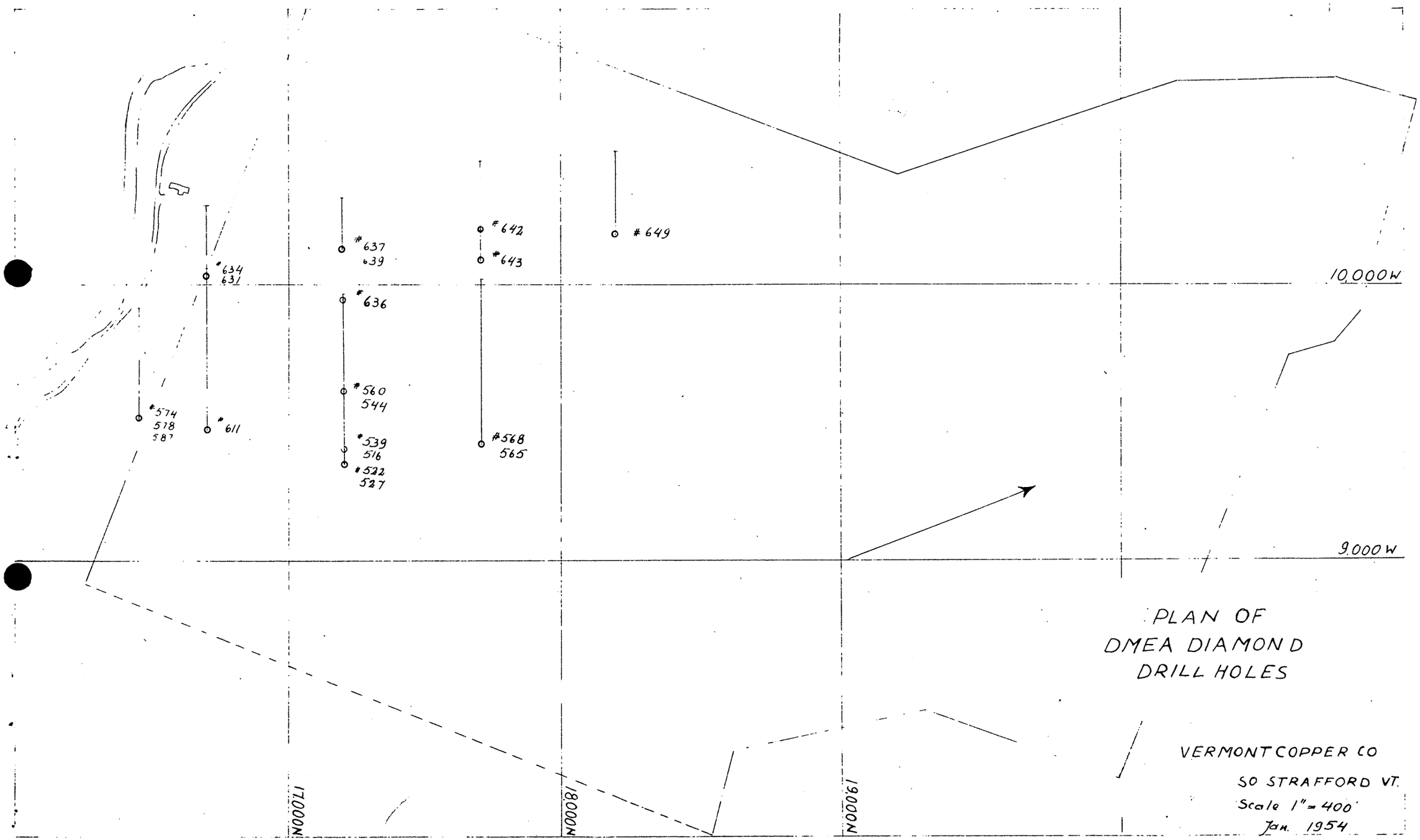
In the West Limb

1. The mineralized zone terminates. This is not likely because signs of mineralization are found on the surfact farther North.
2. The ore occurs as shoots which are so small that they were missed by the diamond drill holes.

The above possibilities are mostly of geological nature and can be solved by additional knowledge of the structure, which can be obtained only from the underground workings. Therefore, it was suggested that further diamond drilling should be discontinued until the underground workings have advanced far enough to give the additional information which is needed for more accurate structural interpretations.

Aimo K. Mikkola

Aimo K. Mikkola
Geologist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PLAN OF
DMEA DIAMOND
DRILL HOLES
VERMONT COPPER CO
SO STRAFFORD VT.
Scale 1" = 400'
Jan. 1954
17000N
18000N
19000N

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

COPY

DOCKET COPY

February 26, 1954

Memorandum

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

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket No. DMEA-1526X - (Copper)
Vermont Copper Co., Inc.
Contract No. Idm-E94

Transmitted herewith are:

Original and 3 copies - Operator's Final Report

Original and 3 copies - Field Team's Final Report

Original and 2 copies - Field Team's Recommendation on Terminating the Contract.

/s/ W. T. Millar

Enclosures

WTM:rwa

copies for Mr. Selfridge
FRKantner, Fin. Off., Reg. 8
DMEA Files

Reviewed by
DMEA OPERATING COMMITTEE
3-3-54
(date)

Team Final

FINAL REPORT ON TERMINATED CONTRACT

DMEA Docket No. 1526X - (Copper)

Contract No. Idm-E94

Vermont Copper Company, Inc.
South Strafford, Orange County, Vermont

by

Defense Minerals Exploration Administration
Field Team, Region VIII

February 25, 1954

Reviewed by
DMEA OPERATING COMMITTEE
3-3-54
(date)

FINAL REPORT ON TERMINATED CONTRACT

by

H. L. Burmeister and Glenn W. Stewart 1/

DMEA Docket No. 1526X - (Copper)
Vermont Copper Company, Inc.
South Strafford, Orange County, Vermont
Contract No. Idm-E94

Summary

The object of this contract was to explore by diamond drilling, the possible northward extension of copper mineralization in the presently mined Elizabeth vein.

The area covered by this exploration is company-owned and extends approximately 4,100 feet on the strike of the Elizabeth vein, between coordinates 16,400 N. and 20,500 N. established by the company's survey.

This contract was authorized for 14,400 feet of diamond core drilling in 25 holes to be drilled from the surface. Drilling was scheduled to commence on August 1, 1951 and to be completed within two years. Of the permissible drilling, 20 holes were completed, 12 of which were on the Elizabeth vein and 8 were drilled on an anomaly which was authorized by an amendment to the contract. A total of 9,711 feet of the authorized footage was completed. Exploratory work under this contract was discontinued by agreement because it was considered that sufficient ore had been indicated to justify development. Ore reserves indicated by results from this exploration are estimated to contain 88,800 short tons of 2.5 percent copper.

The total cost of this project is $34,832.51. The Government's share on a basis of 50 percent participation is $17,416.26.

1/ H. L. Burmeister, Mining Engineer, Bureau of Mines
Glenn W. Stewart, Geologist, Geological Survey

Conclusions

The continuation of the No. 1 or Elizabeth vein along the strike was proven by core drilling sections on coordinates 16,450 N., 16,700 N. and 17,200 N. (Fig. 6)

Drilling on the anomaly which was indicated by a geophysical survey did not prove mineralization of consequence.

It is estimated from the results obtained by core drilling under this contract that the known reserves of this deposit have been increased by 88,800 tons of mineralized material containing an average of 2.5 percent copper.

The Field Team considers that further exploration on this deposit by diamond core drilling from surface drill sites is not warranted and that normal development work by the company is justified.

Recommendations

Production from this deposit is considered economically feasible. The Field Team recommends that a Certificate of Discovery or Development be issued, subject to royalty payments from production.

Detailed Discussions

Introduction: The Elizabeth, Ely, Eureka and Union mines, properties of the Vermont Copper Company, Inc., occur in a northerly-trending mineralized belt about 20 miles long and 5 miles in maximum width in the eastern part of Orange County, Vermont. The mining district is in a hilly region of the Connecticut River Valley; 7 to 10 miles west of and roughly parallel to the Connecticut River. The active Elizabeth mine, the most southerly of the group, lies in the southern part of Strafford Township.

Regional Geology: The Orange County copper district lies west of a zone of thrust faults that closely parallel the Connecticut River. It is slightly east and north of a series of structural domes in southeastern Vermont that parallel the eastern edge of the Connecticut River Valley.

The Elizabeth mine is located on the east flank of the complexly folded and westwardly overturned Strafford anticline, which is distinctly outlined by the Standing Pond amphibolite, a member of the Waits River formation of early Paleozoic age. East of, and stratigraphically above the Waits River formation, is the tightly folded Gile Mountain formation that contains the ore zone at the Elizabeth mine. The Meetinghouse slate is above the Gile Mountain formation. In this region the contact between the above sequence and the adjacent Orfordville formation is interpreted as a fault contact (the Monroe thrust fault) by Hadley and Doll, but further south evidence for a fault contact is lacking (Thompson, p. 21). About one mile east of the Monroe thrust fault the Orfordville formation is broken by the Ammonoosuc thrust fault, which roughly parallels the Monroe fault and the Connecticut River.

A small body of granite crops out about 8 miles northwest of the Elizabeth mine on Brocklebank Hill in the towns of Chelsea and Turnbridge. Basic dikes and sills are common and are distributed irregularly in this region; those measured range from 3-1/2 feet to 30 feet thick.

Geology at the Elizabeth Mine: Most of this information is from notes taken at a conference with Dr. Aimo Mikkola, chief geologist of the Vermont Copper Company and Mr. Richard Dwelley, assistant geologist. Any misinterpretations of the data available and errors in the calculation of the ore reserves are solely the responsibility of the Field Team. A detailed description of the mine will appear in a forthcoming issue of Economic Geology under the authorship of H. McKinstry and A. Mikkola.

Most of the workings of the Elizabeth mine lie within a tightly folded, overturned syncline (fig. 1) in the Gile Mountain formation, which consists chiefly of a garnet-biotite schist and continuous beds of amphibolite and quartzite. In the south workings and open pit the syncline is distinctly outlined by an amphibolite bed. The west limb of this syncline (the footwall amphibolite) can be traced northward from the open pit beyond the area drilled under the DMEA contract. The footwall amphibolite is also continuous underground. The east limb of the syncline (hanging wall amphibolite) is also exposed in the open pit and can be followed underground to about the 14,000 N. coordinate (figs. 1 and 3). In this distance the height of the east limb decreases as the anticline plunges gently northward (compare figs. 1 and 2).

The ore zone, contained within the syncline as far north as the 14,000 N. coordinate, continues along the same general strike north of this point (fig. 3), but follows the axial plane shear zone of the anticline formed by folding of the east limb of the syncline (the hanging wall amphibolite). How far the ore zone follows this structural control to the north cannot be determined until the detailed geology of the underground workings is completely studied.

Although the ore zone appears to be directly related to particular structures such as the axial plane shearing, it is basically controlled by replacement of a favorable stratigraphic horizon. Where the ore zone leaves the syncline to follow the axial plane shearing, it decreases from more than 100 feet in height to about 60 or 80 feet. Strike-slip faults are encountered frequently in the ore zone, but displacements are commonly insignificant.

The ore zone plunges 15° to 20° northward in most of the workings, but it flattens north of the 14,000 N. coordinate. Between coordinates 15,800 N. and 16,450 N. the ore zone rises (fig. 4) and then returns nearly to its former

level. The change in the level of the ore zone may be due to a reversal of plunge, or it might be related to post-ore faulting (fig. 2). The plunge of the ore zone outlined by the diamond drilling is not known accurately, but it probably plunges gently northward.

The footwall ore zone was diamond drilled at the north end after it was recognized by an electromagnetic survey. Reserves were not calculated because this zone appears to be too low grade to mine for copper.

Description of Work Completed

Work under this contract started on August 20, 1951 and was terminated by agreement in December 1953, after being amended to authorize drilling on an anomaly located by geophysical surveying, and to extend the expiration date of the contract from 2 years to 2 years and 6 months from the date of the contract.

The area covered under this contract lies along the strike of the Elizabeth vein between coordinates 16,400 N. and 20,500 N. as indicated on Figure 6.

Twenty AX size holes were diamond core drilled by subcontract for an aggregate of 9,711 feet. The sub-contract price was $2.85 per foot, exclusive of drilling overburden, casing, cementing, road work and technical services. The actual overall cost was $3.586 per foot. Inspection of work progress was made monthly by Government engineers and the core was examined by a Government geologist.

A total of 12 holes were drilled on the extension of the Elizabeth vein and 8 holes were drilled on the anomaly located by a geophysical survey.

Exploration on the Elizabeth vein: The company had previously diamond drilled a section of 4 holes on coordinate 16,700 N., see Figure 6, all of which intercepted the Elizabeth vein. Three of these holes penetrated only

meager copper mineralization while the fourth, No. 476, intercepted 8.2 feet of 4.44 percent copper ore at the 500-foot elevation. Hole No. 611, drilled under this contract and on the same coordinate, intersected the vein at a point 20 feet above the intercept by hole No. 476. The core from hole No. 611 assayed 2.67 percent copper over a width of 37.8 feet. A 22-foot section of this 37.8-foot width assayed 3.87 percent copper.

Holes Nos. 574, 578 and 587 were drilled on coordinate 16,450 N. Hole No. 578 intercepted a normal width of 25.2 feet of mineralization which assayed 3.32 percent copper. The other two holes indicated submarginal mineralization.

A section of 6 holes, Nos. 516, 522, 527, 539, 544 and 560, was drilled on coordinate 17,200 N. Drill hole No. 516 intersected 5.2 feet of vein material which assayed 2.05 percent copper. Hole No. 522 was abandoned due to excessive deflection and the remainder of the holes intersected mineralization which assayed 0.5 percent copper or less.

Holes Nos. 565 and 568 were drilled on coordinate 17,700 N. and intercepted negligible copper mineralization.

Anomaly in footwall of Elizabeth vein: During the summer of 1952 a geophysical survey was made in this area by the company for their account which resulted in outlining a weak anomaly in the footwall of the Elizabeth vein. Under a contract amendment, 8 holes were diamond drilled from the surface on this anomaly to determine the mineralization causing the anomaly. One of the holes was started and abandoned at 38 feet. The other seven holes intercepted very weak copper mineralization about 250 feet in the footwall of the Elizabeth vein. Explorations by the company from the underground workings are reported by the Operator to be favorable and might substantially increase the ore reserves for this operation.

All assay results included in this report were supplied by the Operator.

Reserves

Calculations of ore reserves based upon data made available by the diamond drilling cannot be made with any degree of accuracy. Three areas were outlined at the intersections of the ore in drill holes on the 16,450 N., 16,700 N. and 17,200 N. coordinates (fig. 5). These areas were measured by a planimeter and each length was taken as one-half the distance between adjacent cross-sections along the lines of drill holes. The southern limit for the reserves in the ground covered by contract Idm-E94 was assumed to be at the 16,400 N. coordinate.

Area of assumed ore zone (fig. 5)

Coordinate 16,450 N.	1200 square feet -- Area 1
Coordinate 16,700 N.	1392 square feet -- Area 2
Coordinate 17,200 N.	448 square feet -- Area 3

Area of assumed ore zone multiplied by one-half distance between adjacent section.

