DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE E 645 DMEA NO. 3143

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(Withdrawn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

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

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

Left Side

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

Right Side

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

✓ Final Field Team Report (Tab)
✓ Operator's Final Report
(2R) ✓ Interim Reports - folders 2-3-4
(2R) ✓ Operator's monthly reports and all attachments ~~(latest on top)~~ folders 2, 3, 4
✓ On-site Exam Report(s) (Tab)
(4) Settlement Sheets

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

Left Side

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

✓ Folder No. 3: ~~Maps~~ 104 (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

✓ Folder No. 4: ~~Settlement Sheets~~ 104

Folder No. 5: Drill Logs

Right Side

Folders 2, 3 + 4

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

9776

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

ROYALTY AUDIT CERTIFICATE

I have examined the records and sales documents pertaining to the sale of cobalt, copper and incidental gold and silver for the period of December 9, 1953 to June 20, 1958, by:

THE CALERA MINING COMPANY
Cobalt, Idaho

produced from the Blackbird Mine, located near Cobalt, in Lemhi County, State of Idaho, under the terms of Contract No. Idm F 645, Docket No. DMEA 3143 (cobalt-copper), dated December 9, 1953, including Amendments Nos. 1 to 4 inclusive.

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

The audit established the net value of the cobalt and copper (copper included the incidental gold and silver) contained in the mine-run ore for this period to be $2,499,311.00. Royalty due the United States Government at the contract rate of five percent to be $124,965.56. Royalty paid and balance due are as follows:

Total Royalty Due	$124,965.56
Total Royalty Paid	124,965.56
Balance Royalty Due	—0—

August 5, 1958

C. A. Turner - Auditor.

A Certificate of Discovery or Development dated September 16, 1957 established and fixed the royalty due the United States Government on production and sales of ore mined from the lands described in Annex I of the Contract for the period of 13 years (Amendment No. 4 of Contract), or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first.

Ore subject to DMFA royalty from the Blacktail stopes and Blacktail open pit are commingled with ores not subject to DMFA royalty from the Dandy stopes, Chicago stopes and the Brown Bear stopes. Each lot of ore is carefully weighed and sampled before the commingling and the processing in the Blackbird Mill, and the refining at the Garfield Refinery. The Blackbird mine and mill and the Garfield refinery are an integrated operation. The concentrates produced from the commingled ores have lost their identity as to the source of the ores.

Royalties are computed on the metal content of the mine-run ore rather than the sales of metals. The values of the metals in the mine-run ore subject to DMFA royalty, are determined and computed by taking into consideration the total weight of the production subject to DMFA royalty, the metal content of the ore (as indicated by the samples taken), the market price of cobalt, copper, silver and gold, the estimated percentage of mill recovery, and the estimated smelter returns.

At the time the Blacktail ore body came into production, the Executive Officer and the Operator in conference agreed that, because of the integrated operation, royalty repayments would be based on the cobalt and copper contents (copper to include the incidental gold and silver) of the mine-run ore. The values fixed and subject to DMFA royalty were cobalt $1.35 per pound and copper $.30 per pound, which were based on the market value at that time. Values established at the time of the conference have been decreased as the market value has decreased.

The Company maintains a complete and comprehensive set of records to cover the various departmentalized operations of the mine, mill and the exploration project, consisting of general ledger, cash books, voucher distribution records and sales records, all of which are properly supported by the necessary items and records of original entry. The records pertaining to production, sales and DMFA royalties are considered by this auditor to be adequate.

A prior royalty audit has not been made of this Contract.

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DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

ROYALTY AUDIT REPORT

I INTRODUCTION

On June 24, 1958, an audit was made of the production, sales and the royalty accounts and records of:

THE CALERA MINING COMPANY
Cobalt, Idaho

pertaining to the production and sales of cobalt, copper and incidental gold and silver for the period of December 9, 1953 to June 20, 1958, produced from the Blackbird Mine, located near Cobalt, in Lemhi County, State of Idaho, on which royalties are due the United States Government under the terms of Exploration Project Contract No. Idm F 645, Docket No. DMFA 3143, dated December 9, 1953, including Amendments Nos. 1 to 4 inclusive.

The records are maintained by Mr. G. B. Deacon, chief accountant, under the supervision of Mr. E. B. Douglas, general manager, and are located at the Company office near the mine.

During the on-site audit the following representatives of the Company and the United States Bureau of Mines were present and consulted as necessary:

Mr. E. B. Douglas	General Manager
Mr. G. B. Deacon	Chief Accountant
Mr. John D. Bardill	Metalurgist U. S. Bureau of Mines

The cooperation of all concerned greatly facilitated the audit.

II GENERAL INFORMATION

The exploration project contract provided for exploration costs of $407,340.00 with Government participation on a 70 percent basis being $285,138.00. However, the contract was terminated by a mutual Termination Agreement dated January 2, 1957 having an effective date of termination as of December 9, 1956. A Report of Review dated August 15, 1957, issued by C. A. Turner, DMFA Auditor, indicated the accepted costs of exploration to be $265,519.83 with the Government's contribution on a 70 percent basis being $185,863.88. The Operator is conducting an integrated mining and milling operation of ore subject to DMFA royalty and ore not subject to DMFA royalty.

III SCOPE OF AUDIT AND FINDINGS

A. CONFERENCE WITH THE EXAMINING ENGINEER

A conference with the examining engineer, Mr. John D. Bardill, Metallurgist, United States Bureau of Mines, disclosed the following:

(a) The Operator does stockpile ore subject to royalty repayment.

The Operator has contracted the open pit mining to the Isbell Construction Co. of Reno, Nevada, whose mining operations have produced more ore than the mill has been able to process. At the time of the audit, a temporary stockpile of 20,741 tons of ore was on hand to be milled.

The stockpiled open pit ore is piled in a separate pile and the production record's control is considered adequate by the examining engineer and this auditor.

(b) The Operator does commingle production subject to DMEA royalties with exempt production.

The allocation of commingled ore subject to DMEA royalties is considered by the examining engineer and this auditor to be equitable.

(c) The Operator does stockpile low-grade ore from the Blacktail open pit, which at the present low prices is submarginal. The present stockpile of 177,844 tons is not expected to have any potential value within the royalty payment period.

It is the opinion of the examining engineer and this auditor that the records maintained by the Operator are adequate to protect the Government's interest.

(d) Assay controls are deemed adequate.

(e) The manner of disposing of production is considered as giving the Government its fair royalty return.

(f) Periodic examinations by the examining engineers indicate that the Operator is properly reporting his production of ore subject to DMEA royalty.

(g) The Operator does not buy from or sell to other operators.

B. AUDIT OF SETTLEMENT SHEETS

A considerable amount of preaudit work was accomplished in the DMTA Office, Region I, Spokane, Washington, prior to the on-site audit. This consisted of a recomputation of the detailed settlement sheets. This information was tabulated, and a reconciliation was made with the amounts of royalty receipts indicated by the records of the Finance Officer. These tabulations are filed as a part of my audit working papers. A summary analysis of these statements is included in Section IV of this audit report.

The on-site audit included a comparison and reconciliation of the data compiled during the pre-audit work, with the Operator's production records, sales records and general records in the Company office located at the mine.

The Operator sold the cobalt concentrates to the Garfield Division of the Company, Garfield, Utah; and the copper concentrates to the American Smelting and Refining Co., Tacoma, Washington.

IV CONCLUSIONS AND RECOMMENDATIONS

A summary analysis of the Operator's production of cobalt and copper (copper including the incidental gold and silver), from the mine-run ore produced from the Blackteil ore body of the Blackbird Mine, for the period of December 9, 1953 to May 31, 1958 on which royalty payment was received by the Finance Officer June 20, 1958 follows:

The audit has confirmed the accuracy and propriety of the royalty payments received by the Regional Office for the period under dudit, December 9, 1953 to June 20, 1958.

At the conclusion of the audit, the findings were discussed with Mr. G. B. Deacon, chief accountant for The Calera Mining Co.

The audit report and findings were discussed with Mr. A. F. Weissenborn, Executive Officer, DMEA Field Team, Region I August 11, 1958.

August 5, 1958

C. A. Turner

C. A. Turner - Auditor

SUMMARY OF ROYALTY PAID ON PRODUCTION TO JUNE 20, 1958

FOR THE PERIOD OF DECEMBER 9, 1953 TO JUNE 20, 1958

Sale of Cobalt to The Calera Mining Co.
Garfield Division, Garfield, Utah

	Tons	Grade
Mine-run ore		
Underground Ore	47,342	.55219%
Open pit ore	83,957	.45566%

Metal Content - Cobalt	Tons	Value
Underground	261.41816	$581,260.44
Open pit	382.56626	803,364.63
Total	643.98442	$1,384,625.07

Royalty Paid	$1,384,625.07	@ 5%	$ 69,231.26

Sale of Copper to The American Smelting and Refining Co.
Tacoma, Washington

Mine-run Ore	Tons	Grade
Underground Ore	47,342	2.24394%
Open pit ore	83,957	2.21650%

Metal Content - Copper	Tons	Value
Underground	1062.32732	$ 473,069.68
Open pit	1860.91223	641,616.25
Total	2923.23955	$1,114,685.93

Royalty Paid	$1,114,685.93	@ 5%	$ 55,734.30
Total Production and Royalty Paid	$2,499,311.00	@ 5%	$124,965.56

Check Sheet of Examining Engineer

Operator's Name Calera Mining Company

Address Cobalt, Idaho

Exploration Contract No. Idm-E645 Docket No. DMEA-3143

	Check One Yes	No
1. (a) Does the Operator stockpile ore subject to royalty repayment?	x	
(b) If so, is segregation and identification procedure adequate?	x	
2. (a) Does Operator commingle production subject to DMEA royalties with exempt production?	x	
(b) If so, do you consider the allocation of the commingled production equitable?	x	
3. (a) Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		x
(b) If so, are adequate records maintained on such material to protect the Government's interest?		
4. Do you consider the assay controls in effect are adequate?	x	
5. Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	x	
6. Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	x	
7. Does the Operator buy from or sell to other Operators?		x

8. Comment on any item 2 (b) to 6 if answer is No.

3. (a) Operator is stockpiling low-grade ores from the Blacktail open pit but at the present low prices they are submarginal. The loan should be repaid in several months so stockpiling of these low-grade ores is not a factor.