1200 sq. feet x 175 feet	210,000 cubic feet
1392 sq. feet x 375 feet	522,000 cubic feet
448 sq. feet x 350 feet	156,800 cubic feet
Total	888,800 cubic feet

Ten cubic feet equals one ton of ore, hence 888,800 cubic feet equals 88,800 tons of inferred ore.

The Vermont Copper Company has calculated from assay data that the ore located by diamond drilling contains an average of 2.5 % copper, therefore, 2222 tons of copper.

Assay data taken from the diamond drill holes supplied by the Vermont Copper Company are given in Table 1.

Expenditures

Total approved	$51,382.00
Total cost of project (audit)	34,832.51
Government's share of cost (audit)	17,416.28
Government's share unexpended	8,274.75
Value of production during operations	None
Government's royalty	None

Efficiency of Operations

The efficiency of operations was satisfactory. Delays caused by severe winter weather conditions as well as those occasioned by awaiting results of company underground development were justified.

Company officials cooperated in every way with Government representatives.

Equipment purchased for project

No equipment was purchased from Government funds allotted this contract.

W. T. Millar

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

for John B. Hanley

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

APPENDIX I

Table 1

Assay Data

Cross-section 16,450 N. D.D.H. No. 578

Footage location in D.D.H.	Assays
421.5 -- 424.0	2.5 feet at 2.16% copper
426.0 -- 433.0	7.0 feet at 0.19% copper
433.0 -- 439.3	6.3 feet at 3.26% copper
439.3 -- 445.4	6.1 feet at 4.54% copper
445.4 -- 451.5	6.1 feet at 2.87% copper
451.5 -- 458.2	6.7 feet at 2.70% copper
470.0 -- 473.3	3.3 feet at 0.97% copper
473.3 -- 482.5	9.2 feet at 1.16% copper

D.D.H. No. 574

389.5 -- 392.5	3.0 feet at 0.65% copper
420.0 -- 429.0	9.0 feet at 0.90% copper

Cross-section 16,700 N. D.D.H. No. 611

492.0 -- 529.8	37.8 feet at 2.26% copper (Only upper 18 feet of this section was used in calculating reserves)

D.D.H. No. 476

458.0 -- 467.5	9.5 feet at 4.44% copper (This hole was not drilled under DMEA contract, but was used in calculating reserves)

Cross-section 17,200 N. D.D.H. No. 539

510.0 -- 556.0	46.2 feet at 0.32% copper
556.0 -- 560.4	4.6 feet at 1.22% copper (This is the only footage used in calculating reserves)
560.4 -- 621.8	61.4 feet at 0.38% copper

D.D.H. No. 516

568.0 -- 573.2	5.2 feet at 2.05% copper

Bibliography

Doll, C. G., 1944, A preliminary report on the geology of the Strafford quadrangle, Vermont: Vermont State Geologist 24th Rept., p. 14-28.

Hadley, J. B., 1950, Geology of the Bradford-Thetford area, Orange County, Vermont: Vermont Geol. Survey Bull. 1, p. 1-35.

Lutjen, G. P., and Kearney, J. H., 1953, New life for Vermont's 160-year old copper mine: Eng. Min. Jour., v. 154, no. 10, p. 72-75.

McKinstry, H. E., 1951, Structure and copper mineralization at the Elizabeth mine, Vermont: abstract Geol. Soc. Amer. Bull., v. 62, p. 1463.

McKinstry, H. E., and Mikkola, A. K., 1954, The Elizabeth Copper Mine, Vermont: Econ. Geol., Jan-Feb. issue, v. 49, no. 1, p. 1-29.

Mikkola, A. K., 1952, Mineralization and rock alteration in the Elizabeth copper deposit: abstract Geol. Soc. Amer. Bull., v. 63, p. 1279.

Thompson, J. B., Jr., 1952, Southern Vermont: Guidebook for field trips in New England, Geol. Soc. Amer., p. 14-21.

White, W. S., and Eric, J. H., 1943, Preliminary report on the geology of the Orange County Copper District, Vermont: U. S. Geol. Survey unpublished report: open file at Office of State Geologist, Burlington, Vermont.

White, W. S., 1943, Geology of the Elizabeth mine, Vermont: U. S. Geol. Survey unpublished report: open file at Office of State Geologist, Burlington, Vermont.

White, W. S., and Jahns, R. H., 1950, Structure of central and east-central Vermont: Jour. Geol., v. 58, p. 179-220.

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

FEB 26 1954

February 18, 1954

Memorandum

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

From: DMEA Field Team, Region VIII

Subject: Termination of Contract
Docket No. DMEA-1526X - (Copper)
Vermont Copper Co., Inc.
Orange County, Vermont
Contract No. Idm-E94

In the opinion of the Operator, the results of core drilling under this contract have indicated sufficient ore to justify development of the deposit. A request by the Operator to terminate this contract before completion has been received.

In consideration of the request by the Operator to terminate this contract, the Field Team has reviewed the results obtained from this exploration and the following conclusions have been formed:

1. Indicated reserves based on results of core drilling on the Elizabeth vein, are estimated at 88,000 tons of 2.5 percent copper.

2. Underground explorations conducted by the company indicate that the ore body is continuous from the present mine workings to the area drilled under this contract.

3. Further drilling from the surface will cost from $2,000 to $3,000 per drill hole and is considered excessive for the information to be gained.

4. Development of the area explored by drilling can be conducted advantageously from the present underground workings.

5. Production from this deposit is considered economically feasible.

Recommendation

The Field Team recommends that this contract be terminated by agreement after commencing but before completion, as of October 1, 1953.

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

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

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
FEB 16 1954

February 16, 1954

Mr. George C. Selfridge, Chairman
Operating Committee, Defense Minerals
Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-E94
Vermont Copper Company
Elizabeth Mine
Orange County, Vermont

Dear Mr. Selfridge:

Reference is made to your letter of February 12 regarding the subject contract.

The Operator's request to terminate the contract was received in October, four copies of which were forwarded to the Operating Committee on October 12. Justifications for the termination did not accompany the request. The Operator was advised to submit a report in accordance with Article 14 of the contract. On February 1, 1954 this report was received although the letter of transmittal was dated January 19. In the meantime the Field Team made its final field examination including a review of the drill cores. The Field Team's final report is now being revised for final typing. The Field Team recommends certification of discovery or development.

Both of these reports will be forwarded to you within a few days.

Sincerely,

W. T. Millar

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

Surname
[redacted]CKET COPY 700

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

Ching
Elin
Selfridge
Johnson
Matthews

FEB 12 1954

Mr. W. T. Millar
Executive Officer
DMEA Field Team, Region VIII
College Park, Maryland

Re: Docket No. DMEA-1526 (Copper)
Contract No. Idm-594
Vermont Copper Company
Elizabeth Mine
Orange County, Vermont

Dear Mr. Millar:

Work under the captioned contract was recessed from January 1 to October 1, 1953, by the terms of Amendments Nos. 3 and 4. Since October 1 no work has been done by the Operator on this project and it is our understanding that you have received a letter from him requesting that the contract be terminated by mutual agreement.

To date we have not had your recommendation for a formal termination agreement nor have we received a copy of the Operator's request for termination. If such termination is in the interest of the Government, it is suggested that you forward your recommendation to this office and we will draw up the agreement.

We understand that the Operator and the Field Team are preparing final reports on this project and we may expect to receive such reports very shortly. If a certification of discovery or development is in order, please include the Field Team's recommendation in the final report.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

APPROVED:

J. H. Hedges

Member, Bureau of Mines (JHB)

D. M. Larrabee

Member, Geological Survey (JHB)

MChing/gla
2-11-54
cc to: Adm. Reading File
Operating Committee
Docket
Messrs. C.H.Johnson, Rm. 3621
A.R.Kinkel, Jr., Rm. B-242A, GSA
Code 700
Mr. Ching
DMEA Field Team, Region VIII

R.C.S.
2-12-54

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
NOV 23 1953

November 20, 1953

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Subject: Docket DMEA-1526X (Copper)
Contract Idm-E94

Dear Mr. Cowley:

Reference is made to your letter of October 10, 1953, requesting that the subject contract be terminated.

In accordance with Article 14 of the contract, the Operator is required to submit his final report for action by the Government in considering termination of the contract after commencing but before completion. The Field Team is preparing its report and receipt of the Operator's report as soon as possible will expedite this matter.

Very truly yours,

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

WTM:rwa

copies to ✓Mr. Selfridge, Chrm., Oper. Comm.
Mr. QuentinDSingewald, USGS
DMEA Files 2

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

800

NOV 6 1953

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Dear Mr. Cowley:

Reference is made to our letter of October 27, 1953, advising you that an auditor representative would visit your office on or about November 16, 1953, for the purpose of auditing the records pertaining to Exploration Project Contract Idm-T 94, DMA-1526.

It has been necessary to revise our audit schedule. Under this revised audit schedule Mr. B. J. Brekhus, auditor representative of this Division, will visit your office on or about November 30, 1953, rather than November 16, 1953 as previously indicated.

It is hoped the timing of this visit will be satisfactory with you. If it is not, please advise and suggest an alternative date.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/wb
~~October 27, 1953~~
11-6-53

Copy to: Docket
Admr. Reading File
Mr. Millar, Region VIII
Mr. Ellis
Mr. Chambers

10/29/53

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

OCT 27 1953

Mr. John F. Cowley, President
Vermont Copper Company
South Strafford, Vermont

Dear Mr. Cowley:

Under the terms of Exploration Project Contract Idm-E94, Docket No. 1526, it is provided that you "keep suitable records and accounts of operations, which the Government may inspect and audit at any time."

It is anticipated that Mr. B. J. Brekhus, an auditor representative of this Division, will visit your office on or about November 16, 1953, for the purpose of certifying the validity and propriety of the Government's payments under this contract.

If for any reason the timing of this visit is inappropriate, please advise and suggest a convenient date.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/wb
October 27, 1953

Copy to: Docket
Admr. Reading File
Mr. Millar, Region VIII
Mr. Ellis
Mr. Chambers

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

Defense Minerals Administration
RECEIVED
OCT 12 1953

October 12, 1953

Memorandum

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

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket DMEA-1526X - (Copper)
Vermont Copper Co., Inc.
South Strafford, Vermont
Contract No. Idm-E94

Enclosed are four copies of a letter, dated October 10, 1953, from Mr. John F. Cowley, President, Vermont Copper Co., Inc., giving the latest information regarding exploratory work on Contract No. Idm-E94.

W. T. Millar

W. T. Millar

Enclosures

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P
Y

RECEIVED

OCT 12 1953

VERMONT COPPER COMPANY, INC.
South Strafford
Vermont

October 10, 1953

United States Department of Interior
Defense Minerals Exploration Administration
College Park
Maryland

Subject: Docket DMEA-1526X (Copper)
Contract No. Idm-E94
Attention: Mr. W. T. Millar

Gentlemen:

This will acknowledge your letter dated October 7, 1953 in connection with resumption of work under the subject contract which was suspended, by Amendment No. 4, until October 1, 1953.

In view of the fact that our underground development on the 975 level is steadily advancing toward the area covered by the DMEA Contract, and that further exploration in that area will be much more economical from the 975 level than from the surface, we believe it to be in the best interests of DMEA and ourselves to terminate the surface diamond drill contract at this time.

We will notify you when we reach the boundary of the area covered by the contract, and will make the necessary arrangements for royalty payments if ore is extracted.

Very truly yours,

/s/ John F. Cowley
John F. Cowley
President

JFC:sm

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
AUG 26 1953

AB

August 25, 1953

DMEA-1526

Memorandum

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

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Amendment No. 4, Docket E-94 DMEA - (Copper)
Vermont Copper Company, Inc. South Strafford, Vermont
Contract 1526X

Enclosed are Government, Division and Docket copies of Amendment No. 4 to subject contract, which have been executed by the Government and the Company.

H. L. Burmeister

H. L. Burmeister, Acting
for W. T. Millar

Enclosures - 3

cae
8.26

700 FILE COPY
SURNAME:

Ellis
Martin
Martin
Selfridge

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

AUG 17 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-1526 (Copper)
Contract No. Idm-E94
Vermont Copper Company, Inc.
South Strafford, Vermont

Dear Mr. Millar:

Reference is made to your memorandum dated August 4, 1953, to Mr. Wittendorf, with which you enclosed six copies of proposed Amendment No. 4 to the above contract. This amendment, prepared in final form by our Legal Division and signed by the Administrator, is returned herewith for you to obtain the signature of the operator.

When all copies of the amendment have been signed, please make the usual distribution.

Sincerely yours,

W. S. Martin

(S)

ACTING Chairman, Operating Committee

Enclosures 6

EWEllis/gla
8-12-53
cc to: Adm.Reading File
Operating Committee
Docket
Messrs. C.H.Johnson, Rm. 3621
A.R.Kinkel, Jr., Rm.B-242A GSA
Ellis
Legal Division
DMEA Region VIII

Concur:

J. H. Hedges

(S)

Member, Bureau of Mines

A. R. Kinkel, Jr.

(S)

Member, Geological Survey

HHR 8-17-53

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
AUG 5 1953

August 4, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket No. DMEA-1526X - (Copper)
Vermont Copper Company, Inc.
South Strafford, Vermont
Contract No. Idm-E94

Enclosed is amendment to the subject contract prepared for your consideration. A copy of the operator's request to recess operations under this contract until October 1 accompanied the May progress report.

Exploration under this contract was recessed during severe winter months from January 1 to April 30, 1953, by Amendment No. 3, which extended the completion date four months to correspond with the period during which operations were suspended. In the meantime, the operator conducted exploratory work and development from underground workings for the company's account.

It is possible that the normal development now in progress may furnish additional data which will be of value in planning further exploratory work under this contract. On the other hand, the exploratory work to date has indicated an estimated 86,000 tons of 4 percent copper ore. Drilling on this deposit is considered deep for a moderately small mining operation and the cost of exploration has reached approximately 40¢ per ton of ore indicated. My personal opinion is, that, sufficient ore has been indicated by core drilling under this contract to justify certification and that further drilling in the area covered by the contract is not warranted. The new development now being conducted by the company might require additional exploration and if the contract is kept active it could be amended to permit exploration in an area not covered by the present contract.

W. T. Millar

W. T. Millar

proposed Amend.

Enclosures 6

cc 8-5

DMEA 1526X, etc.

Amendment No. 4 ~~to Contract Idm-E94~~
~~Docket No. DMEA-1526X - (Copper)~~
~~Vermont Copper Company, Inc.~~
~~South Strafford, Vermont~~

Disagreed this — day of — 1953, between the Un— St— of America, acting through the Defense M— Ex— Admn, and Vermont Copper Company, Inc., ~~that~~: WHEREAS;

under Contract No. Idm-E94 (Docket No. DMEA 1526), as amended;

~~The~~ underground exploration and development work being done for the company's own account, on both the 975-foot and 925-foot levels of the Elizabeth mine, is constantly adding to the data necessary to ~~intelligently~~ properly continue the ~~subject DMEA contract~~ PLAN drilling. The work consists of advancing the ~~above~~ levels as well as diamond drilling the footwall of these levels. Five of these drill holes have intercepted what is believed to be the anomaly drilled under DMEA contract, and This vein is about 150 feet in the footwall of the Elizabeth vein.

WHEREAS;

By October 1, 1953, both the 975-foot and 925-foot levels are expected to have advanced to within 125 feet of the ground covered by ~~this~~ Contract No. Idm-E94, and It is considered that the data so obtained may aid the objective of this contract. and

Now, Therefore,

1. ~~It is mutually agreed between the DMEA Field Team and the Operator that~~ work under Contract Idm-E94 ~~be~~ recessed from April 30, 1953, to not later than October 1, 1953, ~~at which time work under the contract will be resumed~~. The time for completion of the work specified ~~under this contract~~ is ~~to be extended from~~ changed ~~two years and 4 months from the date of this contract~~ to two years and six months from the date of ~~the~~ contract. in Article 3 of the contract, as amended,

latter date

WHEREAS;

No equipment in which the Government has an equity is used on this project; and

Core recovered from drilling completed to date is suitably stored and will be preserved for examination until the project is completed and the final report prepared.

This amendment shall not be construed to ~~authorizing any other change in allowable maximum costs other than those specified, nor shall this amendment be construed as authorizing any~~ increase ~~in~~ the total estimated ~~allowable~~ cost of the project or the aggregate total amount ~~of~~ which the Government ~~participation~~ may be required to contribute.

Recorded —

UNITED STATES OF AMERICA

VERMONT COPPER CO., INC.

By: _____
C. O. Mittendorf, Administrator
Defense Minerals Exploration
Administration

By: _____
John F. Cowley, President

Date: August 4, 1953

DOCKET COPY

College Park, Maryland

June 15, 1953

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Subject: Docket DMEA-1526X - (Copper)
Contract Idm-E94

Dear Mr. Cowley:

The Operator's Monthly Report for May 1953, on the subject contract, has just been received.

It is noted that drilling was not resumed on May 1, 1953, specified as the starting date by Amendment No. 3 to the contract. On my visit to the mine on May 25, it was pointed out that as drilling had not started on May 1, it would be necessary to justify this and to request an amendment extending the starting date beyond that stated in Amendment No. 3. It was understood that this would be done immediately.

Your letter of June 13, transmitting the Monthly Report for May, is in error in that it sites Amendment No. 3 as extending the drilling recess beyond April 30, 1953. If further drilling is anticipated under this contract, it is necessary that this office be furnished at once a request for an amendment extending the recess termination date of April 30, 1953, as specified in Amendment No. 3, to a later date.

The Monthly Report for May is being held in this office pending your action regarding an amendment.

Very truly yours,

H. L. Burmeister, acting for
W. T. Millar, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

HLB:rwa

copies for GeoCSelfridge - (See HLBurmeister's Field Inspection Report of May 25)
FRKantner - " " " " " " " "
JBHanley - USGS- " " " " " " " "
DMEA Files 2

700

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

February 13, 1953

MEMORANDUM

To: Hazel Berry
Operating Committee

From: Grace L. Ault
Rare and Misc. Metals Division

Subject: Docket DMEA-1526
Contract Idm-E94
Amendment No. 3

Mr. Ellis has reviewed Amendment No. 3 dated February 5, 1953, on the above-captioned contract and has approved it.

Grace L. Ault
Grace L. Ault

BDL

Posted 2/15/53

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

February 12, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 12 1953

Memorandum

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

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

Subject: Vermont Copper Co., Inc., So. Strafford, Vermont
Contract Idm-E94, Docket DMA-1526X - (Copper)

Transmitted herewith are the original and two carbons of Amendment No. 3 to Contract Idm-E94, which has been executed by the Vermont Copper Company, Inc.

W. T. Millar

W. T. Millar

Enclosures - 3

cal
2-12-53

RECEIVED
FEB 19 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

FILE COPY
SURNAME:
800

Talbert

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

Vermont copper

NOV 17 1952

Mr. John J. Inman, District Manager
American Zinc, Lead & Smelting Co.
Joplin, Missouri

Dear Mr. Inman:

Enclosed herewith for your information is a copy of the Audit Certificate and Audit Report resulting from Mr. Chambers' recent audit of your records pertaining to DMEA Exploration Project Contract No. Idm-E158, Docket No. 1526.

We wish to take this opportunity to express our appreciation for the courteous cooperation extended to Mr. Chambers during this audit by the officers and employees of your Company.

Sincerely yours,

11-17-52

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration and
Audit Division

Enclosure

EDTalbert/wb
November 17, 1952

Copy to: Docket
Admr. Reading File
Mr. Talbert

October 27, 1952

Memorandum

To: Hazel Berry, Operating Committee, DMEA

From: Grace L. Ault, Rare & Misc. Metals Division

Subject: Amendments to Contract, and Contracts finalized by Region IV

With reference to your memorandum of October 24, 1952, this Division received a signed copy of Contract Idm-E399, DMEA-2378, Salina Mining & Smelting Company, on October 10, which was placed in our contract file. The copy of the field report which was cleared by the Operating Committee on October 20, 1952, was forwarded to Mails & Files and placed in the docket. Both the signed contract and the field report were reviewed and cleared as approved by engineers in this Division. The signed copy of the contract was retained for our Division file.

The following have been reviewed, approved by engineers in this Division, and filed in our contract file:

Signed copy of Contract Idm-D422, DMEA-2573, Glenn Mining Company, Inc., dated October 15, 1952, finalized by Region IV.

Amendment #6, DMEA-β11, Contract Idm-E175, Realty Company, dated September 24, 1952.

Amendment #2, DMA-1526, Vermont Copper Company, dated October 8, 1952.

FILE COPY
SURNAME:

Talbert

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

SEP 29 1952

Mr. John F. Couley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Dear Mr. Couley:

Enclosed herewith for your information is a copy of the Audit Certificate and Audit Report resulting from my recent audit of your records pertaining to DMEA Exploration Project Contract No. Idm-E94, Docket No. 1526.

I wish to take this opportunity to express my appreciation for the courteous co-operation extended to me during this audit by the officers and employees of your Company.

Sincerely yours,

9-29-52

(Signed) E. D. Talbert

E. D. Talbert, Assistant Chief
Contract Administration and
Audit Division

Enclosure

EDTalbert/wb
September 29, 1952

Copy to: Mails & Files
Admr. Reading File
Mr. Mosier
Mr. Talbert

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

September 25, 1952

Memorandum

To: D. N. Anderson, Finance Officer, Region VIII

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Contract Idm-E94, Docket DMEA-1526X
Vermont Copper Co., Inc., Hyde Park, Vermont

Attached are audits and two certificates by E. D. Talbert, Auditor, pertaining to Contract Idm-E94, Docket DMEA-1526X, for the period August 20, 1951 to July 31, 1952. These are to be filed in accordance with Circular 19, Supplement 3, Section 5. It is requested that any adjustments because of suspensions be made on the payment of the next MF-104.

McHenry Mosier

Attachments

McHM:rwa

Copy for DMEA Files 2
JayLChambers ✓

C O P Y

Vermont Copper Company. Inc.
South Strafford
Vermont

September 13, 1952

Mr. McHenry Mosier, Executive Officer
Bureau Survey Field Team
Defense Minerals Exploration Administration
Region VIII
College Park, Maryland

Re: Vermont Copper Co., Inc.
DMA 1526 X

Dear Mr. Mosier:

Attached hereto are five copies of a map showing the area of the land covered by the captioned contract and the original drill stations, together with a tracing of an anomaly shown by electromagnetic survey and three proposed drill stations.

We moved our diamond drill in to station marked - 1A on August 29th and 30th and commenced drilling September 2nd.

Since no advance was made in drilling during the month of August a detailed report is not made at this time.

For your information, the first hole drilled during the first week of September showed some twenty feet of mineralization under the anomaly, the details and log of which will be included in the September report.

I discussed this drilling program with Mr. Eilertson on his recent visit to South Strafford.

Very truly yours,

(S) John F. Cowley
President

JFC:aw
Encl.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
SEP 18 1952

Bd

FILE COPY
SURNAME:

Chambers

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

AUG 28 1952

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Dear Mr. Cowley:

Under the terms of Exploration Project Contract Idn-E94, Docket No. 1526, it is provided that you "keep suitable records and accounts of operations, which the Government may inspect and audit at any time."

It is anticipated that Mr. E. D. Talbert, an auditor representative of this Division, will visit your office on or about September 15, 1952, for the purpose of certifying the validity and propriety of the Government's payments.

If for any reason the timing of this visit is unappropriate, please advise.

Sincerely yours,

(Signed) J. L. Chambers

8/28

Jay L. Chambers, Chief
Contract Administration and
Audit Division

EDTalbert/wb
August 27, 1952

Copy to: Mails & Files
Admr. Reading File
Mr. Mosier
Mr. Talbert

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
AUG 29 1952

August 27, 1952

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Docket DMA-1526X
Contract Idm-E94

Dear Mr. Cowley:

Pursuant to Article 4 of Contract Idm-E94, approval of the contract between the Vermont Copper Co., Inc. and John Tweit for diamond drilling, which was started August 20, 1951, is hereby given by the Government.

Yours very truly,

McHenry Mosier, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

McH:rwa

copy for FEJohnson - 3
JChambers
DIAnderson, Pgh.
DMA Files

SCS 9/16/52

RECEIVED
SEP 4 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

[illegible]

[illegible]

The agreement set forth below is to be retroactive to the start of drilling River Hole #516, started August 30, 1951, and to September 1, 1951, for drilling at the No. 2 Open Cut and Underground.

[illegible] DRILLING AT [illegible]

A. COSTS TO BE PAID OR FURNISHED BY TWEIT:

1) Furnish all drilling equipment, materials, and supplies, including drills, rods, bits, power, gas, grease and oil, and miscellaneous tools. Present casings, lumber and other setting-up materials, cement and other materials for grouting, and certain other materials, as specified hereafter to be paid or furnished by the Company.

2) Pay all labor costs, including bonuses, overtime payments on bonuses, pro-rata share of vacations, payroll taxes, Compensation and Group Insurance, except those labor costs listed below as to be paid by the Company.

3) When casing of holes is required, the Company will pay Tweit 50¢ per foot as allowance for bits and shells to cover drilling and reaming out for casings in rock, and will also pay the labor costs on a basis to be agreed upon between Tweit and the Company for each individual casing job, depending on existing conditions. (All casings and costs of casing in overburden to be paid by the Company, as specified below.)

4) Tweit will furnish all transportation for his work and materials, and the Company will furnish transportation required in connection with the work it agrees to perform.

5) Pay all costs of supplying water to drill sites up to 1,500 feet from source of water supply, including labor costs and pipe.

6) Pay all telephone calls, telegrams, etc., made through the Company incidental to his part of the drilling work.

B. COSTS TO BE PAID OR FURNISHED BY [illegible] COPPER COMPANY, LTD.:

1) Provide suitable access roads to drill sites.

2) Pay costs of moving and setting-up including labor and lumber and other materials necessary for drill set-ups, and such moving and setting-up is to be made whenever and in such manner as directed by the Company.

3) Pay labor costs and furnish materials, including casings, for casing in overburden; also, furnish casings for casing in rock, and the Company will determine and specify the casings to be left in holes or salvaged. Labor costs for casing in rock to be paid by the Company as specified in A(3) above.

4) Pay labor costs and furnish materials for cementing and cleaning holes when the Company agrees that this is necessary or advisable. The pump for cementing will be furnished by Tweit, and the Company will pay for pump repairs needed at the end of each cementing job as agreed to between Tweit and the Company, based on the Company's inspection of the pumping equipment at the start and finish of each job.

5) Pay the cost of materials and supplies necessary for heating water to prevent freezing, subject to arrangement by Tveit with the Company as to need, methods employed, and other details.

6) Pay labor costs and furnish pipe to bring water from the source of supply up to 1,000 feet from drill sites.

7) The Company will furnish the transportation required in connection with the work which the Company agrees to perform.

8) The Company will carry the Public Liability and Property Damage Insurance required to cover its liability in connection with diamond drilling operations. It is suggested that Tveit should investigate to determine what Liability Insurance is necessary to protect his own interests, and to arrange for such Liability and Property Damage coverage.

C. CONTRACT PRICE FOR SURFACE DRILLING AT RIVER

Effective with River Hole #516, started August 20, 1951, the Company will pay Tveit the Contract Price of $2.85 per Foot for Surface Diamond Drilling at the River, which is to cover all of the costs to be paid or furnished by Tveit, as set forth above. And an additional 50¢ per foot allowance for bits and shells for drilling and reaming out for casings, as specified in (3) above.

D. CONTRACT PRICE FOR SURFACE DRILLING AT OPEN CUT

Effective September 1, 1951, the Company will pay Tveit the Contract Price of $2.00 per foot for Surface Diamond Drilling at the Number 2 Open Cut and the "Old South Mine," which is to cover all costs to be paid or furnished by Tveit, as set forth below.

E. CONTRACT PRICE FOR UNDERGROUND DRILLING

Effective September 1, 1951, the Company will pay Tveit the Contract Price of $7.00 per foot for Underground Diamond Drilling, up to 300 feet, which is to cover all costs to be paid or furnished by Tveit, as set forth below. Drilling over 300 feet to be subject to agreement between Tveit and the Company.

F. SURFACE DRILLING AT SOUTH MINE AND OPEN CUT #2

Tveit will furnish and/or pay for all drilling equipment, materials and will pay all costs of moving and setting up.

Tveit will pay all labor costs for drilling, moving and setting-up as specified under A2 of Surface Drilling agreement.

The Company will provide air and water and will furnish timber for set-ups. When water must be hauled to the drill site by truck, the Company will furnish the truck and tank, and will either haul the water or will allow 4 man-hours Company time per drill shift for hauling water.

C. EQUIPMENT DRILLING

Twait will furnish and/or pay for all drilling equipment, materials and supplies, and will pay all costs of moving and setting up, except as specified below.

The costs of moving and setting up in stopes and raises are to be arranged between Twait and the Company at the time of such moving and setting up, due to the fact that conditions in stopes and raises are too uncertain and varying to make advance contract agreement practicable.

Twait will pay all labor costs for drilling, moving and setting up as specified under A2 of Surface Drilling agreement, except as specified in the paragraph next above.

The Company will supply air and water to within 50 feet of the drill set-up and will furnish air and water hoses for underground drilling, which hoses are not to be taken from underground.

The Company will pay the costs of timbering necessary for set-ups and safety, and Twait's men will be subject to all of the Company's safety rules and subject to its safety supervision.

E. GENERAL AGREEMENT

1) Men working on Twait's diamond drill projects will be carried on the Company payroll as employees, and will be paid wages at the scheduled hourly rates, the same as the Company's regular employees. Contract bonuses for Twait's men will be calculated semi-monthly, the same as underground mine contracts. Twait is to set the contract rates for his men as a basis for calculation and payment of such bonuses. All labor chargeable to Twait on his drilling projects under this agreement is to be charged to the respective projects as "Contract Time," and all time worked by Twait's men on the work which the Company agrees to perform is to be considered as "Company Time" and charged to Company costs.

2) "Contract Time" charged against Twait's projects is to be charged at the average hourly rate for each pay week as heretofore. Overtime work over 8 hours per day and/or 48 hours per week on contract work is to be at Twait's direction. No overtime work over 8 and 48 hours, respectively, is to be worked on "Company Work" unless authorized by the Company or in cases of emergency.

3) The Company will render Twait a monthly statement before the fifteenth day of the following month showing the total amount due Twait from the Company for contract drilling performed during the month and the deductions made from this total for Company payments on Twait's behalf for the following:

A) Wages paid to Twait's men chargeable to "Contract Work" in accordance with this agreement.