John D. Bardill
Mining Engineer

Date June 24, 1958

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DMEA Form 7
(12-56)

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Date	Surname	Code
8-26	Holt	400
8-26	Martin	400
9/4	Lark	140
9/13	Tallant	800
9/16	Selfridge	130
9/16	Lamb	130
9/16	Kilsgaard	130
		110
		100
		220
		400

Appd Sch. On

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

To: Calera Mining Company
Cobalt, Idaho

Pursuant to the provisions of Exploration Project Contract No. Idm-E645, executed December 9, 1953, (Docket No. DMEA 3143) as amended, hereinafter called the "Contract", between Calera Mining Company, a corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's royalty on production and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that a discovery or development from which production may be made has resulted from the exploration.

The nature of said discovery or development is described broadly or indicated as follows:

Bulldozer trenching, surface and underground diamond core drilling, and drifting and crosscutting on the 7400 level of the Blackbird mine, have indicated the presence of cobalt-copper ores, occurring in veins and lenses in fractured and sheared zones traversing quartzites and schists.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals
Exploration Administration

Dated: September 16, 1957

SPHOLT:foc 8-29-57
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. H. W. Davis, USBM
C.A. Fredell, GSA

F. D. Lamb, USBM
Messrs. T. H. Kiilsgaard, USGS
Finance Office
Audit Div.
Code 110

8623

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

The Calera Mining Company
Cobalt, Idaho

pertaining to Exploration Project Contract No. Idm-2645, Docket No. DMEA-3143, dated December 9, 1953, including Amendments Nos. 1 to 4, inclusive, and a Termination Agreement dated January 2, 1957, with an effective date of December 9, 1956, for the period of December 9, 1953 to December 9, 1956, covering a project for the exploration of cobalt and copper on property known as the Blackbird Mine, located in Lemhi County, State of Idaho.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Government representative who visited and examined the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

(a) The accepted costs ($143,505.12) of all work incurred under a contract provision for payment by the Government on the basis of agreed unit costs of units of work actually performed were covered by an interim Audit Report and Audit Certificate, dated June 17, 1955, issued by C. A. Turner, DMEA Auditor, and

(b) the remaining portion ($122,014.71) of the costs incurred were under a contract provision for payment by the Government on the basis of agreed unit costs of units of work actually performed.

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

Total cost as billed by Contractor	$265,519.83
Exceptions	-0-
Accepted cost	$265,519.83

The contract calls for a 70 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of One hundred eighty-five thousand eight hundred sixty three and 88/100 Dollars

--$185,863.88--

is considered valid and proper, provided 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.

C. A. Turner

August 15, 1957

C. A. Turner, Auditor

Schedule of Work Completed

Calera Mining Company | **DMEA-3143** | **Idm-E645**

Agreed Unit Costs

Stage I

Trenching	864	Hrs.	@ $11.878	$10,262.59	62554
Surface Diamond Drilling	8576.5	ft.	@ 6.96	59,692.44	
Reaming and Cementing	1145	ft.	@ 2.50	2,862.50	
Assays	2346		@ 3.00	7,038.00	
Underground Diamond Drilling	612	ft.	@ 3.3822	2,069.91	
Total Stage I					$ 81,925.44

Stage II

Drifting and Crosscutting	3369	ft.	@ $35.535	$119,717.45	
Timber - Normal	2195.3	ft.	@ 7.00	15,367.10	
Timber - Heavy	750	ft.	@ 7.00	5,250.00	
Timber - Spiling	500	ft.	@ 20.00	10,000.00	34298.58
Timber - Framing	447	ft.	@ 5.48	2,449.56	
Timber - Rock Bolts	348		@ 3.54	1,231.92	
Underground Diamond Drilling	6671.5	ft.	@ 3.3822	22,564.36	
Assays	2338		@ 3.00	7,014.00	
Total Stage II					183,594.39

Total $265,519.83

August 15, 1957

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C. A. Turner, Auditor

-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 6/27/55

REFERRED TO:

1. ~~Mr. Hittendorf~~
2. ~~Mr. Johnson~~
3. ~~Mr. Selfridge~~
4. ~~Mr. Griswold~~ Mr. Martin

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	..... Referring to .....
..... Conference	..... Reply for signature of .....
..... Consideration	..... Rewriting
4 Filing	..... Signature
..... Instructions	..... Suggestions
..... Investigation	X Your information
..... Initials	
..... Mailing	
..... Previous correspondence	

REMARKS: Note difference between actual & contract that exists for [illegible]

Check (X) before the items needing attention.

J. L. Chambers
Initials of sender.

GPO 16—63815-1

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

INTERIM AUDIT CERTIFICATE

I have examined the records and transactions of the:

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JUN 1 1955

Calera Mining Company
Cobalt, Idaho

pertaining to Exploration Project Contract No. Idm-[illegible]5, Docket No. DMEA-3143, dated December 9, 1953, including Amendment No. 1, covering a project for the exploration of cobalt and copper on property known as the Blackbird Mine, located in Lemhi County, State of Idaho, for the period of December 9, 1953, to March 31, 1955, inclusive.

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	$143,505.12
Less: Salvage proceeds	None
Net claimed cost	143,505.12
Exceptions (see Audit Report)	None
Total Accepted Cost	$143,505.12

The contract calls for a 70 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of One hundred thousand four hundred fifty-three and 58/100 Dollars,

$100,453.58

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.

C. A. Turner, Auditor

June 17, 1955

INTERIM AUDIT REPORT

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I. INTRODUCTION

During the period of May 10, 1955, to May 14, 1955, inclusive, an interim audit (covering operations for the period of December 9, 1953, to March 31, 1955,) was made of the records and transactions pertaining to Exploration Project Contract No. Idm-8645, Docket No. DMRA-3143, dated December 9, 1953, including Amendment No. 1 with the:

Calera Mining Company
Cobalt, Idaho

covering a project for the exploration of cobalt and copper on property known as the Blackbird Mine, located in Lemhi County, State of Idaho.

The original accounting records under this contract are maintained under the direction of E. B. Douglas, general manager, are in the custody of G. B. Deacon, chief accountant, and Joe Stanafield, accountant, and are located in the mine office near the mine, which is approximately 9 miles from Cobalt, Idaho.

Garvin Young, mine superintendent, Bill O'Neal, mine foreman, and Don McPherson, chief warehouseman, were also consulted as required during the course of the audit. All employees consulted were most cooperative at all times.

A. L. Service, mining engineer, Bureau of Mines, Region I, N. W. District, as representative of the DMRA Field Team accompanied the auditor and assisted in the necessary analysis of payrolls and operating materials and supplies. Mr. Service was also available for consultation as needed.

The actual on-site audit was preceded by considerable pre-audit analysis and audit preparatory work in Spokane, Washington, office of the DMRA. A considerable portion of the summarizing of the audit findings was completed subsequent to the actual on-site audit.

II. GENERAL INFORMATION ON RECORDS

The Company maintains a complete and comprehensive set of records to cover the various departmentalized operations of the mine, mill, and the exploration project, consisting of general ledger, cash books, and voucher distribution records, all of which are properly supported by the necessary items and records of original entry, from which the monthly cost and statistical statements are prepared of each department, for the Company's management and department heads.

The entire mining operation prior to January 1, 1955, was considered by the Company to be exploration and development work. On January 1,

1955, the mine was put on a production basis with the costs charged to mining operations and the exploration project contract as applicable.

A subsidiary ledger has been maintained in which the actual costs of the exploration project contract have been recorded. Analysis of these costs follows in Appendix A attached to this report wherein a comparison of the Operator's actual costs of units of work performed is compared with the Unit Costs claimed by the Operator on the Operator's Monthly Report and Voucher, Form MF-104.

The Company's records are audited annually by Smith, Davis, and Wills, certified public accountants, New York, New York.

III. SCOPE OF AUDIT AND FINDINGS

The first stage of this audit was limited to ascertaining the accuracy, propriety, and validity of the costs shown in the "Totals to Date" column of the Operator's Monthly Report and Voucher, Form MF-104, for the month of March, 1955.

All of the costs claimed by the Operator cover work performed on the basis of agreed estimated costs of units of work actually performed. The basic portion of this audit report refers only to the unit costs claimed.

Comments and findings with reference to the Operator's actual costs incurred on the work performed on the basis of agreed estimated cost of units of work actually performed will be presented in Appendix A attached to this report.