B) Contract Bonuses, including "overtime premium" on such bonuses, paid to Twait's men.

(Wages paid plus Contract Bonuses before "overtime premium" will equal contract earnings at footage rates set by Twait)

C) Amount due the Company for Payroll Taxes, Compensation and Group Insurance and Prorated vacations, on Twait's labor under this agreement.

4) A separate monthly statement will be rendered to Twait showing all charges to his account for equipment, materials and supplies purchased by Twait from or through the Company during the month, and charges for Company services, etc.

5) Payroll Taxes (Vermont Unemployment, Federal Employer's Excise, Federal Old Age Benefit), Compensation and Group Insurance will all be paid by the Company as heretofore, and the Company will withhold employees' Income and Social Security taxes, the same as with its regular employees. The pro-rated portion of these items and vacations will be charged to Twait on his contract labor on the following basis:

a)	Vermont Unemployment Tax	1.0%
b)	Federal Employer's Excise Tax	.3%
c)	Old Age Benefit Tax (Employer's Portion)	1.5%
	Total Payroll Taxes	2.8%
d)	Compensation Insurance	5.2%
	Total P/R Taxes & Compensation Ins.	8.0%

(This total is applicable on the total of Twait's labor, including bonuses and overtime premium on bonuses.)

e) Prorated Vacation Payments - 25¢ per shift on men eligible for vacations.

f) Prorated Group Insurance - 30¢ per shift on men covered by Group Insurance.

All of the above rates are based on the rates now paid by the Company and are subject to adjustment whenever there are changes in the cost to the Company.

6) A regular Company employee who has been transferred to Twait's Diamond Drill Crew by mutual agreement between Twait, the Company, and the employee, will be taken back as a Company employee without loss of his seniority standing with the Company. This agreement does not apply with regard to men when Twait has employed and who were not regular company employees at the time Twait hired them.

7) Working time lost by Twait's men due to interruptions in drilling due to breakdowns of Twait's equipment, running out of bits, etc., shall be charged as "Contract Time." If these or other interruptions extend for one full day or more, the Company will cooperate with Twait by employing "transferred employees" on other Company work when it is practical and possible to do so, but the Company does not guarantee to do this in every case.

8) This agreement shall remain in force until terminated by either party, upon reasonable notice, and the terms of the agreement are subject to review for revision when requested by either party.

9) Neither Twait nor his drillers will give any information regarding the results of drilling to anyone except authorized officials of the Vermont Copper Co., Inc.

Agreement signed

Vermont Copper Co., Inc. John Twait

FILE COPY
SURNAME: 500

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

August 22, 1952

Memorandum

To: Acting Administrator

From: Acting Chief, Base Metals Division

Subject: Docket DMA-1526X, Contract Idm-E94, Vermont Copper Co., Inc.

The diamond drilling proposed in this contract was estimated to cost a total of $51,382.00.

Estimated Cost of Project		$51,382.00
Expended to May 31, 1952	$23,691.77	
Estimated expenditure during June, July and August	6,000.00	
Total Estimated Cost to Date		29,691.77
Estimated Unexpended Surplus		$21,690.23

A Certificate of Discovery should be issued in accordance with Article 15 of the contract which states; "If upon the completion of the project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government within six months thereafter, shall so certify to the Operator."

In accordance with the contract, I do not believe a Certificate of Discovery should be issued until the Operator has official notice that the contract is terminated.

The contract could be amended to provide for drilling in an adjacent area if the Operator so desires and the proposed drilling is approved by the Field Team and this office.

H. F. Keller
Acting Chief

HFKeller-mb
Copy to: Docket
Adm. R. File
Op. Comm
Mr. Keller c(2)
Mr. Bishop Mr. McKnight

8/21/52 gh SD

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

August 21, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region VIII

Subject: Docket DMA 1526-X, Contract Idm-E94 - Vermont Copper Co. Inc., South Strafford, Vermont (Copper)

In reference to the above contract with the Vermont Copper Company, the diamond drilling has been temporarily and possibly indefinitely discontinued. In view of the results to date it is the recommendation of the Field Team, including Mr. Ned Nelson, U.S.G.S., that a certificate of discovery or development be issued because of the proving by diamond drilling of the northerly extension of the principal ore zone of the Elizabeth mine as below (see longitudinal section attached):

In section 16,450, hole 578 cut 25.2 feet assaying 3.32% copper; in section 16,700, hole 611 penetrated 37.8% feet containing 2.62% copper; in section 17,200 hole 516 showed 5.2 feet with 2.05% copper. Accordingly any production from this zone, north of section 16,325 (which is midway between section 16,200 developed solely by the Company and 16,450 developed by the Contract) and south of 17,200, will be subject to royalty payments by the Company to the Government.

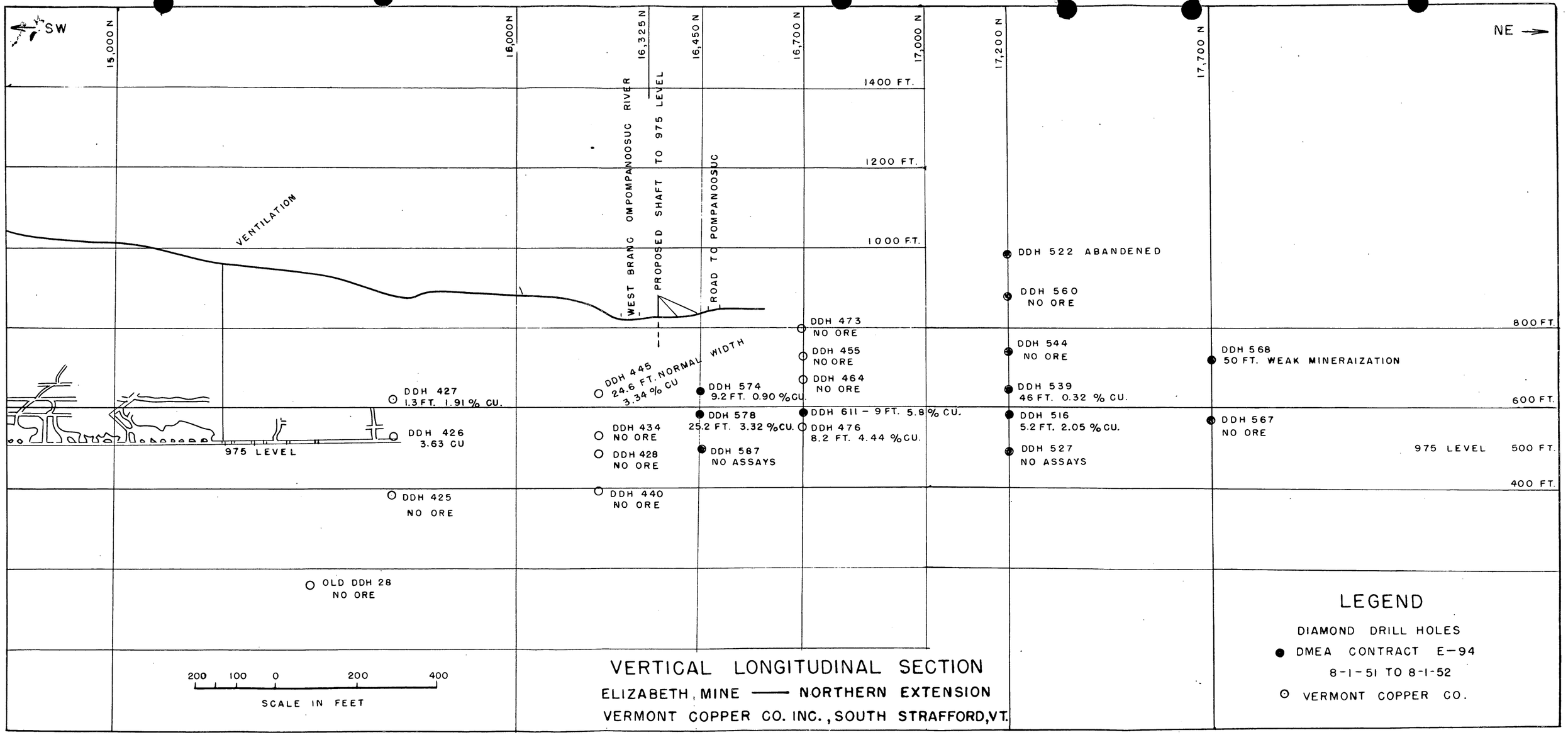
The above recommendation is based on the assumption suggested by Mr. Cowley, President of the Company, that the minimum feet-percent for "commercial" ore is 24. In this formula "feet" represents actual thickness normal to the dip and percent refers to the copper content. For example, 12 feet at 2%, or 8 feet at 3%, would be commercial while 10 feet at 2% or 6 feet at 3% would be sub-commercial.

McHenry Mosier

McHenry Mosier

Enclosure

AUG 21 1952



VERTICAL LONGITUDINAL SECTION

ELIZABETH MINE —— NORTHERN EXTENSION

VERMONT COPPER CO. INC., SOUTH STRAFFORD, VT.

COPY

UNITED STATES

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

College Park, Maryland

May 21, 1952

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Dear Mr. Cowley:

This is to confirm our telephone conversation this morning regarding Contract DMA-94 (Docket No. 1526X). After studying the most recent results of diamond drilling on this contract, the Bureau-Survey Field Tem suggested that an additional hole on section 16,700 should be drilled to provide valuable information by intersecting the orezone about 50 feet below the good copper mineralization cut in hole 476.

It is my understanding that you agreed to drill this proposed hole and that it could probably be started in about one week from today.

Yours very truly,

/s/ McHenry Mosier

McHenry Mosier, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration
Administration, Region VIII

Mr. Ellis

xxxxxxxxxxxxxxx

College Park, Maryland

March 26, 1952

Memorandum

To: Claude Galiher, Auditor, DMEA

From: Executive Officer, DMEA, Region VIII

Subject: Docket No. DMA-1526X.

In response to your telephone request yesterday, regarding the Vermont Copper Company, Inc., Docket No. DMA-1526X, you will find attached a photostatic copy of the diamond drilling agreement between the Vermont Copper Company, Inc. and John Tweit. We do not have the original at College Park.

McHenry Mosier

Attachment

McHM:rwa

copy for Frank E. Johnson, Chrm. Oper. Comm., DMEA
DMEA Files 2

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

February 25, 1952

Mr. McHenry Mosier, Executive Officer
Bureau Survey Field Team
Defense Minerals Exploration Administration
Region VIII
College Park, Maryland

Dear Mr. Mosier:

Re: Docket DMA 1526 X

This will acknowledge your letter dated February 19, 1952 in connection with matters concerning Monthly Progress Reports on Contract 1526 X.

In the Progress Report for January our cross-sections show that drill hole #560 advanced 269 feet and drill hole #565 advanced 588 feet making a total of 857 feet.

The tabulation on the report form shows a total 847 feet. The apparent discrepancy of 10 feet is accounted for by 10 feet listed as casing which occurred in the first ten feet of hole #565 and was paid for under separate rates as provided in our contract with the diamond driller.

The narrative description covering the Report for January is hereby amended to include "Diamond Drill hole #560 was advanced from 193 feet as of the close of drilling on December 31, 1951 to a total of 462 feet on January 9, 1952 for an advance of 269 feet for the month. The period from January 9th to January 15th was used in moving the drilling rig to a new station (Diamond Drill Station #2) and setting up the drill. On January 16th, drilling, reaming and casing the first 10 feet of hole #565 was done and contract drilling commenced, continuing to January 31st. The advance paid for on contract was 578 feet of the total 588 feet drilled. No assays of ore were made during the month."

The narrative for the Progress Report submitted for December drilling is as follows:

"During the month of December Diamond Drill hole #544 was commenced on December 6th after a layoff of drillers since November 2nd and a total of 13 feet of hole was drilled, reamed and cased. This is paid for under separate rate. From 13 feet to 543 feet (530 feet contract advance) drilling was in mostly barren ground with some weak mineralization between + 350 feet and + 470 feet from the collar. No assays were taken however. Hole was completed at 543 feet on December 27th. December 28th, new hole #560 was laid out and drilling commenced December 29th when 15 feet of hole was drilled, reamed and cased and contract drilling started. On December 31st, a depth of 193 feet from collar had been attained."

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

February 25, 1952

You are correct in your assumption that the company labor item of $48.17 is for preparation labor in moving the rig. The item of $80.05 for driller and helper is to be charged to set-up time, drilling, reaming and casing.

We hope that this answers your questions in this matter.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:mz

River Diamond Drilling
Company Labor

January 1952

Classification	Rate	Name	Drill Holes Hrs.	Drill Holes Amt.	Preparation Hrs.	Preparation Amt.	Total
* Drill Helper	1.14	R. Eastman	16	18.24	15	17.10	
Drill Helper	1.26	R. Eastman	11	13.86	4	5.04	
Driller	1.37	V. Clogston	35	47.95	19	26.03	
			62	$80.05	38	$48.17	$128.22

Geologist	H. G. Brown	1 Day @ 16.00	16.00
	A. Mikkola	2 Days @ 16.00	32.00
			48.00
Engineer	R. H. Little	1 Day @ 12.00	12.00
Engineer's Helper	G. Philbrick	1 Day @ 11.00	11.00
			23.00
Supervision	C. Banker	2 Days @ 19.20	38.40
	F. Taft	1 Day @ 22.10	22.10
			60.50

Total Company Labor $259.72

Payroll Taxes

Federal Social Security	1.5%
Federal Excise	.3%
Vermont Unemployment	1.0%
	2.8% of $259.72 - $7.27
Workmen's Compensation Insurance	4.257% of $259.72 - 11.06

* Payroll Raise on R. Eastman effective 1/17/52 - Merit Increase

Breakdown of Labor

Preparation - Labor Against Drill Hole	38 Hrs.			$48.17 (Moving to new site)
(Set up time)	8 Hrs. @	1.14	9.12	
	11 Hrs. @	1.26	13.86	
	27 Hrs. @	1.37	36.99	59.97
(Drilling, Casing & Ream)	8 Hrs. @	1.14	9.12	
(First 10 ft. of Hole #565)	8 Hrs. @	1.37	10.96	20.08
				$80.05

FILE COPY
SURNAME:

F E Johnson

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

OCT 18 1951

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket No. DMA 1526X
Contract Idm -E 94

Dear Mr. Cowley:

We acknowledge receipt of the four copies of progress report, Form MF 104, and one copy of diamond drilling agreement relative to the subject exploration project contract.

The above documents are being forwarded to the Regional Office for checking and certification prior to payment of the Government's participation share of the expenditures.

In the future kindly send the monthly progress reports directly to Mr. McHenry Mosier, Executive Officer, Region VIII, Bureau of Mines, College Park, Maryland. This will expedite processing of your reports as Mr. Mosier is administrator of all exploration contracts in the Northeastern area.

Sincerely yours,

10-19

(signed) FRANK E. JOHNSON ACTING

C. O. Mittendorf, Director (for)
Production Expansion Division

DEMoulds/hmj
Typed: 10-17-51
cc to: Reports and Records
Adm. Reading File
Mr. Mittendorf, Olund
Mr. Moulds
Region VIII (2)
Docket

FILE COPY
SURNAME:

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

Mittendorf 400

AUG 13 1951

U.E.C.

Mr. McHenry Mosier
Executive Officer
DMA Field Team, Region VIII
Bureau of Mines
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMA 1526X
Vermont Copper Company, Inc.

Dear Mr. Mosier:

Herewith enclosed is one signed and approved copy of the subject Exploration Contract. A copy of this contract will be forwarded to the Region Finance Officer by the Washington Finance Section.

Mr. John F. Cowley has been instructed to contact your office when work is started under this contract.

Sincerely yours,

8/13

C. O. Mittendorf (J.H.)

C. O. Mittendorf, Director
Production Expansion Division

Enclosure-1

DEMoulds/bjs
8/9/51
cc to: Adm. Reading File
Reports and Records
Mr. Mittendorf, Mr. Olund
Mr. Moulds
Region VIII
Mr. ~~Bonwar~~ Knight
Mr. ~~Tate~~ Knight
Docket copy
Chron. copy

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

File

August 10, 1951

Mr. C. O. Mittendorf, Director
Production Expansion Division
Defense Minerals Administration
Washington, D. C.

Re: Docket No. DMA 1526X
Exploration Project Contract

Dear Mr. Mittendorf:

This will acknowledge receipt of your letter dated August 1, 1951, together with six copies of the Exploration Project Contract for the drilling program to be conducted north of the Elizabeth Mine, a set of four Progress Report forms MF104 and a copy of an information bulletin dated for release May 14, 1951.

I have signed the six copies as requested and delivered five of the signed copies to your office on August 8, 1951. I have retained one copy for our files.

We note that we are to advise Mr. Wing G. Agnew, Executive Officer, Region VIII, Defense Minerals Administration, Eastern Experiment Station, College Park, Maryland, when work on the project is started and that reports MF104 covering the work shall be submitted to Mr. Agnew by the 15th of the month following the period covered by the report.

Sincerely yours,

John F. Cowley

John F. Cowley
President

JFC:mz
cc: Wing G. Agnew
cc: George A. Ellis

COPY

August 10, 1951

Mr. Wing G. Agnew, Executive Officer
Region VIII, Defense Minerals Administration
Eastern Experiment Station
College Park, Maryland

Re: Docket No. DMA 1526X
Exploration Project Contract

Dear Mr. Agnew:

This is to advise you that engineering work, locating the diamond drill stations covered by the Exploration Project Contract DMA 1526X commenced August 9, 1951. Actual diamond drilling will commence in the next few days.

A copy of my letter to Mr. C. O. Mittendorf, Director, Production Expansion Division Defense Minerals Administration is enclosed for your files.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:mz
cc: C. O. Mittendorf ✓
cc: G. A. Ellis

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

15-26
N-9701

August 9, 1951

Memorandum

To: C. O. Mittendorf, Director
Production Expansion Division

From: Executive Officer
Region VIII

In reference to a copy of the letter dated August 1, 1951, to Mr. John F. Cowley, President, Vermont Copper Company, Inc., regarding exploration contract and Docket DMA-15~~62X~~26:

In this letter, instructions were given to transmit Progress Reports for the exploration contract to Mr. Wing G. Agnew, Executive Officer, Region VIII. It may avoid possible serious delay in the future if correspondence designated the current executive officer for Region VIII.

McHenry Mosier

McHenry Mosier

FILE COPY
SURNAME:

Moves Mittendorf

400

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

August 9, 1951

Q.E.C.

Contract Service Section
General Accounting Office
Washington 25, D. C.

Re: Docket DMA 1526X
Exploration Project Contract Idm-E94
Vermont Copper Company, Inc.
South Strafford, Vermont

Gentlemen:

Enclosed for recording in your office is the original, signed copy of an Exploration Project Contract executed between the operator named in the above reference and the Government of the United States.

Sincerely yours,

C. O. Mittendorf (7,7)

C. O. Mittendorf, Director
Production Expansion Division

J.F. 8/16

Enclosure-1

DEMoulds/bjs
cc to: Adm. Reading File
Field Team, Region VIII (2)
Mr. Gowen
Mr. McKnight
Mr. Mittendorf, Mr. Olund
Mr. Moulds
Reports and Records
Docket copy
Chron. copy

FILE COPY
SURNAME:

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

Moulds
Mittendorf (for)

August 1, 1951

Mr. John F. Cowley, President
Vermont Copper Company, Inc.
South Strafford, Vermont

Re: Docket No. DMA 1526X
Exploration Project Contract

Dear Mr. Cowley:

Enclosed you will please find six copies of the Exploration Project Contract for the drilling program to be conducted north of the Elisabeth Mine. The contract bears effective date of August 1, 1951 and serial number Idm-E94, and has been signed for the Government.

Kindly sign all six copies as an authorized officer of the company and retain one copy for your file. The remaining copies including the original are to be returned to this office as soon as possible.

Also enclosed is a set of four Progress Report Forms MF-104, to be used in making your first report which should be submitted in quadruplicate to Mr. Wing G. Agnew, Executive Officer, Region VIII, Defense Minerals Administration, Eastern Experiment Station, College Park, Maryland by the 15th of the month following the period covered by the report.

A copy of an information bulletin which we have prepared and which answers many of the questions that have arisen in connection with the exploration program is also enclosed.

For additional forms or any further questions in connection with the project it is suggested that you contact Mr. Agnew at the above address direct. You are also requested to advise Mr. Agnew when the work is started under this contract.

Sincerely yours,

C. O. Mittendorf

C. O. Mittendorf, Director
Production Expansion Division

Enclosures-11

DEMoulds/bjs
cc to: Adm. Reading File
Reports and Records
Mr. Mittendorf, Mr. Olund
Mr. Moulds
Mr. Lyon
Mr. McKnight
Region VIII (2)
Docket copy
Chron. copy

FILE COPY
SURNAME:

Guthrie

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

July 27, 1951

del'd by hand

a.E.C.

Memorandum

To: Chief, Production Expansion Division

From: General Counsel

Subject: Vermont Copper Company, Inc. exploration contract -- Docket No. DMA-1526X

The contract in the captioned case is approved as to legal form and sufficiency subject to:

1. Attachment to the contract of the map referred to in paragraph 2 and to Exhibit A of map referred to therein.

2. Approval by the Government of any subcontract under which work on the project is to be done.

The contract should be dated as of the date of delivery.

Your file is returned herewith.

J. L. Hofflund
J. L. Hofflund
General Counsel

Attachment

RRGuthrie/ema

Copy to: R. R. Guthrie
J. L. Hofflund } del'd by hand
Chron.
~~Files~~ - D.M.A. docket
Records & reports unit

VERMONT COPPER COMPANY, INC.

OFFICE OF THE
CHAIRMAN OF THE BOARD
BENNINGTON, VT.

July 25, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 27 1951
LANDON F. STROBEL
Executive Secretary

Dr. James Boyd, Administrator
Defense Minerals Administration
Department of Interior
Washington 25, D. C.

Dear Dr. Boyd:

This will acknowledge your letter dated July 10, 1951 in connection with certain proposed methods of financing additional exploration and development work at the Copper Mines of the Vermont Copper Company, about which I wrote you in letter dated June 23, 1951.

You suggest the withdrawal of our present application for exploration contract which involves an amount of $51,000. for diamond drilling only, of which the Government's share would be approximately $26,000. and the submission of a new application for an exploration contract to include our entire set-up.

Such a suggestion comes as a surprise as we were advised by your organization during discussions with them by our President, Mr. John F. Cowley, during the latter part of April andagain in May, 1951, that the Defense Minerals Administration definitely preferred that individual applications be submitted covering each separate unit of exploration work rather than one application for an overall project.

We were also advised not to include in our application for diamond drilling an exploratory shaft sinking and drifting, because if the latter were deemed by the Administration to border on development work, then the entire application might be turned down. However, the exploratory shaft sinking and drifting which we propose to do is absolutely necessary in the ore body under consideration in order to obtain sufficient information regarding the quantity and grade of ore to determine the advisability of a large scale development program.

It was with this understanding that we filed application numbered DMA 1526X with the intention of filing additional applications at such times as appeared warranted.

However, if it now appears practical and desirable from the Defense Minerals Administration viewpoint

to withdraw our present application for exploration aid covering diamond drilling only and to submit a new application to include the necessary shaft sinking and exploratory drifting in addition to such diamond drilling, we will gladly do so, although it would seem preferable to supplement the application already filed. We are deferring work until approval of our present application.

A preliminary estimate of the total amount required for the complete program is about $350,000. of which we must supply one-half.

We believe that, in order to finance our share of the exploration program at the Elizabeth Mine, we will still require cancellation of our present government contract in order to be able to secure financing through stock sales.

It is our opinion that exploration work at the Ely and Pike Hill mines should be considered as a separate project. When substantial ore deposits are located in those areas it is probable that additional mill facilities will be required in addition to a large development program which may require financing by a separate company.

In view of present sulphur shortages it also is quite probable that the recoveries of sulphur and iron from those areas may be as important as copper and will enter into any long range problem to a greater extent than at the Elizabeth Mine.

Our engineers have commenced work on a revised exploration program for the Elizabeth Mine which will be submitted shortly.

Very truly yours,

George Adams Ellis

Chairman.

FILE COPY
SURNAME:

Gowen

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

July 11, 1951

MEMORANDUM: J. C. Wittendorf

To: Director, Production Expansion Division

From: Director, Supply Division

Subject: Application of Vermont Copper Company, Inc., South Strafford, Orange County, Vermont. Docket No. DMA-1526X

Transmitted herewith is our report and recommendation on the Subject Application. Will you please draw a contract for the signature of the applicant.

Tom Lyon

Tom Lyon, Director
Supply Division

Enclosure

JWAlt:ez

Copy to: Files
Administrator's Reading File
Reports & Records Branch
J. B. Gowen
Executive Officer, DMA Field Team, Region VIII
C. H. Johnson
D. MacLaren

DMA 1526

857

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMA 1328-X

Commodity Copper

Total Amount $51,382.00

Govt. Participation 50%

1. Name and Address of Applicant Vermont Copper Company, Inc.
South Strafford, Orange County, Vermont

2. Location of Property Orange County Copper District, Vermont

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

If not, application will be rejected.

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

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

a) Good ✓

b) Poor _____

c) None _____

d) Don't know—needs field examination _____

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

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

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

Does the lease have sufficient time to run to cover a future

productive period? —

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? —

b) MF-202 —

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

a) Available manpower yes

b) Equipment and supplies yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* yes

d) Water (question 13)* yes

e) Power (question 13)* yes

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

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

Is a field check needed on this point? No

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

a) Is the project adequately described? yes

If not, are there sufficient data given so that you can describe the project? — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? yes

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

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? yes

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? yes If so, attach a draft.

e) Are the cost estimates reasonable? yes

f) Should more information be requested from applicant? no

g) Is a field examination necessary to complete Exhibit A? no

11. Exhibit B (question 23-d)*

a) Is it applicable? no

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

c) Is a field check needed? no

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

a) Is it applicable? yes

b) Sufficient data? no - see draft attached If so, attach a draft.

c) Are rents and charges reasonable?

d) Is a field check needed?

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

a) Are there sufficient data?

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

c) Is the schedule excessive for the work proposed? no

d) Are the proposed wages and salaries reasonable?

e) Is a field check needed?

Exhibits and Recommendation — Dockt No: DMA 1526-X

Exhibit A

Applicant proposes to establish 6 diamond drill stations, 500 foot interval between stations, and to drill 4 holes from each, averaging 500 to 700 feet per hole in depth. Total 14,400 feet of holes. Project to be completed in 19 months. Total cost $51,382.00, or an average of $3.568 per foot.

Summary of cost estimate

14400 feet Drilling @ $2.25 per ft. (Contract while drilling)	$ 32,400.00
Moving & setting up drill, cementing holes 288 days @ $10.50	3,024.00
Cost of materials (water line, rods, casing, cement etc.)	11,088.00
" " clearing trail for moving drill, supplies, etc.	840.00
" " " 6 station sites	1,008.00
" " Transportation (men & equipment)	1,150.00
Engineering & geology	1,872.00
Total	$ 51,382.00

Exhibit C

Cost of equipment to be purchased (over $50.00)	
Water pipe, drill rods, bits, core barrels, casing, cement, 14,400 ft @ $0.75 per foot	$ 10,800.00
Cost of equipment to be purchased (under $50.00)	
Nominal @ $0.02 per foot drilled	288.00
Total	$ 11,088.00

Rental on line of equipment owned by applicant	
Bulldozer 176 hours @ $6.50	$ 1,144.00
Trucks (including driver) 460 hours @ $2.50	1,150.00
Total	$ 2,294.00

Note: Totals are reasonable on footage basis. If more detailed information is desired it can be furnished by applicant.

Exhibit D Cost of labor

1 Drill operator	@	$ 11.00	per day (96 days only)	$ 11.00
1 Drill helper	@	10.50	per day (96 days only)	10.50
2 Laborers	@	10.00	per day 96 days only)	20.00
1 Bulldozer operator	@	12.00	per day (22 days only)	12.00

Cost of supervision

1 Chief engineer - geologist	@	$ 16.00	(48 days only)
1 engineer	@	12.00	(48 days only)
1 engineer helper	@	11.00	(48 days only)

Recommendation: It is recommended that this application be approved

14. Exhibit E (question 23-c)*

a) Is it applicable? no

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? no

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

(All exploration must be completed within two years)

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

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Approval of application is recommended.

Approved
Lam Lyon

Reviewed by: C.P. Wheatcroft
J.B. Gowen
C.G. Johnson

Date 7/9/51

97692

Ret. to Copper Branch

July 10, 1951

Mr. George Adams Ellis
C/O Vermont Copper Company, Inc.,
Bennington, Vermont.

Dear Mr. Ellis:

This is in answer to your letter of June 23 regarding the Vermont Copper Company and the possibility of exploring and developing copper ore in a much greater area than you now have developed. Your plans for financing are noted.

Your first proposal is that the Company enter into a five-year contract with the Government for the sale of your copper at 31½ cents per pound and that you would use 5 cents of this amount for development work and capital expenditures.

Your second proposal is that you raise $200,000 for the purpose of financing such exploration and development as you have in mind. The Supply Division advises that you have an application for exploration contract which would involve but slightly over $51,000, of which the Government share would be between $25,000 and $26,000. This is a much more modest plan than you apparently have in mind at the present time. From the description of your property and your plan for further development in the ore zone, it would appear that the entire program should be included in your application in which case it would amount to much more money than your original application.

Your third plan would be to interest some of the larger companies in your project and have them take it over. It is noted, in the last paragraph of your letter that you request the Government to arrange for proceeding along one of the three courses set forth in your letter. I do not know about your third proposition as the Government, to my knowledge, has never acted as a broker in a mining deal and I believe your organization would be able to present your proposition to any of the larger companies to greater advantage than by having the Government solicit customers.

Regarding your second proposition, I believe from what you have written it includes a much broader plan for exploration that the one you have submitted for the exploration loan. I would advise you to withdraw your present application and to include your entire set up in one application so that we may have the whole picture before us for consideration.