(1) Agreed Unit Costs

The Operator's claim under the contract provision for contribution by the Government on the basis of agreed estimated cost of units of work performed consisted of:

Stage I					
Trenching	864 Hours	@	$11.878	$10,262.59	
Diamond Drilling					
Surface	8576.5 Feet	@	6.96	59,692.44	
Underground	612.0 Feet	@	3.3822	2,069.91	
Reaming and Cementing	1145 Feet	@	2.50	2,862.50	
Assays	2346 Assays	@	3.00	7,038.00	
Total Stage I					$81,925.44

Stage II					
Drifting	1238 Feet	@	$35.535	$43,992.34	
Timbering					
Normal	994.3 Feet	@	7.00	6,960.10	
Heavy	313.5 Feet	@	7.00	2,194.50	
Spiling	297.0 Feet	@	20.00	5,940.00	
Framing	210 Sets	@	5.48	1,150.80	
Diamond Drilling					
Underground	155.5 Feet	@	3.3822	525.94	
Assays	272 Assays	@	3.00	816.00	
Total Stage II					$61,579.68
Total Accepted Costs					$143,505.12

The "Allowable Maximum" of 864 Hours of Trenching was not exceeded.

The following catagories of cost were not applicable to this contract:

(2) Labor and Supervision
(3) Operating Materials and Supplies
(4) Operating Equipment
(5) Initial Rehabilitation and Repairs
(6) New Buildings, Improvements, etc.
(7) Miscellaneous
(8) Contingencies

Observations

The Calera Mining Company's Blackbird mine is one of the several mines located in the United States, Canada, and Mexico which are owned and operated by the Howe Sound Company, 730 Fifth Avenue, New York, New York.

The Calera Mining Company's Blackbird mine was prior to January 1, 1955, considered to be in a state of exploration and development. Mining and milling operations since January 1, 1955, are considered to be on a production basis. Mill concentrates are being shipped via trucks to Salt Lake City, Utah, for final refining.

IV. CONCLUSIONS

The audit disclosed that all costs charged to this project, as itemized in section I of this report, are reasonable and proper under the terms of the contract.

The adjustments between "Items of Cost" as shown on March 31, 1955, Form NF-104, the disallowances, and the accepted costs as disclosed by this audit are summarized as follows:

	Totals March 31, 1955 MF-104	Corrected Distribution	Disallowed by Audit	Accepted Cost Stage I	Accepted Cost Stage II
(1) Independent Contracts:	$	$	$	$	$
Trenching	10,262.59	-	-	10,262.59	
Diamond Drilling					
Surface	59,692.44	-	-	59,692.44	
Underground	2,069.91	-	-	2,069.91	
Reaming and Cementing	2,862.50	-	-	2,862.50	
Assays	7,038.00	-	-	7,038.00	
Drifting	43,992.34	-	-		43,992.34
Timbering					
Normal	6,960.10	-	-		6,960.10
Heavy	2,194.50	-	-		2,194.50
Spiling	5,940.00	-	-		5,940.00
Framing	1,150.80	-	-		1,150.80
Diamond Drilling					
Underground	525.94	-	-		525.94
Assays	816.00	-	-		816.00
(2) Labor and Supervision	-	-	-	-	-
(3) Operating Matls. & Supplies	-	-	-	-	-
(4) Operating Equipment	-	-	-	-	-
(5) Initial Rehab. & Repairs	-	-	-	-	-
(6) New Bldgs., Improvements, etc.	-	-	-	-	-
(7) Miscellaneous	-	-	-	-	-
(8) Contingencies	-	-	-	-	-
Totals	$ 143,505.12	$ -	$ -	$ 81,925.44	$ 61,579.68

The contract designates one "Allowable Maximum" of trenching not in excess of 8[illegible] hours, which was not exceeded.

The exploration work specified in the contract is designated in units of the various kinds of work to be completed. A summary of the units of work authorized by the contract, units of work completed, and units of work remaining to be completed follows:

	Units Specified in Contract			Units Completed			Units Remaining		
Stage I									
Trenching	864* Hours	@ $ 11.878	$ 10,262.99	864* Hours	@ $ 11.878	$ 10,262.99	-	$ -	$ -
Diamond Drilling									
Surface	8,576.5 Feet	@ 6.96	59,692.44	8,576.5 Feet	@ 6.96	59,692.44	-	-	-
Underground	664.38 Feet	@ 3.3822	2,247.06	612.0 Feet	@ 3.3822	2,069.91	52.38 Feet	@ 3.3822	177.15
Reaming and Cementing	1,145.0 Feet	@ 2.50	2,862.50	1,145.0 Feet	@ 2.50	2,862.50	-	-	-
Assays	3,100 Assays	@ 3.00	9,300.00	2,346 Assays	@ 3.00	7,038.00	754 Assays	@ 3.00	2,262.00
Stage II									
Drifting & Crosscutting	6,000.0 Feet	@ 35.535	213,210.00	1,238.0 Feet	@ 35.535	43,992.34	4,762.0 Feet	@ 35.535	169,217.66
Timbering									
Normal	5,000.0 Feet	@ 7.00	35,000.00	994.3 Feet	@ 7.00	6,960.10	4,005.7 Feet	@ 7.00	28,039.90
Heavy	750.0 Feet	@ 7.00	5,250.00	313.5 Feet	@ 7.00	2,194.50	436.5 Feet	@ 7.00	3,055.50
Spiling	500.0 Feet	@ 20.00	10,000.00	297.0 Feet	@ 20.00	5,940.00	203.0 Feet	@ 20.00	4,060.00
Framing	1,150 Sets	@ 5.48	6,302.00	210 Sets	@ 5.48	1,150.80	940 Sets	@ 5.48	5,151.20
Diamond Drilling									
Underground	10,500 Feet	@ 3.3822	35,513.00	155.5 Feet	@ 3.3822	525.94	10,344.5 Feet	@ 3.3822	34,987.06
Assays	5,900 Assays	@ 3.00	17,700.00	272 Assays	@ 3.00	816.00	5,628 Assays	@ 3.00	16,884.00
Totals			$ 407,139.99			$ 143,905.12			$ 263,834.47

*Allowable Maximum

At the conclusion of the audit on May 14, 1955, the findings were discussed with G. B. Deacon, chief accountant, and Joe Stansfield, accountant. R. B. Douglas, general manager, was at this time temporarily away from the mine.

The final summarization of facts was discussed with A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I, N. W. District, on June 17, 1955.

C. A. Turner, Auditor

June 17, 1955

APPENDIX A

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Operator's Costs of Units of Work Completed

Exploration Project Contract No. Idm-2045, Docket No. DMEA-3143, provides that the Government will contribute to the costs of the work specified in the contract on the basis of agreed unit costs as they accrue in lieu of actual costs, for a period of 1 year from the date of the contract, and thereafter unless and until the Government, at its option, notifies the Operator that the Government will contribute to the incompleted portions of any remaining work to be done on the basis of actual costs as set forth in the contract.

This audit of actual costs of units of work completed was made to enable the Government to exercise its option to convert to actual costs if it is determined to be to the Government's advantage to do so.

Prior to the date of the on-site audit the Operator submitted to the DMEA Field Team, Region I, N. W. District, a statement of the actual costs to March 31, 1955, of the exploration project work.

An audit and analysis of the costs pertaining to the Operator's actual costs of units of work completed was made. This audit consisted of: (1) analysis of the costs of work performed by independent contractors; (2) analysis of costs claimed on labor, supervisory, and technical services including rates of pay per shift, per foot, and bonuses; (3) a partial analysis of costs representing materials and supplies and miscellaneous stores, and certain generations based on actual at the face drilling hours; (4) verification of payroll taxes and liability insurance based on the labor distributions; (5) verification by test checks on prorating factors based on at the face drilling hours; and (6) a verification of the total of the exploration project costs.

<u>The Operator's records do not provide an adequate breakdown of labor and other costs between manual timbering, heavy timbering, spiling and framing</u>.

<u>(1) Independent Contracts:</u>

The Nichols Thompson Drilling Company of Boise, Idaho, performed drilling on the exploration project as well as the Operator's other mining activities.

The drilling costs were verified by: (1) examination of the drilling contract between the Operator and the Nichols Thompson Drilling Company; (2) examination of invoices and drill logs submitted by the drilling company; and (3) examination of voucher checks rendered in payment of the drilling.

Drilling performance and footages were verified by the [illegible] Engineer, A. L. Service, in charge of the project.

Independent contract costs applicable to diamond drilling were found to be as follows:

Nichols Thompson Drilling Company:

			$	$
Surface drilling	8,576.5 Feet	@	5.53	47,396.15
Underground drilling	767.5 Feet	@	3.50	2,686.25
Casings left in hole	555.0 Feet	@	.70	388.60
Reaming and cementing	1,145.0 Feet	@	2.50	2,861.25
Total	9,144.0 Feet	@	5.71	$51,332.25

(See attached Schedule No. 1.)

(2) Labor and Supervision:

Labor is recorded by a daily time card made out by the employee and approved by the shift boss. The time card includes date and shift worked, hours worked and contract work completed, rates of pay and the level or location in which the work was performed. The approved time card goes to the timekeeper who accumulates the employees' earnings for the period. Costs are recorded in the cost ledger after the cards have been processed by the distribution clerk and distributions journalized into the voucher record.

Payrolls are for the periods of 1st to 15th and 16th to end of month. Paydays are the 8th and 23rd of the month.

An audit and analysis was made of payroll charges against the exploration project for the months of May 1954, October 1954, and February 1955. This included checking the daily time cards, distribution record, and voucher distributions. Rates used were examined and found to be in agreement with those listed in the union contract. Computations and distributions were test checked to the extent of 50 percent for the months of May and October 1954 and February 1955. Payroll charges for the balance of the period under review were checked only as to totals and distribution charges made to the exploration project.