Very truly yours,

JAMES BOYD

Administrator

TLyon:pfb

CC: Mr. Lyon
Administrator's Reading File
Deputy Administrator's Office
Mr. Gowen
F I L E S

FILE COPY
SURNAME:

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

July 9, 1951

Mr. John F. Cowley
President
Vermont Copper Company, Inc.
South Strafford, Vermont

Subject: DMA-1526X
Re: Exploration loan

My dear Mr. Cowley:

Receipt is acknowledged of your application and attachments of May 29, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1526X and referred to Mr. J. B. Gowen, Chief, Copper Branch on June 7, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1526X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel jeb
Executive Secretary

LFSTROBEL:Jeb
cc: Strobel-2
File
Gowen
Lyon

DMA 1526

LANDON F. STROBEL

Dmr 1526 X
Mr Brown

VERMONT COPPER COMPANY, INC.

OFFICE OF THE
CHAIRMAN OF THE BOARD
BENNINGTON, VT.

June 23, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 27 1951
LANDON F. STROBEL
Executive Secretary

Dr. James Boyd
Director, Bureau of Mines
Department of Interior
Washington, D. C.

Dear Dr. Boyd:

Your files contain the full history of this Company from its incorporation in the early spring of 1942. Until that time I had no financial interest in the old abandoned Vermont copper mines, and I had never been near the properties and in fact although I grew up in Vermont, I never knew they existed until 1933.

In the summer of 1942 the Bureau of Mines commenced a very extensive drilling program which continued until the spring of 1943, and I believe it was upon the preliminary results of this program and the recommendation of the Bureau of Mines, that the War Production Board approved the rehabilitation of this mining district which resulted in a contract with the Metals Reserve Company in August, 1942, for 16,500,000 pounds of copper. I was urged and in fact begged by government representatives to take the lead in reopening these old mines as a public service, and I am confident that you are convinced that my motive was solely to perform a service for the country.

The plan upon which we proceeded was worked out primarily by government representatives, and under that plan private interests were to put up $200,000 for preferred stock and the government was to advance $550,000, which was the amount estimated by government engineers as to the cost of erecting a concentrating plant and reopening and putting into operation the Elizabeth Mine. My principal advisor at this time was a mining geologist whom I had borrowed for sixty days from American Smelting and Refining Company. There was no possible chance of carrying through the work for any such figure. And in order to avoid a default, the private interests advanced additional moneys generally in $100,000 lots and each time on the expectation that the advance would be sufficient, until an aggregate of $1,300,000 of private moneys was invested and that amount now remains in the Company. The government

long since has been paid its advances of $550,000 and a later advance of $150,000 in full with interest.

The Company owns at this time about 8,000 acres of lands and mining rights of which acreage over half is owned outright. It has a plant and equipment which cost about $2,000,000 and it has a capacity for the treatment of between 600 and 700 tons of ore daily. During the period of operatinns the ore has averaged about 2%. However, during the past six months the Company has developed on the 975 foot level a new and rich zone which commences about one-half mile north of the Company's main shaft. This zone has been partially developed through a distance of 2700 feet, nearly half by drift which is on top of the ore body. It now is essential in order to operate this ore body to construct a new shaft a mile to the north of the old shaft and at a point where the surface is much lower, and it is believed that economies can be made thereby. But in any event this ore body cannot be opened up and worked properly without another shaft. The ore in this new zone along the drift already opened averaged over 3% and presents very favorable potentialities for the substantial development of the Elizabeth Mine.

The ore zone appears to extend about 15 miles from north to south and is on a direct line with the old abandoned mines in Connecticut and other mines in Canada. Six miles to the north of the Elizabeth mine (is the Ely mine which on the basis of government statistics appears to have been the most actively worked of all the mines during the period 1870 to 1880 which definitely marked the heyday of this Vermont mining district. The government reports show three or four million pounds of copper produced anually from the Ely mine, with a record production in one year of seven million pounds. There was a town of fourteen hundred on this site all dependent on the operation of this mine. And further to the north are the Eureka and Union mines, together generally referred to as the Pike Hill mines. So far as existing records show it appears that the ore was richer with each step to the north and that the Ely ore was somewhat richer than the Elizabeth, and the Pike Hill ores generally averaging over 3% copper. Our geologist, Professor Hugh McKinstry of Harvard, has advised us that exploration and development work should be done throughout this whole district, with particular reference to the northerly zone including the Pike Hill mines. And it is probable that such work will prove the necessity for the construction of a second concentrating plant at that point.

Upon the expiration of the copper premium plan this Company could have been liquidated and the stockholders would have received about fifty cents on the dollar, and in addition

the lands and the plant and equipment. From a business standpoint that seemed to be the wise course to follow. However, yourself primarily, and other government officials, urged me not to close down the mines because of the irreparable damage which would be done and also because all responsible mining engineers who had studied the situation agreed with the viewpoint which I believe was held by you, that it was most important from the national standpoint to develop a real eastern copper mining district.

I am becoming more and more convinced that there are much greater potentialities in this district than are realized generally. I believe that it is reasonable to assume that with further exploration and development work the Company could be put on the basis of twelve to fifteen million pounds of copper production per year and with the proper development in an emergency it could produce double that figure.

From the national standpoint consideration also should be given to the recovery of the sulphur as well as the iron. As you know the ore is a pyrrhotite, and the sulphur content averages about 13% and the iron 22%. We have experimented regularly with the production of an iron sulphur concentrate which is readily produced with a sulphur content of 35% and iron about 55%. We have completed negotiations with one of the largest paper manufacturers to sell them about 40% of our current production in the form of iron sulphur concentrates. They propose to construct a plant for the recovery of the sulphur and we hope to sell the iron calcine to one of the steel companies. The tailings from our current production run about 75 tons of sulphur and 125 tons of iron daily and we have in the tailings piles over 100,000 tons of sulphur and around 200,000 tons of iron all of which can be re-worked.

$1000 Tyr

We have no money for the exploration and development of this property nor for the essential construction and equipment of a new shaft. Furthermore we have turned over the largest block of stock to the Vermont Development Trust which is a public charitable trust limited to Vermont institutions. We are desirous of disposing of that block of stock in order to provide funds for the Trust and in the meantime we do not feel it is proper for the Trust to consent to any large loan. In other words unless we can get some assistance in one form or another we must proceed to operate the mine on a hand to mouth basis producing a few hundred thousand pounds of copper monthly and without any real exploration and development work.

I want to propose to the United States Government several possible and practical plans.

First: We propose that the Company enter into a five-year contract for the sale to the government of all of our copper at the Connecticut Valley price plus seven cents, and we will agree on our part to use five cents out of the seven for exploration and development work and for capital expenditures. This necessarily would involve cancellation of our present government contract which has two years to run.

Second: In the event that the foregoing plan is not approved, we solicit the cancellation of the government contract effective as of June 1, 1951, conditioned upon our being able to secure a minimum of $200,000 of additional financing through the issue of stock all of which moneys we will undertake to use over a two-year period for exploration and development and for capital expenditures. We have reason to believe that this financing can be obtained from parties interested in copper or sulphur, but we have been unsuccessful in efforts to obtain such financing unless the government contract is terminated. On this point we want to call your attention to the fact that the government contract was assumed to have been entered into as a means of helping this Company and not as a detriment to it. We have been informed that several other companies have obtained deferments or cancellation of similar contract although we have been unable to obtain any such relief. There is the further point that the contract is based upon "market price". We believe that at the present time there is no market price of 24½ cents. That is primarily the price at which the larger companies sell to their controlled fabricating companies. The export price is 27½ cents and the Canadian and Chilean prices are the same figure and it would seem equitable for the government to pay us at least that figure. The fair course is for the government to cancel the contract.

Third: We will dispose of our investment in the Company at our cost of $1,300,000, without interest, provided one of the larger companies will take it over and develop properly the Eastern copper district. We are more interested in the establishment of a sound enterprise in the interest of our country and state than in private profit.

We have produced over forty million pounds of copper since reopening these old mines. And we contend that this Company has done an outstanding job for the government, and has overcome great obstacles in bringing the Company to the present condition.

We respectfully request that the government arrange for proceeding along one of the three courses above set forth.

Respectfully,

George Adams Ellis

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

May 29, 1951

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

Gentlemen:

We submit herewith Form No. MF-103 application for Aid for an Exploration Project Pursuant to Mineral Order 5, Under Defense Production Act of 1951.

Form No. MF-100 General Technical Data For Use Under the Defense Production Act of 1950 was submitted on May 23, 1951 to Mr. Francis Speaker, Defense Minerals Administration, Room 2465, for use in obtaining priority assistance. No docket number had been assigned at that time.

Very truly yours,

John F. Cowley

John F. Cowley
President

JFC:mz

May 16, 1947

Dnes
1526

Mr. William T. Gunshinan
Vermont Copper Company, Inc.
Room 2921
120 Broadway
New York 5, New York

Dear Mr. Gunshinan:

Re: Elizabeth Mine
(Vermont)

This will acknowledge receipt of your operating report for March, 1947 on the above mine.

We thank you for this report.

Very truly yours,

C. O. Mittendorf, Director
Office of Premium Price Plan
for Copper, Lead and Zinc
Room 2204, Tempo "K" Bldg.

cc: Arundale

mt

VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD
VERMONT

February 11, 1947

Mr. Landon F. Strobel, Executive Secretary
Quota Committee, Premium Price Plan for Copper, Lead and Zinc
Room 4317, Social Security Building
Washington, D. C.

Dear Mr. Strobel:

We enclose herewith 6 copies of an application for exploration premiums to be paid on production from our Elizabeth Mine and to be expended in exploration of the Elizabeth Mine.

You will note from the application that we have reached a critical stage in our operations. The additive effects of inadequate hoisting facilities and elimination of exploration during the past few years will cause within 6 months a severe decline in our production unless work to correct both these deficiencies is started immediately. We are about to run out of ore in our upper levels, and our present hoisting facilities are so crowded that we cannot use them for exploration without serious decline in production.

To remedy this, we have planned the concurrent schedules of production and exploration which will be apparent to you from the application. We present a discussion which we believe indicates that the shaft we propose to sink is both an exploratory opening and an operating facility. In view of its dual nature we propose that one-half of its cost be considered eligible for exploration premiums, the other half to be allocated to capital expense according to usual practice.

The situation is so pressing that we have made all the necessary preparations and have begun work on the exploration items described. We respectfully request that the Committee take this into account in its consideration of our application.

In our cost estimates we have included no overhead, since this cost will not be increased substantially by prosecution of the exploration work. Similarly, no expense for equipment is included, since any such purchased will be usable in future mine operations.

The exploration described is planned at this time to be executed as set forth in the application. We expect, however, that as it progresses, changing conditions may cause us to modify the plans to suit the changed conditions.

Our labor supply is such that we will have no difficulty in maintaining a crew sufficient to produce and develop at a normal rate during the course of the exploration work.

We undertake to file promptly and regularly the reports specified by your instructions to applicants for exploration premiums and such other reports as the Quota Committee may specify.

Very truly yours,
VERMONT COPPER COMPANY, INC.

Fred W. Snow

Fred W. Snow
President & General Manager

FWS:JC
Enclosures

SUOMI OY "UTRAN"
PREMIUM PRICE PLAN
RECEIVED
FEB 14 1997
COMMERCIAL TRADE ZONE
CEL-OFL

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Exhibits

The main fracture along which occur the oreshoots of the Elizabeth Mine strikes N5°E and dips 63° to the east. It lies in the east flank of an anticline showing extensive dragfolding of the quartzite-mica-schists of which the anticline is composed. The anticline also strikes N5°E and pitches about 25° to the north.

The oreshoots lie at the intersections of the main fracture with a series of footwall fractures dipping 45° to 57° to the east, with the steeper dips near 57° prevailing. These footwall fractures strike about N5°W (See Exhibit C). The rake of the intersections coincides with the pitch of the anticline, in general about 25° to the north. The coincidence of these factors (rake of intersections and pitch of anticline) appears to control the formation of oreshoots within the main fracture.

Four such oreshoots are known or inferred. No. 1 has supplied all the production of copper ore to date (See Exhibit A). No. 2 and No. 4 supported minor copperas (pyrrhotite) mining in the early 19th century. No production from No. 3 is known.

The entire fracture carries substantial pyrrhotite mineralization with small amounts of copper. Local swellings of the sulphide bodies with higher concentration of copper minerals (chiefly chalcopyrite) constitute the oreshoots, which, as noted above, follow the rake of intersections and the pitch of the anticline. Widths of these oreshoots varies from 10 to 40 feet, averaging about 20 feet.

A minor feature appears in an intercalated amphibolite bed which outcrops above Oreshoot No. 4 to the north of the "South Mine". Beside its convenience as a marker bed, it seems not improbable that its unfavorable nature as a host rock may have some part in the control of ore deposition.

What may prove to be a major factor in the control of oreshoot formation has been noted in recent mining in the lower levels. It appears probable that toward the north end of the mine, in the vicinity of coordinates 9,000 N and 11,500 N (See Exhibit C), two of the footwall fractures tend to veer to the northwest and to steepen in dip. Both these trends should tend to steepen the rake to the north of their intersections with the main fracture. In turn this tendency would act to cause convergence of the oreshoots and increase in the intensity of fracturing toward the north end of the mine.

This structural control may account for the notably greater widths and higher copper content of ore in the northerly part of Oreshoot No. 1. Following this line of reasoning, by far the more favorable area for exploration in Oreshoots No. 2 and 3 lies between 11,500 N and 13,500 N. We consider these hypotheses sufficiently valid that until contrary evidence becomes available we plan that this area shall be the major locus for exploration.

Labor supply presents no problem to us at this time. Our underground crew reached a minimum of 45 men during the war. Last fall we were able to increase this figure to 60, and it now stands at 90. Included in these men are a group of skilled, experienced shaft sinkers.

Ore reserves and hoisting facilities are the main factors to be considered in the discussion of this matter. (See Exhibit A)

The mine is opened by Adit No. 1 on the 300-level, the main inclined shaft to the 600-level, and a 2-compartment winze from the 600-level to the 975-level. The adit capacity is ample to handle the present output of 12,000 tons a month. Capacity of the main inclined shaft is 8,000 tons a month. This cannot be increased.

At present the monthly mine production is made up of:

4,000 tons of ore from stopes above the 300-level, which is hauled out of the adit directly.

8,000 tons of ore from stopes between the 600 and 300-levels which is hoisted through the shaft and hauled out of the adit.

The ore reserves in Oreshoot No. 1 above the 600-level are completely exposed and almost all gone. They are classified as follows:

	BROKEN	IN PLACE	TOTAL
Above 300	25,000	5,000	30,000
600 to 300	35,000	3,000	38,000
TOTAL	60,000	8,000	68,000

This is somewhat less than 6 months total reserve above the 600, which due to the limited capacity of the main shaft and the necessity for supplying one-third of the production from above the 300-level, must be made to last 7-1/2 months, as follows:

	TONS RESERVE	OUTPUT per MONTH	MONTHS
Above 300	30,000	4,000	7.5
600 to 300	38,000	8,000	4.8
Elsewhere	22,000	8,000	2.7
TOTAL	90,000	12,000	7.5

The ore from "Elsewhere" can come only from levels off the inclined winze. The capacity of this winze, which also cannot be increased, is 3,500 tons a month. It will not be possible, then, to supply from the winze the full 8,000 tons for the main shaft, once the ore from the 600 to 300 is exhausted. For the best balance, the 22,000 tons to come from the winze should be taken out over the full 7-1/2 months, or at a rate of about 3,000 tons a month. The small excess capacity of the winze cannot add to production, since there is no further capacity in the sole outlet, the main inclined shaft.

It is apparent that after the presently available reserves are thus stretched over the longest time possible, 7-1/2 months, production must drop to the capacity of the winze, 3,500 tons a month, unless new reserves and/or new hoisting facilities are made available.

The only nearby reserves are in Oreshoot No. 2 above the 575-level south. These must still be prepared for sub-level shrinkage. The 5,000 tons a month necessarily to be supplied from these stopes can be made available from drawing their swell in not less than 6 months. This will be in time to take up the loss in production from exhaustion of reserves between the 600 and 300 levels. Production of 8,000 tons a month from the main inclined shaft can, then, be maintained <u>by continually crowding the winze to capacity.</u>

This leaves the problem of supplying another 4,000 tons a month from above the 300-level when present reserves are exhausted, at the end of 7-1/2 months. The only possibility of doing this lies in Exploration Item 1, extension of the 300-level south into Oreshoot No. 2. If ore is encountered here in substantial quantities, 4,000 tons a month can be had from the swell in 6 months. We consider this the least likely exploration item we have. At the surface the oreshoot is the most weakly indicated of the four oreshoots. The outcroppings contain only massive pyrrhotite. Stopes at this horizon in Oreshoot No. 1, in the vicinity of co-ordinate 11,000 North, ended in pyrrhotite at 70 feet above the sill. The present face, just entering the hypothetical projection of the zone, shows two feet of massive pyrrhotite only. 500 feet down the raise is an excellent intercept, RM 7, 17.5 feet of 2.86% copper. All of this adds up to a high degree of improbability for any ores to be found from this level. Our reserve situation is so pressing that we feel it necessary to explore this possibility, but we feel that it would be extremely unwise to hazard the ability of the mine to produce at capacity solely on this one heading.

This brings us to the northern portion of the mine below the 600-level in the vicinity of the winze and co-ordinate 13,000 North. For reason discussed under the heading of "General Geology", this section appears to be the most favorable location for exploration. Here our hands are tied from exploration by the pressing necessity to crowd the winze with production for at least a year to come. Here also is the only chance to supply the necessary 4,000 tons a month if extension of the 300-level south fails to find ore, and this can only be done by provision of new hoisting facilities <u>in addition to the main inclined shaft.</u>

We think that this discussion proves that a new shaft from surface in this section of the mine is both an urgently necessary operating facility and an exploration item. We propose that it be considered as both, and that the cost be split between exploration and operating expense.

The shaft item is described in detail furthur in this application. For the purpose of this heading it is only necessary to say that it will enable us to explore Oreshoots No. 2 and 3 in the most favorable geological location, and will probably determine whether this mine is to be a substantial copper producer for many years to come. We consider this item and the sill items to be prosecuted from it to be of critical importance to the whole future of the mine and to be excellent risks based on sound geology.

The project consists of four items:

1. A drift south on the 300-level to explore Oreshoot No. 2. This is primarily to exploit the rather poor chance that it will provide production to replace that now coming from reserves about to be exhausted above the 300-level.

2. A drift south on the 575-level to explore Oreshoot No. 3 at a horizon some 1600 feet down the rake from its outcrop.

3. A vertical shaft from surface to the 1650-level, 100 feet of which is to be raised and 1290 feet to be sunk, with crosscutting and drifting on the 1650-level to explore the projected position of Oreshoot No. 3. It seems probable that at this horizon convergence of the oreshoot and increase in the intensity of fracturing may be found to have created a much larger ore zone than is indicated by simple projection of Oreshoot No. 3.

4. Extension of the 975-level south to explore Oreshoot No. 2 in the vicinity of two reasonably good diamond drill intercepts.

Summaries of the estimated footages and costs appear below.

ESTIMATED FOOTAGES

	Item 1	Item 2	Item 3	Item 4	Total
Drifting	400	1250	900	500	3,050 @ 18.08
Raising	120	175	70	110	475 @ 14.34
Crosscutting			580		580 @ 12.76
Shaft-Sinking			1290		1,290
Shaft-Raising			100		100
Adit			300		300

5775

ESTIMATED COSTS

	Item 1	Item 2	Item 3	Item 4	Total	
Drifting	$7,240	$22,600	$16,300 ×	$9,000	$55,140	
Raising	1,860	2,700	× 550(1)	1,700	6,810	
Crosscutting			7,400		7,400	
Hoisting Crosscut(1) 176'			× 1,550 410' 170' 580'		1,550	9.12 = ½ cost
Shaft-Sinking(1)			× 79,000		79,000	64.24 = ½ cost
Shaft-Raising(1)			× 3,350		3,350	35.50 = ½ cost
Adit (1)			× 3,000		3,000	10.00 = ½ cost
Totals	$9,100	$25,300	$111,150	$10,700	$156,250	

(1) One-half of estimated total cost.

300-LEVEL SOUTH, ORESHOOT NUMBER 2.

The existence of this oreshoot is known from open-out workings which exposed massive pyrrhotite, a drift and raise on the 575-level which have followed the barren footwall section and exposed little ore, and four drill holes (See Exhibit A) which have shown the following:

Number	Feet Intersept	% Copper
BM 7	17.5	2.86
BM 13	19.0	2.10
600 B	5.8	2.81
600 A	19.0	2.15

We consider that the probabilities of ore are high in the vicinity of the 575-level, but are tentative only at other horizons. This project is designed to explore for ore in Oreshoot No. 2 and involves 400 feet of drifting from the present face of the 300-level south, with one raise to explore above the level.

ESTIMATED TIME SCHEDULE

	Feet Advance								
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
Drifting	60	100	100	100	40				400
Raising						40	40	40	120

DETAIL OF ESTIMATED COST PER FOOT

	Labor	Material (1)	Other (2)	Total
Drifting	$8.50	$5.80	$3.80	$18.10
Raising	7.50	3.60	4.40	15.50

(1) Pipe, track, and explosives
(2) Compressed air, drilling and mucking supplies.

ESTIMATED TOTAL COST

Drifting	400 feet @ $18.10		$7,240
Raising	120 feet @ 15.50		1,860
		Total	$9,100

575-LEVEL SOUTH, ORESHOOT NUMBER 3.

The existence of this oreshoot is inferred from certain trenching and prospect holes (See Exhibit A) on its outcrop, which showed disseminated pyrrhotite with some chalcopyrite and chalcocite, the general geology described under that heading above, and diamond drill hole V.C.8 which showed 12 feet of 1.5% copper.

We propose to explore this oreshoot at the 575 level by its extension 1250 feet south and the driving of a 175-foot raise.

ESTIMATED TIME SCHEDULE

Feet Advance

	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Drifting	100	150	150	150	150	150	150	150	100			1250
Raising										75	100	175

DETAIL OF ESTIMATED COST PER FOOT

	Labor	Material (1)	Other (2)	Total
Drifting	$8.50	$5.80	$3.80	$18.10
Raising	7.50	3.60	4.40	15.50

(1) Pipe, track, and explosives
(2) Compressed air, drilling and mucking supplies

ESTIMATED TOTAL COST

Drifting	1250 feet @ $18.10		$22,600
Raising	175 feet @ 15.50		2,700
		Total	$25,300

The reasons for sinking this shaft and for considering it to be partially exploration and partially an operating facility are discussed under the heading "Effect of the Exploration Program on Long-Term and Current Production". Its location is determined by the geological factors discussed under "General Geology".

It is planned to drive a 300-foot adit (See Exhibit A) to a depth of slightly under 100 feet below the surface and level with the present 300-level, raise for sheave room (completing to surface for ventilation), crosscut and raise for hoisting room, sink to the 975-level, transfer sinking equipment to the 975, and sink to the 1650-level at a depth of 690 feet below the 975-level. Total depth from the 300-level will be 1290 feet.

While sinking to the 975-level is in progress, the south 975-level will be extended by drifting 120 feet and crosscutting 750 feet to the shaft position. This will take up somewhat more than the 500 tons excess capacity of the winze and will reduce the 8,000 tons of ore hoisted monthly through the maincinclined shaft, but for 5 months this reduction can be compensated by somewhat higher production from the stopes above the 300-level, reducing the life of these reserves from 7½ months to 6½ months.

As soon as connection can be made on the 975-level, the 975 south drift can be pushed ahead to explore Oreshoot No. 2 (See Item 4). Sinking is scheduled to be complete by October 25th, allowing 11 weeks to explore Oreshoot No. 3 at this horizon, with a 410-foot crosscut and 900 feet of drifting.

This schedule calls for high-speed shaft-sinking. The present management of the Elizabeth Mine has supervised more than 15,000 feet of vertical shaft-sinking. A contractor who has done a number of shaft-sinking jobs under our present management at other properties will handle the job. He has assembled a crew of Canadian shaft miners experienced in gneiss and schist shaft-sinking. They are now at work. The shaft will be placed with the long dimension normal to the schistosity, facilitating to the maximum bench-sinking by slabbing off of the schist from the bench face. Alternate benches at each end will provide alternate sumps into which two-thirds of the muck can be hoed to large-size buckets. Four shifts will be worked. It is our opinion that room for work at this speed can not be obtained in a shaft smaller than 3 standard compartments.

As soon as the 1650-level plus a 10-foot sump is reached, the shaft crew will transfer to crosscutting at 15 feet a day. 28 days will reach the projected location of Oreshoot No. 3, leaving 45 days on two headings, in which 450 feet each can be driven before the end of the year.

It will be noted that 900 feet of drifting appears to be more than necessary to explore the projected position of Oreshoot No. 3 at this level. This projection, however, is made from observations 4,000 feet up the rake on the basis of general geology only. The degree of uncertainty as to its location is high, and we think 900 feet not too much to allow for its exploration. Further, we may find at this horizon that convergence of the oreshoots has occurred, in which case much larger ore occurrences might be encountered.

ESTIMATED TIME SCHEDULE

February and March - Drive 300-foot adit, 170 feet of hoisting crosscuts, 70 feet of shaft pocket raise, raise shaft 100 feet to surface, collar shaft.

	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Sinking	200	200	200	200	200	200	90			1,290
Crosscutting							200	210		410
Drifting								300	600	900

DETAIL OF ESTIMATED COST

	Labor	Materials (1)	Other (2)	Total
Adit	$9.25	$6.20	$4.60	$20.05
Crosscuts	8.50	5.80	3.80	18.10
Shaft Pocket Raise	7.50	3.60	4.40	15.50
Shaft Raise	31.50	30.00	5.80	67.30
Shaft	69.00	38.40	9.70	117.10
Drifts	8.50	5.80	3.80	18.10

(1) Pipe, timber, explosives
(2) Compressed air, drilling and mucking supplies

ESTIMATED TOTAL COST

Adit	300 feet @ $20.05		$6,000
Hoisting Crosscuts	170 feet @ 18.10		3,100
Shaft Pocket Raise	70 feet @ 15.50		1,100
Shaft Raise	100 feet @ 67.30		6,700
Shaft	1290 feet @ 117.10		151,000
		Total	$174,900
	One-half		$87,450
1650-level crosscut	410 feet @ $18.10		7,400
1650-level drifts	900 feet @ $18.10		16,300
			$ 111,150

975-LEVEL SOUTH. ORESHOOT NO. 2.

This exploration item is to be carried by hoisting through the winze until connection is made to the shaft, as described under Item 3. The crosscut to the shaft we consider to be sufficiently in the nature of an operating facility that we make no application for exploration premiums to be applied to its cost. One raise is proposed to explore the oreshoot above the level.

ESTIMATED TIME SCHEDULE

	Feet Advance											
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Drifting	100	20	Crosscutting 750 feet					100	100	100	80	500
Raising									50	50	10	110

DETAIL OF ESTIMATED COST PER FOOT

	Labor	Material (1)	Other (2)	Total
Drifting	$8.50	$5.80	$3.80	$18.10
Raising	7.50	3.60	4.40	15.50

(1) Pipe, track, and explosives
(2) Compressed air, drilling and mucking supplies

ESTIMATED TOTAL COST

Drifting	500 feet @ $18.10	$9,000
Raising	110 feet @ 15.50	1,700
	Total	$10,700

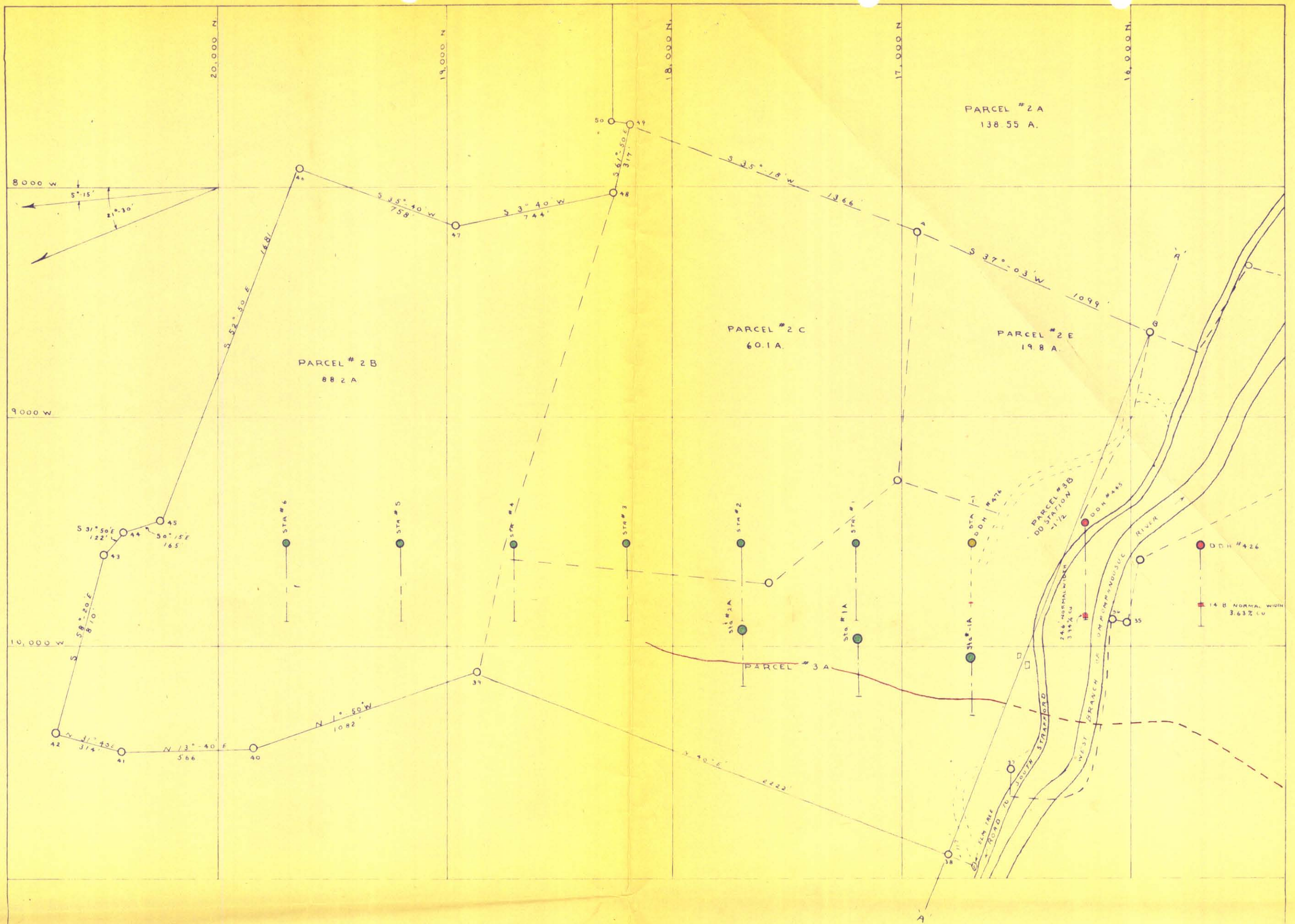
ESTIMATED CHANCES OF SUCCESS IN FINDING ORE
(100% equals certainty)

ITEM	PERCENTAGE
1	40
2	50
3	50
4	70

It is understood that "finding ore" means finding substantial amounts of ore.