Labor as charged to the exploration project during the period of May and October 1954 and February 1955 was paid at the following shift rates:

Rates Per Shift		February 1, 1954 to June 30, 1954	July 1, 1954 to March 31, 1955
		$	$
Surface Mine Labor		13.04	13.44
Miner		13.44	13.84
Timberman		15.04	15.44
Timberman-Helper		13.84	14.24
Trackman		14.24	14.64
Trackman-Helper		13.84	14.24
Compressorman		13.84	14.24
Miner-Stope		14.24	14.64
Powderman		14.24	14.64
Nipper		13.84	14.24
Pumpman		14.64	15.04
Hoistman, Single Drum		14.64	15.04
Hoistman, Double Drum		16.24	16.64
Cager		14.64	15.04
Locomotive Operator		14.64	15.04
Shift Boss	Per Month	466.00 - 475.00	475.00 - 490.00
	Per Month	520.00 - 535.00	535.00 - 550.00

These rates with the exception of Shift Boss were in conformity with the contract between the Operator and the International Union of Mine, Mill and Smelter Workers Local No. 911. This contract also provides shift premiums, vacations with pay, health and welfare plan, and paid holidays.

Bonuses are paid miners who work on a footage basis and work accomplished basis in lieu of daily shift basis.

Contract Rates of Pay:

	Without Timber	Timbered
Drill Out	$ 2.40	$ 3.15
Load & Blast	.60	.60
Muck Out	3.50	4.75
Cost per foot	$ 6.50	$ 8.50
Stand Rail per foot	.25	.25
Ties each	.30	.30
Water Line per foot	.05	.05
Air Line per foot	.10	.10
Stand Ditch Post	-	3.60
Stand End Post	-	3.60
Lagging per foot		.15
Place Caps	-	1.50
Bridge each		3.00
Vent Pipe per foot	.10	.10

Contract rates of pay are not a part of the Union Agreement.

These contract rates of pay have not been changed since they were established several years ago when a miner was paid the daily rate of $12.31 per shift.

Bonus calculations are made by deducting from the miner's total contract earnings the amount he would have earned if paid at the rate of $12.31 per day instead of the current wage rate per day. ?

In bad ground miners are paid pay (at the current rate) plus $10.00 per shift bonus.

Labor charges applicable to the exploration project were found to be as follows:

	$
Diamond Drilling	190.34
Trenching	4,493.43
Drifting	31,165.68
Timbering	13,285.16
Assaying	1,170.20
Total	$ 50,315.81

See attached Schedules Nos. 1 to 5, inc.

Timbering costs include the costs applicable to normal timbering, heavy timbering, fressing, and spiling.

Supervision:

The Operator charged to his exploration project costs, the time devoted to the project by the engineers and geologists as follows:

	$
Engineers	2,182.58
Geologists	5,699.03
Total	$ 7,881.61

Only the actual time spent on the project was charged to the project costs; however, in the actual cost section of the contract an allowable maximum of $500.00 per month is specified for supervision. A deletion of $881.61 is made to bring the actual project costs in line with the costs allowed in the event that the contract is converted to an actual cost basis.

Supervision costs were prorated to the various operations on the basis of labor charges with the exceptions of diamond drilling which was charged at the rate of $0.125 per foot and assaying which was not charged any supervision.

The allocation of supervision expense to the Operator's Actual Costs of Units was discussed with BMSA Engineers, who after taking into

consideration the operation as a whole and the various other operations affected suggested an arbitrary charge of $0.125 per foot to drilling and no charge to assaying. While the engineers feel that this charge is low it is known that the Operator is spending more than the Allowable Maximum of $500.00 per month for supervision.

Supervision was distributed as follows:

	Labor	Percent	Distribution of Supervision
Trenching	$ 4,493.43	9.180	$ 535.38
Drifting	31,168.68	63.678	3,713.70
Timbering	13,285.16	27.142	1,582.92
	$ 48,947.27	100.000	5,832.00
Diamond Drilling 9,344 Feet @ 12½¢/Ft.	190.34		1,168.00
Assaying No Charge	1,178.20		-
Total	$ 50,315.81		$ 7,000.00

See attached Schedules Nos. 1 to 5, inc.

(3) Operating Materials and Supplies:

A stores account and warehouse facilities are maintained by the Operator to supply the mining and milling operations as well as the exploration project with materials and supplies as needed. Purchases are all charged to the stores account with the few exceptions of items charged direct to the operations.

A complete set of store card records is maintained by Don Mc Pherson, chief warehousemen, upon which a record is made of dates, purchases, issues and the department issued to for consumption.

Supplies and materials are issued to the Operator's mining and milling operations and the exploration project at the actual cost to the Operator. The expense of maintaining the warehouse and the warehouse labor as well as the salary of Mr. McPherson, chief warehousemen, is not considered by the Operator as an additional cost of the supplies but an overhead item of expense. Warehouse expense is charged to Mining Operations one-third, Milling Operations two-thirds, Exploration Project none.

Supplies are all charged directly to the department in which they are used with the following exceptions: (1) Drill supplies, (2) Steel and Bits, (3) Air, and (4) Air and Water lines. Supplies consumed in these four exceptions are prorated on the basis of actual at the face drilling hours.

Audit of the materials and supplies consisted of checking the entries in the cost ledger back to the books and records of original entry which included the journal and stores requisitions, and occasional recomputations of extensions. Stores cards covering large items such as track and timber were examined for a three months period to determine the methods used to record supplies purchased and supplies consumed in the various mining, milling and exploration project activities.

Cost ledger balances were compared with the monthly operating statement, which was prepared for the use of the management and the department heads.

Supplies were charged to the exploration project at the same price used on the Operator's other operations without any markup.

Operating materials and supplies were found to be as follows:

Diamond Drilling:				
Drill supplies			$ 81.37	
Trenching:				
Cat supplies, fuel oil and lubricants		1.3	3,709.89	
Drifting:				
Explosives	2,670.77	2.16		
Track	1,983.56	1.60		
Ventilation pipe and supplies	1,179.89	.95		
Air and water lines	3,[illegible].53	2.48		
Power feeder	1,[illegible].90	1.09		
Air supplies	709.23	.57		
Drill steel and bits	[illegible].11	.68		
Drill supplies	609.09	.49		
Blasting supplies	1,[illegible]	.56		
Battery Maintenance	338.08	.27		
Miscellaneous	[illegible].51	.07		
			13,892.91	11.22
Timbering:				
Timber and supplies			8,051.90	6.50
Assaying			846.47	
Total			$ [illegible]	

See attached Schedules Nos. 1 to 5, inc.

(b) Operating Equipment:

Rental:

This category of cost not applicable to this contract.

Purchases:

This category of cost not applicable to this contract.

Depreciation:

The actual cost section of the contract specifies equipment to be depreciated and the rates of depreciation to be used in case the contract is converted to an actual cost basis in lieu of a unit cost basis. These rates of depreciation were used to determine the Operator's actual costs for the period under review.

To be furnished by Operator:

		Value
1	5-Ton Plymouth Locomotive	$ 1,257.05
2	Kimpo 128 Mucking Machines	5,674.40
15	C. S. Cars - 30 cubic foot Rocker Dump Cars	3,660.00
2	Mancha 1½-ton locomotives	6,698.96
4	Batteries	5,366.80
2	Charging panels	1,821.96
2	A.M.B. car transfers	908.00
1	Buffalo Forge Blower, 15 H.P.	375.00
1	Clarage Blower, 7½ H.P.	275.00
	Starting Equipment for blowers	175.00
2	Timber trucks	254.78
4	Jackleg type pusher drills @ $503.00/ea.	2,020.00
4	Line oilers @ $17.54/ea.	70.16
1	8x8 Shaper	670.00
1	Water pump	153.02
1	Track jack and 1 rail bender	90.00
	Total	$ 28,[illegible]

An allowance of $595.00 per month, which is an allowable maximum, is specified in the contract. Depreciation for the period of February 1, 1954, to March 31, 1955, is:

14 Months @ $595.00 $8,330.00

Depreciation is allocated to the various exploration project activities on the basis of labor used on each activity as follows:

	Labor	Percent	Depreciation
	$		$
Diamond Drilling	190.34	.3871	32.24
Trenching	4,493.43	9.1445	761.74
Drifting	31,168.[illegible]	63.4314	5,283.84
Timbering	13,485.26	27.4370	2,282.18
Total	$49,137.01	100.0000	$8,330.00
Assaying	1,178.00		None
Total	$50,315.01		$8,330.00

4.27 / 11.
1.82

See attached Schedules Nos. 1 to 5, inc.

The assaying laboratory is located in the mill and was not charged any depreciation.

(5) Initial Rehabilitation and Repairs:

This category of cost not applicable to this contract.

(6) New Buildings, Improvements, etc.:

This category of cost not applicable to this contract.

(7) Miscellaneous:

Payroll Taxes:

Payroll taxes were allocated to the exploration project payroll in the same ratio as the exploration project payroll was to the Operator's entire payroll, as follows:

	Payroll	Percent
Exploration Project Payroll	$ 57,315.81	3.3511
Balance of Payroll	1,653,097.44	96.6489
Total Payroll Jan. 1, 1954, to Mar. 31, 1955	$1,710,413.25	100.000

Payroll tax rates were found to be as follows:

	Percent
F.I.C.A.	2.0
Idaho Unemployment Insurance	2.1
Federal Unemployment Insurance	.3
Total	4.4

Examination of the Operator's reports:
State of Idaho - Employer's Contribution Report
Identification No. 82-0184948
Federal Excise Tax Return Form 940
Federal - Employer's Quarterly Tax Return
indicated, that taxes amounting to $60,926.11 had been paid for the period of Jan. 1, 1954, to March 31, 1955, of which 3.3511 percent or $2,041.70 was applicable to the DMEA payroll.

Payroll taxes were distributed to the various exploration project activities on the basis of the exploration labor cost as follows:

	Labor	Supervision	Total Labor	Percent	Payroll Taxes
Diamond Drilling	$ 190.34	$ 1,168.00	$ 1,358.34	2.3699	$ 48.38
Trenching	4,493.43	536.38	5,028.81	8.7738	179.14
Drifting	31,168.68	3,713.70	34,882.38	60.8601	1,242.58
Timbering	13,285.16	1,582.92	14,868.08	25.9406	529.63
Assaying	1,178.20	-	1,178.20	2.0556	41.97
Total	$50,315.81	$7,000.00	$57,315.81	100.0000	$2,041.70

See attached Schedules Nos. 1 to 5, inc.

Liability Insurance:

Liability insurance was made up of premiums paid on the payroll with rates as follows:

	Percent
Industrial Insurance	
Year of 1954	6.0000
Year of 1955	4.5500
Group Life Insurance	0.1294
Hospital	0.7440
Health and Welfare	0.6544

Premiums are computed on the exploration project payroll as follows:

Industrial Insurance:					
1954 Labor	$39,781.39	@	6%	$2,386.88	
1955 Labor	17,534.42	@	4.55%	797.82	$3,184.70
Group Life Insurance:					
	$57,315.81	@	0.1294%		74.17
Hospital and Medical Care:					
	$57,315.81	@	0.7440%		426.43
Health and Welfare:					
	57,315.81	@	0.6544%		375.07
Total			7.0678%		$4,060.37

Premiums were allocated to the various phases of the exploration project on the basis of the combined labor and supervision charges as follows:

	Total Labor	Percent	Liability Insurance
Diamond Drilling	$ 1,358.34	2.3699	$ 96.25
Trenching	5,028.81	8.7738	356.25
Drifting	34,882.38	60.8601	2,471.15
Timbering	14,868.08	25.9406	1,053.28
Assaying	1,178.20	2.0556	83.46
Total	$57,315.81	100.0000	$ 4,060.37

See attached Schedules Nos. 1 to 5, inc.

The Operator had not included liability insurance costs in the exploration project costs. These costs were computed to determine the Operator's actual unit costs.

Industrial Insurance was carried by the Western Pacific Insurance Company, Policy No. WS 11476, for the year of 1954 and by the Liberty National Insurance Company, Policy No. G 21986, for the year of 1955, whose rates are as follows:

	1954	1955
Underground Mining	$5.00	$4.55
Surface	1.50	1.62
Milling	1.50	.98
Clerical	-	.04

The Union agreement Article 15 provides for a Health and Welfare Plan, which provides hospitalization, medical care, surgical, weekly lost time benefits, life insurance and accidental death benefits for employees and their dependents. A joint Union-Company Committee is administering the plan.

The Company is insured by the Aetna Insurance Company, Policy No. 3143. The premium is based on an average age of the crew and is $15.00 per $1,000.00 insurance. An employee must have worked six months to obtain $500.00 protection which may be increased $500.00 for each six months service until the maximum is reached.

Assaying:

The Company laboratory made assay determinations for the Operator's milling operation, mining operation and the exploration project. Labor and supply costs were prorated by the Operator on the basis of the total number of determinations of all kinds made. Costs based on the above facts were found to be as follows:

Labor	2,618 assays	@ $ 0.45	$ 1,178.20
Supplies		0.25	648.47
Payroll Taxes		0.02	51.97
Industrial Insurance		0.03	83.46
Total	2,618 assays	$ 0.75	$ 1,962.10

(See Schedule No. 5.)

The laboratory crew consists of two research chemists and four to six assayers and helpers. During the years of 1954 and 1955 to March 31st the following determinations were made:

	1954 Year	1955 March 31
DMEA	3,704*	170*
Mining	27,161	6,918
Diamond Drilling	3,198	1,343
Mill	43,621	13,627
Total	78,684	21,158

* Operator claimed on his Form MF-104 for the period 2,618 assays.

The Company for the period under review used an average price per assay based on the total number of determinations made regardless of how simple or complex the assay might have been.

DMEA samples being tested for several metals were of the more complex nature and benefited by this method of cost proration.

Schedule No. 1

Diamond Drilling - Cost Per Unit

	Feet		Cost per Foot	Amount
Contract				
Nichols & Thompson Drilling Co.				
Surface	8,576.5	@	$ 5.53	$ 47,396.15
Underground	767.5	@	3.50	2,686.25
Casings left in Hole	555.0	@	.70	388.60
Reaming and Cementing	1,145.0	@	2.50	2,861.25
	9,344.0*		5.71	53,332.25
Labor and Supervision				
Labor	9,344.0	@	$ .02	$ 190.34
Supervision		@	.125	1,168.00
Operating Materials & Supplies				
Drill Supplies		@	.008	81.37
Depreciation		@	.003	32.24
Miscellaneous				
Payroll Taxes		@	.005	48.38
Industrial Insurance		@	.010	96.23
Operator's Drilling Cost	9,344.0	@	$5.88	$54,948.81

* * * *

Units Completed

Drilling - Surface	8,576.5	@	$6.96	$59,692.44
Drilling - Underground	767.5	@	3.38	2,594.85
Reaming and Cementing	1,145.0	@	2.50	2,862.50
Contract Unit Value	9,344.0	@	$6.972	$65,150.79

* Footage of Hole

Schedule No. 2

Trenching - Cost Per Unit

	Hours		Cost per Hour	Amount
Labor and Supervision			$	$
Labor	864	@	5.20	4,493.43
Supervision			.62	535.38
Operating Materials and Supplies Cat Supplies - Fuel, Oil, Grease etc.			4.29	3,709.89
Operating Equipment Depreciation			.89	761.74
Miscellaneous				
Payroll Taxes			.21	179.14
Liability Insurance			.41	354.85
Operator's Trenching Cost	864	@	$ 13.62	$ 10,035.83

* * * *

Units Completed

Trenching	864	@	$ 11.878	$ 10,262.59
Contract Unit Value	864	@	$ 11.878	$ 10,262.59

* * * *

Trenching Lineal Feet 10,700

Schedule No. 3

Drifting - Costs per Unit

	Feet		Cost per Foot	Amount
			$	$
Labor and Supervision				
Labor	1,238	@	25.18	31,168.68
Supervision			3.00	3,713.70
Operating Materials and Supplies				
Explosives			2.16	2,678.77
Track			1.60	1,989.56
Ventilation Pipe and Supplies			.95	1,179.87
Air and water Lines			2.48	3,064.53
Power Feeders			1.09	1,346.50
Air Supplies			.58	709.23
Drill Steel and Bits			.67	826.11
Rock Drill Supplies			.49	609.09
Mucking Supplies			.86	1,068.24
Battery Maintenance			.27	338.08
Miscellaneous			.07	89.51
Total Supplies	1,238	@	11.22	13,894.91
Operating Equipment				
Depreciation	1,238	@	4.27	5,283.84
Miscellaneous				
Payroll Taxes			1.00	1,238.58
Liability Insurance			2.00	2,477.15
Total Miscellaneous	1,238	@	3.00	3,715.73
			$	$
Operator's Drifting Cost	1,238	@	46.67	57,772.86

* * * *

Units Completed

			$	$
Drifting 7400 Level	1,238	@	35.535	43,992.34
Contract Unit Value	1,238	@	35.535	43,992.34

* * * *

Schedule No. 4

Timbering Cost per Unit

	Feet		Cost per Foot	Amount
Labor and Supervision			$	$
Labor	994.3	@	13.36	13,285.16
Supervision		@	1.59	1,582.92
Operating Materials and Supplies				
Timbering Supplies		@	8.10	8,053.90
Operating Equipment				
Depreciation		@	2.27	2,252.18
Miscellaneous				
Payroll Taxes		@	.53	529.63
Liability Insurance		@	1.06	1,053.28
			$	$
Operator's Timbering Cost	994.3	@	26.91	26,757.07

* * *

Units Completed

Timbering			$	$
Normal	994.3	@	7.00	6,960.10
Heavy	313.5	@	7.00	2,194.50
Spiling	297.0	@	20.00	5,940.00
Framing	210 Bdft	@	5.48 m	1,150.80
			$	$
Contract Unit Value	994.3	@	16.34	16,245.40

* * *

Schedule No. 5

Assaying Cost per Unit

	Assays		Cost per Assay	Amount
Labor and Supervision			$	$
Labor	2,618	@	.45	1,178.20
Operating Materials and Supplies				
Assaying Supplies			.25	648.47
Miscellaneous				
Payroll Taxes			.02	44.97
Industrial Insurance			.03	83.46
			$	$
Operator's Assaying Cost	2,618	@	.75	1,952.10

* * *

Units Completed

			$	$
Assays Stage I	2,346	@	3.00	7,038.00
Stage II	272	@	3.00	816.00
			$	$
Contract Unit Values	2,618	@	3.00	7,854.00

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TERMINATION AGREEMENT

It is agreed this 2nd day of January, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Calera Mining Company, hereinafter called the "Operator," parties to Exploration Project Contract No. Idm-8645 (Docket No. DMEA-3143), dated December 9, 1953, as amended, that:

1. Effective 12:01 a.m. December 9, 1956, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the agreed unit costs of work performed prior to December 9, 1956.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. The Operator hereby releases and agrees to save the Government harmless from all claims or demands by the operator under or arising out of said Contract, except as otherwise provided in this termination agreement.