APPROXIMATE LEGAL LOCATION OF PROJECT

4,000 feet due north of the southeast corner of Strafford Township, Orange County, Vermont.



LEGEND

DIAMOND DRILL HOLE - DRILL'G AT PRESENT

COMPLETED DIAMOND DRILL HOLES

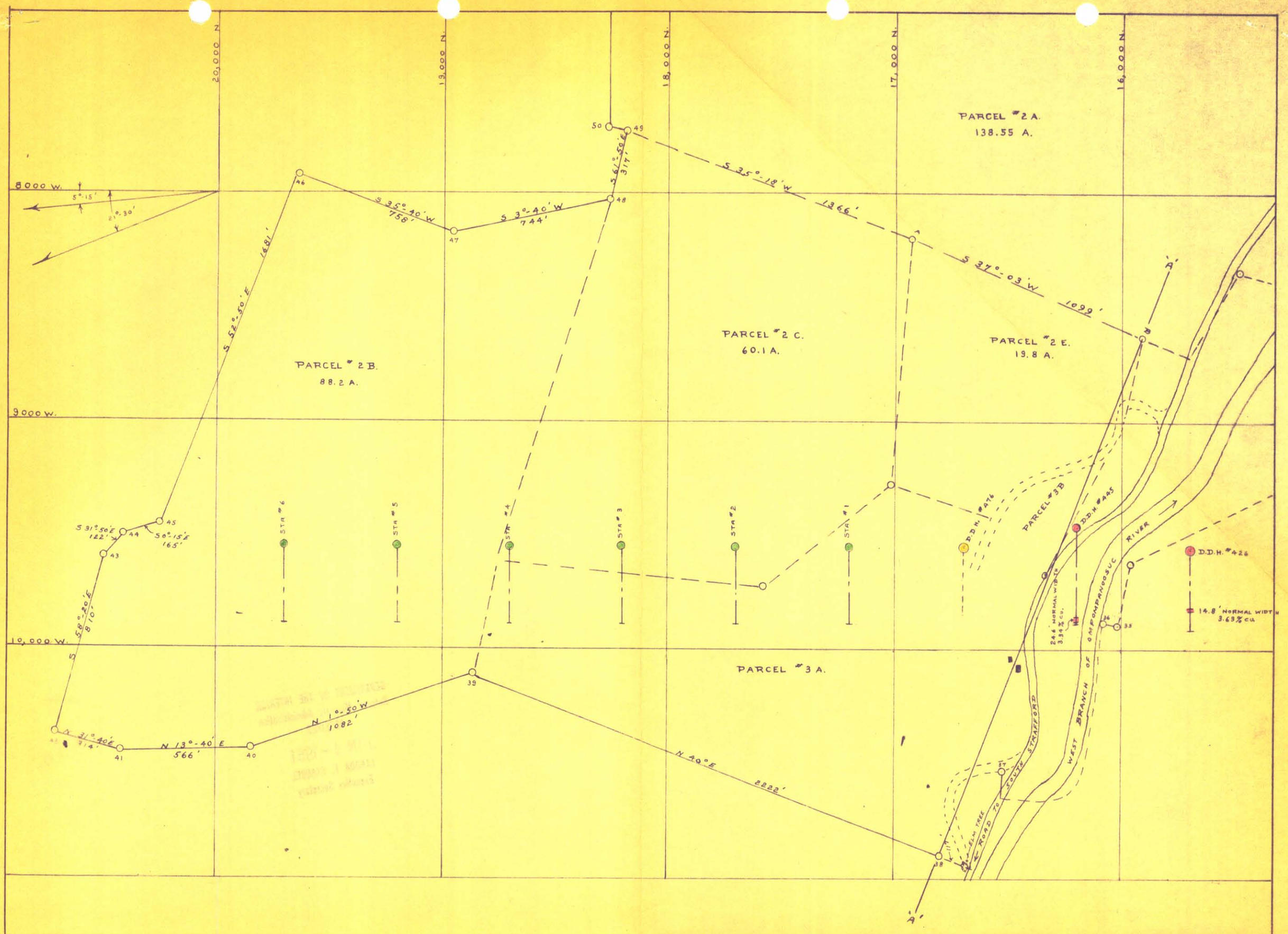
PROPOSED DIAMOND DRILL STATIONS

ELECTRO - MAGN. CONDUCTOR

PLAN OF LAND
LOCATED ON LOT #84 IN THE
THIRD DIVISION OF STRAFFORD
TOWNSHIP, ORANGE COUNTY, VT.
OWNED BY
VERMONT COPPER COMPANY, INC.
SOUTH STRAFFORD, VERMONT

SCALE: 1 INCH = 400 FT.

MAY 29, 1951



LEGEND

DIAMOND DRILL HOLE - DRILL'G AT PRESENT

COMPLETED DIAMOND DRILL HOLES

PROPOSED DIAMOND DRILL STATIONS

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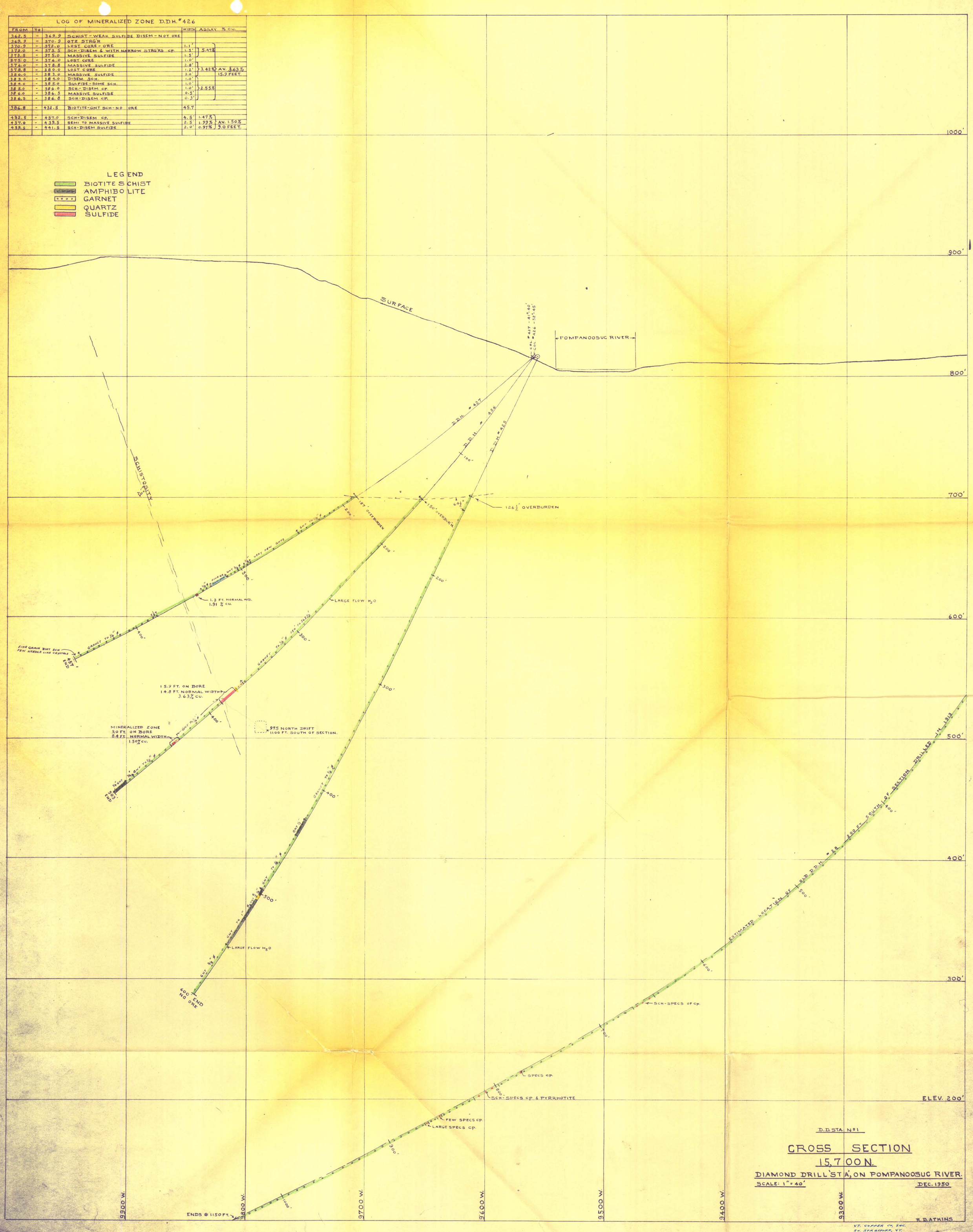
SOUTH STRAFFORD, VERMONT.

SCALE: 1 INCH = 400 FT. MAY. 29, 1951

R. D. AIKINS

LOG OF MINERALIZED ZONE D.D.H. #426

FROM	TO			WIDTH	ASSAY % CU.	
362.5	-	369.9	SCHIST - WEAK SULFIDE DISEM - NOT ORE			
369.9	-	370.9	QTZ STRG'R			
370.9	-	372.0	LOST CORE - ORE	1.1'		
372.0	-	373.5	SCH-DISEM & WITH NARROW STRG'RS CP.	1.5'	5.47%	
373.5	-	375.0	MASSIVE SULFIDE	1.5'		
375.0	-	376.0	LOST CORE	1.0'		
376.0	-	378.8	MASSIVE SULFIDE	2.8'		
378.8	-	380.0	LOST CORE	1.2'	3.42%	AV. 3.63%
380.0	-	383.0	MASSIVE SULFIDE	3.0'		15.9 FEET.
383.0	-	384.0	DISEM. SCH.	1.0'		
384.0	-	385.0	SULFIDE - SOME SCH.	1.0'		
385.0	-	386.0	SCH - DISEM CP.	1.0'	2.55%	
386.0	-	386.5	MASSIVE SULFIDE	0.5'		
386.5	-	386.8	SCH-DISEM CP.	0.3'		
386.8	-	432.5	BIOTITE-GNT SCH-NO ORE	45.7		
432.5	-	437.0	SCH-DISEM CP.	4.5'	1.47%	
437.0	-	439.5	SEMI TO MASSIVE SULFIDE	2.5'	1.99%	AV. 1.50%
439.5	-	441.5	SCH-DISEM SULFIDE	2.0'	0.97%	9.0 FEET.



D.D. STA. Nº 1

CROSS SECTION
15,700 N.

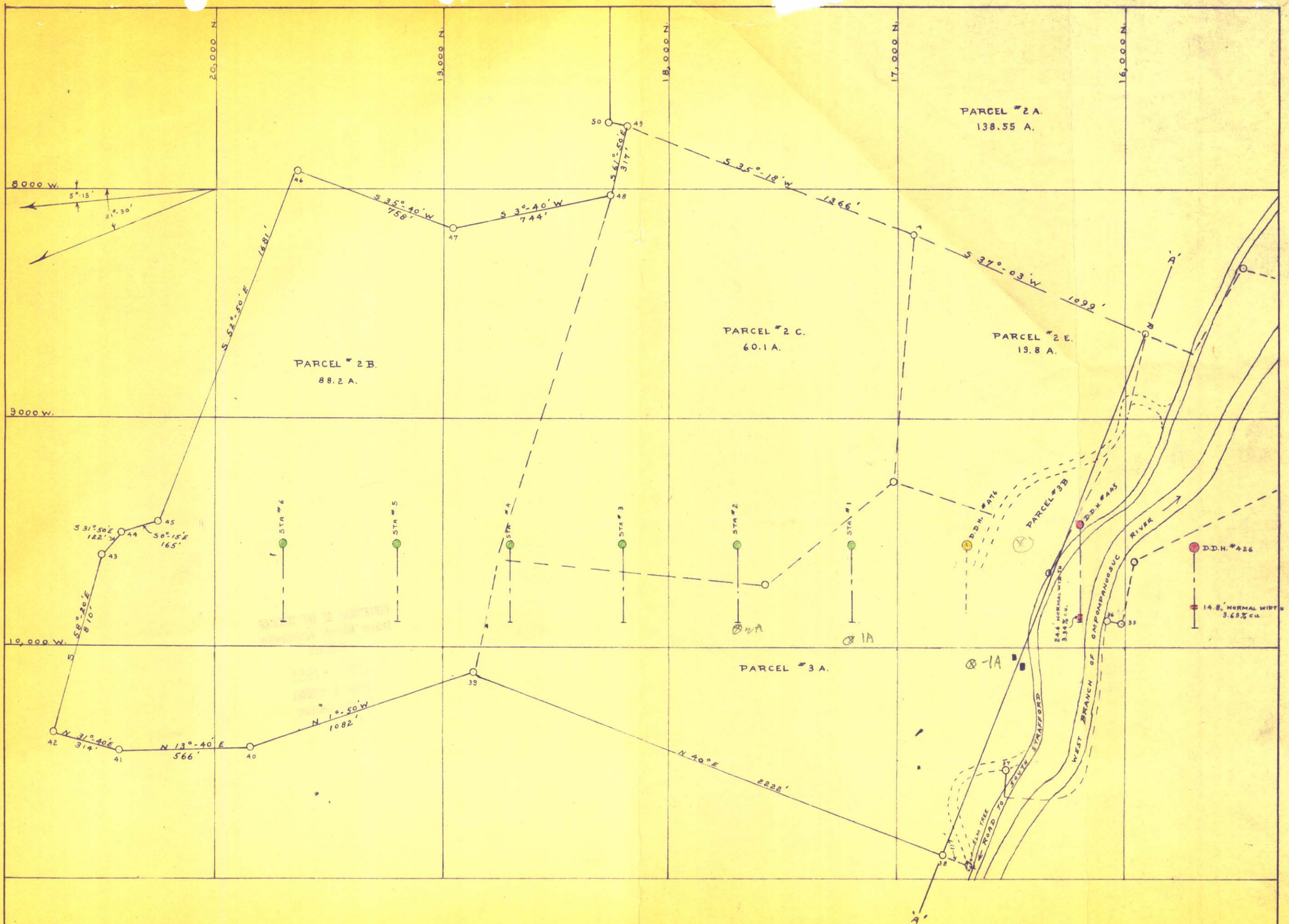
DIAMOND DRILL 'STA', ON POMPANOOSUC RIVER.

SCALE: 1" = 40'

DEC. 1950

R. D. ATKINS

VT. COPPER CO. INC.
So. STRAFFORD, VT.



LEGEND

DIAMOND DRILL HOLE-DRILL'G AT PRESENT

COMPLETED DIAMOND DRILL HOLES

PROPOSED DIAMOND DRILL STATIONS

PLAN OF LAND
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SOUTH STRAFFORD, VERMONT.

SCALE: 1 INCH = 400 FT. MAY. 29, 1951

R. D. ATKINS.