5. All rights of the Government provided for in the Contract with respect to certification of discovery or development, percentage royalty and liens for its payment, records, audits, and recovery of any overpayment, 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

Cardwell 12/27/56
Thompson
Chapman
Martin
Fisher
Selfridge

By C. M. Matthews
Administrator, Defense Minerals Exploration Administration

CALERA MINING COMPANY

By [signature]

Title Vice President

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Chapman
Martin
Chandler
Selfridge
Johnson

AMENDMENT NO. 4
to
EXPLORATION PROJECT CONTRACT Idm-E645
Dated December 9, 1953
DOCKET NO. DMEA-3143
between
THE UNITED STATES OF AMERICA
and
CALERA MINING COMPANY

It is agreed this 12th day of March, 1956, that the Contract is further amended as follows:

1. In Amendment No. 2, delete the second paragraph in Footnote 1/, and substitute the following:

"If it is necessary to replace a rock bolted section with normal timbering, only the difference between the allowable cost per foot of rock bolting and the allowable cost of $7.00 per foot of normal timbering and/or rock bolting shall be an allowable cost."

2. In Article 3 of the contract form, the period for completion of the work is further extended from "24 months" to "36 months."

3. In Article 10 of the contract form, that part of the second sentence beginning with the word "Provided" is deleted.

4. In Annex II to the Contract, the period for royalty payments is extended to thirteen (13) years from the date of the Contract; that is, to December 9, 1966.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. M. Mendorp
Administrator, Defense
Minerals Exploration
Administration

CALERA MINING COMPANY

By

Docket Copy

Rejected + returned by Operator

AMENDMENT NO. 4
to
EXPLORATION PROJECT CONTRACT Idm-E645
Dated December 9, 1953
DOCKET NO. DMEA-3143
between
THE UNITED STATES OF AMERICA
and
CALERA MINING COMPANY

It is agreed this 6th day of January, 1956, that the Contract is further amended as follows:

1. In Amendment No. 2, delete the second paragraph of Footnote 1/, and substitute the following:

> If it is necessary to replace a rock bolted section with normal timbering, only the difference between the allowable cost per foot of rock bolting and the allowable cost of $7.00 per foot of normal timbering and/or rock bolting shall be an allowable cost.

2. In Article 3 of the contract form, the period for completion of the work is further extended from "24 months" to "36 months."

3. In Article 10 of the contract form, that part of the second sentence beginning with the word "Provided" is deleted.

4. Annex III, attached hereto and made a part hereof, is substituted for the royalty provisions in Annex II to the Contract.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the agreed unit cost of any item of work.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mitchell
Administrator, Defense Minerals Exploration Administration

Robin Dwyer
Appd. Sol. Off.
Chapman
Martin
Davis
Talbert
Selfridge
Fey

CALERA MINING COMPANY

By _____

ANNEX III

The following provisions are in lieu of Article 9 :

Repayment by Operator.--a. Certification.--If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Royalty on production.--The Operator, as principal, if the Operator is the producer, or as surety, if the Operator is not the producer, shall pay to the Government* a royalty on all minerals mined or produced from the land,* as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years* from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

c. Basis for computation.--The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business, and shown as deductions 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 to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the

* The "land" refers to the land described in Article 2 of the Contract.

* The period "thirteen years" is substituted for the period "ten years."

Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the raw ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

d. Unsold production.--If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

e. Percentages of royalty.--The percentages of the Government's royalty shall be as follows:

> One and one-half ($1\frac{1}{2}$) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half ($\frac{1}{2}$) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.
>
> (For instance: the royalty on an amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) percent; on an amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

f. Lien for payment.--To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

g. Notice to purchasers.--The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

h. No obligation to produce.--Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

i. Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

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Rubin

10/7/5

RECEIVED

SEP - 2 1955

AMENDMENT NO. 3

It is agreed this 29th day of August 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Calera Mining Company

(Docket No. DMEA 3143, cobalt-copper)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 645 of December 9 1953 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be December 9 1953.

This amendment is made by authority granted the Executive Officer, DMEA Field Team, Region ~~II~~ I, Northwest District, in Order No. 2684 by the Acting Secretary of the Interior.

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."

Executed in sextuplicate the day and year first above written.

CALERA MINING COMPANY

(Operator)

By E. B. Vaughn

THE UNITED STATES OF AMERICA

By Wing G. Agnew, Acting Exec. Officer

~~A. E. Weissenborn, Exec. Officer~~

DMEA Field Team, Region ~~II~~ I

Northwest District

RECEIVED

AUG 29 1955

U. S. G. S.

SPOKANE, WASH.

RECEIVED
SEP - 1956

CALERA MINING COMPANY
Exploration Project Contract Idm-E645
Docket No. DMEA-3143 (cobalt-copper)

AMENDMENT NO. 3

Exhibit "F"

and Modifications

In Exhibit "A" of the contract under Description of the Work, II, Underground Work,

"800 feet of diamond drilling may be done at approximately 25-foot intervals in those areas where the vein is extensively faulted and close drilling may be required to indicate the continuity of the vein. Such drilling is to be done only with the approval of the Government."

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Exploration Project Contract Idm-E645
Calera Mining Company
Docket No. DMEA 3143 (cobalt-copper)

Justification for Amendment No. 3

Underground diamond drilling at 100-foot intervals may not pick up faulted vein segments if the offsetting faults cut the vein at small angles. Mineralized vein segments may be lost if drilling at 100-foot intervals is adhered to.

The cobalt ore also occurs in pods having a short strike length. It is in the interest of the Government to drill at shorter, even 25-foot, intervals if the presence of an ore body is indicated by the results of prior drill holes.

Verne C. Fryklund, Jr.

DOCKET COPY

AMENDMENT NO. 2

RECEIVED
SEP - 6 1955

It is agreed this 16th day of August 195 5, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Calera Mining Company

(Docket No. DMEA-3143, cobalt-copper)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 645 of December 9 195 3 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be December 9 195 3.

This amendment is made by authority granted the Executive Officer, DMEA Field Team, Region ~~XX~~ I, Northwest District, in Order No. 2684 by the Acting Secretary of the Interior.

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."

Executed in sextuplicate the day and year first above written.

CALERA MINING COMPANY
(Operator)

By [signature]

THE UNITED STATES OF AMERICA

By : [signature] Wing G. Agnew, Acting Exec. Officer
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DMEA Field Team, Region ~~XX~~ I
Northwest District

RECEIVED
AUG 31 1955
U. S. G. S.
SPOKANE, WASH.

CALERA MINING COMPANY
Exploration Project Contract Km-2643
Docket No. DMEA-3143 (cobalt-copper)

AMENDMENT NO. 2

Exhibit "F"

Changes and modifications

1. In Exhibit "A" of the contract under Description of the Work, Stage II, before next to the last paragraph:

add - "Rock bolts, not less than 6 feet in length may be used in lieu of normal timbering if the conditions warrant."

2. Under Agreed Unit Costs

delete	- "Normal timbering 5,000 feet at $7.00/ft."	$35,000.00
substitute	- "Normal timbering and/or rock bolting 1/ 5,000 ft. at $7.00/ft."	$35,000.00

add - "Footnote 1/"

1/ "Rock bolting shall be paid for at the rate of $3.54 for a bolt with plate and $4.04 for a bolt with a headboard placed, but payment for rock bolting shall not exceed $7.00 per linear foot of drift and crosscut rock bolted.

"If it is necessary to replace rock bolted sections with timber, only the difference between the actual cost per foot of rock bolting and the maximum cost of $7.00 per foot of at timber shall be paid."

Exploration Project Contract I[illegible]
Calumet Mining Company
Docket No. [illegible] (cobalt-copper)

Justification for Amendment No. 2

The operator feels that in certain areas where conditions warrant their use, that rock bolting in lieu of timbering will aid him in advancing his exploration heading. He will be able to advance his headings concurrently with rock bolting, which cannot be done with timbering.

The Government will benefit, if rock bolting is used, by an increased rate of advance. This amendment will not increase the unit costs allowed in the contract.

A. L. Santino

DOCKET COPY
Pubin 3/21/55

AMENDMENT NO. 1

It is agreed this 8th day of February 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and

Calera Mining Company

(Docket No. DMEA-3143, cobalt-copper)

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 645 of December 9 1953 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be December 9 1953.

This amendment is made by authority granted the Executive Officer, DMEA Field Team, Region ~~XI~~ I, Northwest District, in Order No. 2684 by the Acting Secretary of the Interior.

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."

Executed in sextuplicate the day and year first above written.

CALERA MINING COMPANY
(Operator)

By E. B. Vaughan

THE UNITED STATES OF AMERICA

By A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region ~~XI~~ I, NW Dist.

CALERA MINING COMPANY
Exploration Project Contract Idm-E645
Docket No. DMEA-3143 (cobalt-copper)

AMENDMENT NO. 1

Exhibit "F"

Changes and modifications:

1. In Exhibit "A" of the contract under Description of the Work, Stage I, Surface Diamond Drilling,

delete - "Surface Diamond Drilling"

substitute - "Surface and Underground Diamond Drilling"

delete - "approximately 8,700 feet of diamond drilling"

substitute - "8,576.5 feet of surface diamond drilling"

delete - "an estimated 1,700 feet" (of reaming and cementing)

substitute - "1,145 feet" (of reaming and cementing)

add paragraph- "Drill two underground drill holes totaling 664.38 feet.

"Hole 1 will be collared in the face of an intermediate drift off the 7100 level at approximate coordinates 15,190N, 4,687E at plus 20 degrees inclination, bearing N. 63° E.; the Government will not participate in the cost of the first 75 feet of Hole 1, which lies southwest of the DMEA boundary, as stated in Annex I of the contract.

"Hole 2 will be drilled from the face of an intermediate drift at approximate coordinates 15,077N, 4,975E at plus 20 degrees inclination, bearing N. 27° E.

"Sampling procedures, etc., shall be the same as those described above."

2. Under <u>Estimated Costs of the Project</u>, <u>Agreed Unit Costs, Stage I</u>,

delete	- <u>Surface Diamond Drilling</u> - 8,700 feet @ $6.96/ft.	$60,552.00
substitute	- <u>Surface Diamond Drilling</u> - 8,576.5 feet @ $6.96/ft.	59,698.44
delete	- 1,700 feet of reaming and cementing @ $2.50/ft.	4,250.00
substitute	- 1,145 feet of reaming and cementing @ $2.50/ft.	2,862.50
add	- <u>Underground Diamond Drilling</u> - 664.38 feet @ $3.3822/ft.	2,247.06

Exploration Project Contract Idm-2645
Calera Mining Company
Docket No. DMEA-3143 (cobalt-copper)

Justification for Amendment No. 1

The diamond drilling outlined in this amendment will be used to explore for a vein which was found on the surface by trenching. The projection of this vein is within 200 to 300 feet from workings off the 7100 level. This vein can be explored at depth from these workings at less cost and with better results than from the surface locations. This amendment does not increase the costs allowed in the contract.

Docket copy
(Calera Mining Company)

EXPLORATION PROJECT CONTRACTS
NORTHFIELD MINES, INC.
DOCKET NO. DMEA-2436
and
CALERA MINING COMPANY
DOCKET NO. DMEA-3143

SPECIAL AGREEMENT C[illegible] OTHER LAND

WHEREAS:

1. The Government and Northfield Mines, Inc., are parties to Contract Idm-E334 (Docket No. DMEA-2436), dated June 2, 1952. The Queen claim (Survey No. 2128), is included as part of the land described in Article 2 of this contract, but no exploration was performed on or near this claim. This contract was terminated by an agreement dated July 13, 1955, which provides that a discovery or development was made under the contract and which preserves all the Government's rights with respect to royalty.

2. The Government and Calera Mining Company are parties to Contract Idm-E645 (Docket No. DMEA-3143), dated December 9, 1953. Annex I of this contract provides that should Calera acquire any interest in the Queen claim, which is contiguous to the land described in Annex I, it shall be included as part of the land under this contract.

3. Calera now desires to acquire the Queen claim from Northfield, provided that in so doing it does not assume any obligation for the payment of royalty under Northfield's contract. On the other hand, Northfield desires to transfer the Queen claim to Calera, provided that it will not be required to pay royalty under its contract for any production made from the Queen claim by Calera.

4. It is more likely that the Government will receive royalty on production from the Queen claim if it is transferred to Calera than if the transfer is not made.

NOW THEREFORE, effective August 1, 1955, it is agreed that:

1. The Queen claim is deleted from Annex I to Contract Idm-E334 (Docket No. DMEA-2436), and production from said claim is not subject to the Government's royalty under said contract.

2. The Queen claim is added to the land referred to in Article 2 of Contract Ida-2545 (Docket No. DMEA-3143), and the Consent to Lien of the owners is required on forms furnished by the Government.

Executed this 6th day of September, 1956.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals Exploration Administration

MONTMFIELD MINES, INC.

By Paul W. Beckhousen
Treasurer

GALENA MINING COMPANY

By [illegible]
Vice President

Ruby Hoffland
Abbot Sol. OIA
Talbert
Chapman
Selfridge
Mullin

FORM No. 320—DEED TO MINING CLAIM.

DEED TO MINING CLAIM

THIS INDENTURE, made the 10th *day of* JANUARY, 1956, *between*

NORTHFIELD MINES, INC., a corporation,

party of the first part, and

CALERA MINING COMPANY, a corporation,

party of the second part;

WITNESSETH: That the said party of the first part, for and in consideration of the sum of ONE DOLLAR ($1.00) and other valuable considerations---------- ~~Dollars,~~ *lawful money of the United States of America, to* it *in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained, sold, remised, released and forever quitclaimed and by these presents does grant, bargain, sell, remise, release and forever quitclaim unto said party of the second part,* its *heirs and assigns*

QUEEN Patented Lode Mining Claim, No. 2128, situate in the Blackbird Mining District, in the County of Lemhi, State of Idaho.

Together with all the dips, spurs and angles, and also all the metals, ores, gold and silver-bearing quartz rock and earth therein, belonging thereto, and all the rights, privileges and franchises thereto incident, appendent and appurtenant, or therewith usually had and enjoyed; and also all and singular the tenements, hereditaments and appurtenances thereto belonging or in anywise appertaining, and the rents, issues and profits thereof; and also all the estate, right, title, interest, property, possession, claim and demand whatsoever, as well in law as in equity, of the said party of the first part, of, in and to the said premises, and every part and parcel thereof, with appurtenances.

To Have and to Hold all and singular, the said premises, together with the appurtenances and privileges thereto incident, unto the said party of the second part, its *heirs and assigns forever. It is expressly covenanted that it is intended hereby to convey any and all right, title, interest and estate which may hereafter be acquired to said premises, or any part thereof, by virtue of any patent, which may hereafter be issued by the United States Government therefor under proceedings heretofore instituted in that behalf by the said party of the first part or* its *grantors.*

IN WITNESS WHEREOF, the said party of the first part has hereunto set its *hand and seal the day and year first above written.*

Executed and Delivered in the Presence of

ATTEST: Paul D. Beckhauser

Secretary

NORTHFIELD MINES, INC.

By T. Hurley (SEAL)

President

(SEAL)

(SEAL)

(SEAL)

STATE OF ~~IDAHO~~ New York
County of New York } ss.

On this Tenth day of January, 1956, before me the undersigned J. Lindsley, a Notary Public in and for said State, personally appeared known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Ra. H. Porter
Notary Public for the State of ~~Idaho~~ New York
Residing at New York, ~~Idaho~~

Deed to Mining Claim

(FORM No. 320)

TO

Dated, 19

STATE OF IDAHO,
County of Lemhi } ss.

I hereby certify that this instrument was filed for record at request of C. Walker Lyon at 1 minutes past 4 o'clock P. M., this 7th day of June, 1956, in my office, and duly entered in Book 45 of Deeds at page 498.

J. W. Simmons
Ex-Officio Recorder.
By Opal Reddington
Deputy.

Fees, $ 1.50 Paid

Mail to

4911 STEVENS-NESS LAW PUB. CO.

FORM No. 869—WARRANTY DEED.

THIS INDENTURE, made this 3rd day of May, 19 56, between Floyd W. Stevenson and Merle Stevenson, also known as F.W. Stevenson and Merle Stevenson, husband and wife, of Richland, County of Benton, State of Washington, the part ies of the first part and Calera Mining Company, a corporation, of, County of Lemhi, State of Idaho, the part y of the second part,

WITNESSETH, that the said part ies of the first part, for and in consideration of the sum of ONE DOLLAR ($1.00) and other valuable considerations ---------- ~~Dollars~~ lawful money of the United States of America, to them in hand paid by the part y of the second part, the receipt whereof is hereby acknowledged, have granted, bargained, sold, and by these presents, do grant, bargain, sell and convey and confirm unto the said part y of the second part, and to its heirs and assigns, forever, all the following described real estate, situated in, County of Lemhi, State of Idaho, to-wit:

QUEEN Patented Lode Mining Claim No. 2128, situate in the Blackbird Mining District, in Lemhi County, State of Idaho.

TOGETHER with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, and the reversion and reversions, remainder and remainders, and rents, issues and profits thereof; and all estate, right, title and interest in and to the said property, as well in law as in equity, of the said part ies of the first part.

TO HAVE AND TO HOLD, all and singular the above mentioned and described premises together with the appurtenances unto the part y of the second part, and to its heirs and assigns forever. And the said part ies of the first part, and their heirs, the said premises in the quiet and peaceable possession of the said part y of the second part, its heirs and assigns, against the said part ies of the first part, and their heirs, and against all and every person and persons whomsoever, lawfully claiming or to claim the same shall and will warrant and by these presents forever defend.

IN WITNESS WHEREOF, the said part ies of the first part ha ve hereunto set their hand s and seal s the day and year first above written.

Executed and Delivered in the Presence of

Floyd W. Stevenson [SEAL]

Merle Stevenson [SEAL]

[SEAL]

[SEAL]

STATE OF ~~IDAHO~~ Washington, } ss.
County of Benton

On this 3rd day of May in the year 1956, before me the undersigned, a Notary Public in and for said State, personally appeared Floyd W. Stevenson and Merle Stevenson

known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Notary Public for the State of ~~IDAHO~~ Washington
Residing at West Richland, ~~IDAHO~~

No.

WARRANTY DEED

(FORM No. 880)

TO

Dated, 19

STATE OF IDAHO, } ss.
County of Lemhi

I hereby certify that this instrument was filed for record at request of C. Walker Lyon at 4 minutes past 7th o'clock P. M., this 7th day of June, 19 56, in my office, and duly entered in Book 45 of Deeds at page 497.

W. A. Simmons
Ex-Officio Recorder.
By Opal Reddington, Deputy.

Fees, $1.50 Paid

Mail to

552 STEVENS-NESS LAW PUB. CO., PORTLAND, ORE.

F-200
(June 1951)
(Revised Feb. 1952)

DOCKET DMEA 3143

COMMODITY Cobalt-Copper

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Docket Copy
Idm-E645

EXPLORATION PROJECT CONTRACT [1]

IT IS AGREED this 9th day of December, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Calera Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, Cobalt, Idaho

hereinafter called the "Operator," as follows: and as set forth in Annexes I, II, and III attached hereto and made a part hereof

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Idaho, County of Lemhi, described as ~~follows~~ [3] set forth in Annex I and on Map No. 2

the Operator represents and undertakes: [4]

(*a*) That the Operator is the owner, in possession and entitled to possession, ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ and there are no encumbrances

(*b*) ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~.

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.

ARTICLE 3. *Exploration project.*—The Operator, within 70 days from the date of this contract shall commence work on a project of exploration for [5] Cobalt-Copper in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—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.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following: and also the costs referred to in Article 13.

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related ~~initial~~ allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, ... mit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit ... approved by the Government in the course of the work, as indicated by its approval and payment of invoi...

[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, particularly excluding any land or interest therein to which the Go... attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

U. S. GOVERNM...

(*b*) The Government's payments in [illegible] cases will be based on actual, necessary [illegible] (including contract unit p[illegible]es) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *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. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 70 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $285,138.00, which is 70 percent of $407,340.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations. See Annex II, substituted for Article 9.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator. Number 10 is replaced by "12"

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *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 worth while 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 dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* To the extent that costs are set forth in Exhibit "A" as agreed unit costs, they are in lieu of the actual costs that would otherwise be allowable costs of the project as provided in Article 8(a) of the contract form. (and see Annex III)

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. D. Mitterdorf
Administrator, Defense Minerals Exploration Administration

CALERA MINING COMPANY
(Operator)

By [signature]
Vice President

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

[CORPORATE SEAL]

EXPLORATION PROJECT CONTRACT
CALERA MINING COMPANY
DOCKET NO. DMEA-3143

ANNEX I

With respect to the land referred to in Article 2 of the contract form, the Calera Mining Company owns the following 17 patented and 12 unpatented mining claims, which are recorded in the Court House at Salmon, Lemhi County, Idaho.

Patented Mining Claims	Patent No.
Anna	1592
Blacktail	1592
Blacktail No. 2	1592
Brown Bear	1592
Buckeye	1592
Catherine	1592
Dandy	1592
Dandy No. 2	1592
Idaho	1592
Iowa	1592
Lemhi	1592
St. Louis	1592
McKinley	1980
Indian Quartz	2009
Anaconda*	2557
Copper Gold	2557
Panther*	2557

*Only those portions of the Anaconda and Panther claims which overlap the Copper Gold claim are included in this agreement.

Unpatented Mining Claims	Book No.	Page No.
Jaycee	1	607
Chelan	2	64
Chelan No. 1	2	63
Chelan No. 2	2	251
Chelan No. 3	2	252
Chelan No. 7	2	263
Chelan No.15	2	283

Unpatented Mining Claims	Book No.	Page No.
Chelan No. 4	3	519-520
Chelan No. 5	3	520
Old Gold	3	2
Chelan No. 57	4	25
Chelan No. 85	4	221
Jaycee Amended	4	222
Old Gold Amended	4	229

Should the Operator obtain an interest in the Queen claim set forth on Map No. 2, it shall be included in the claims listed in Article 2.

All minerals mined or produced from presently developed ore bodies, with their extensions to depth, occurring below planes Nos. 1, 2, 3, and 4, hereinafter described (the traces of which on the 7100 and 7400 Levels are shown on Maps 2, 3, and 4) are exempt from the royalty payment provisions of Article 9; all other minerals mined or produced from the claims set forth in this Annex I are subject to these royalty payment provisions.

Plane #1. Strikes E-W, dips 38° N.; intersects the 7400-foot level at coordinate 17290 N. (coordinates are shown on the attached maps) and the 7100-foot level at coordinate 17670 N.; is bounded on the west by vertical planes through the southwest side of the Blacktail No. 2; is bounded on the east by its intersection with plane #2 at coordinates 17290 N., 3340 E. on the 7400-foot level, and coordinates 17670 N., 3360 E. on the 7100-foot level.

Plane #2. Strikes S. 30° E. dips 55° NE; goes from its intersection with plane #1, at coordinates 17290 N., 3340 E. on the 7400-foot level, and 17670 N., 3360 E. on the 7100-foot level, S. 30° E, to its intersection with plane #3, at coordinates 14910 N., 4720 E. on the 7400-foot level, and 15100 N., 4850 E. on the 7100-foot level.

Plane #3. Strikes S. 77° E., dips 55° NE; goes from its intersection with plane #2 at coordinates 14910 N., 4720 E. on the 7400-foot level, and 15100 N., 4850 E. on the 7100-foot level, S. 77° E, to the intersection with plane #4, at coordinates 14640 N., 5900 E, on the 7400-foot level, and 14860 N., 5890 E. on the 7100-foot level.

Plane #4. Strikes S. 25° E., dips 75° NE; goes from its intersection with plane #3, at coordinates 14640 N., 5900 E. on the 7400-foot level, and 14860 N., 5890 E. on the 7100-foot level, S. 25° E. to its intersection with a vertical plane through the east side of the Idaho claim, and the north side of the Monitor claim and the west side of the Little Queen claim.

ANNEX II

The following provisions are in lieu of Article 9 :

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by this contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts, plus one-half ($\frac{1}{2}$) per cent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) per cent.)

c. Definitions.--As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

d. Lien for Payment.--To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Wherever the number 10 appears, it is replaced by the number 12 .

49450

ANNEX III */

Materials and Supplies. For the purpose of determining the Government's interest in materials or supplies remaining upon any termination of the work, they shall be considered in groups or categories (such as pipe, or explosives, or rails, or drill steel), and if the original cost of the remaining unexpended portion of any such group or category exceeded $50, the Government shall have an interest therein as provided in Article 11 of the contract form.

Equities in Equipment. Unless expressly permitted by provisions in Exhibit "A", the operator shall not procure equipment or any other item under a rental-purchase agreement, an installment-purchase agreement, any agreement which creates or builds up an equity or interest in the thing procured which can be converted to legal title only by further payment or some other consideration, or any agreement other than for straight rental or cash purchase and delivery.

Preservation of Property. Until the final disposal of any equipment or other property in which the Government has an interest or equity, the operator shall preserve and protect same for the mutual best interests of the parties, any reasonable and necessary cost thereof to be treated as an allowable cost of the exploration work to which the Government will contribute.

*/ The provisions in this annex apply only to materials and supplies, equipment, and property to the cost of which the Government has contributed on an actual cost basis; they have no application to costs contributed to on a unit-cost basis.

The Operator's obligation to bring the project to completion continues only as long as the units of work provided for in the contract are sufficient to accomplish the work required, and as long as the accumulated costs of the work, whether unit costs or actual costs, do not exceed the total estimated.

EXPLORATION PROJECT CONTRACT
CALERA MINING COMPANY
DOCKET NO. EMRA-3143

EXHIBIT "A"

Description of the Work

The following maps are attached to the contract:

Map No. 1. Index map showing location of the Blackbird Mining District in Lemhi County, Idaho.

Map No. 2. Claim map of the claims owned by the Calera Mining Company and the Northfield Mines, outlining claims included in the exploration area and traces of cut-off planes or boundary lines (Annex I) separating the present production area from the exploration area.

Map No. 3. Underground workings of the Calera Mining Company in plan and longitudinal section, indicating proposed underground exploration work and traces of cutoff planes or boundary lines (Annex I) separating the present production area from the exploration area.

Map No. 4. General surface map showing location of proposed trenching and surface diamond drill holes and traces of cutoff planes or boundary lines on the 7100 and 7400 Levels separating the present production area from the exploration area.

Nine section maps (A-A') (B-B') (C-C') (D-D') (E-E') (F-F') (G-G') (H-H') (I-I'), showing inclination and depth of proposed diamond drill holes.

This project will be divided into the following two stages:

Stage I

In this stage as indicated on Map No. 4, the work will consist of:

Trenching:

Surface trenching with a D-7 bulldozer, or equivalent, to uncover outcrops not in excess of 864 hours. This work will be done under proper supervision and with necessary surveying and mapping, and will consist of 12 trenches having a total length of approximately 9,000 feet. The trenches shall be sampled in the mineralized area and it is estimated that approximately 700 samples will be necessary.

Surface Diamond Drilling:

This work will consist of approximately 3,700 feet of diamond drilling in 20 holes of AX size, to be performed under proper supervision and with necessary surveying, mapping, and logging. Sludge samples shall be taken at approximately 5-foot intervals, and the number of core samples necessary shall be determined by the results obtained from the sludge samples. Representative portions of the residue of the cores, after obtaining core samples, shall be preserved for Government inspection in core boxes or sample sacks. It is estimated that 1,700 sludge samples will be necessary and approximately 700 core samples will be needed, and there will be an estimated 1,700 feet of reaming and cementing.

Stage II

In this stage, as indicated on Maps Nos. 3 and 4, the work will consist of:

Underground Work

On the 7,400 level at coordinates 17290 N, 3025 E, on the Brown Bear claim, a drift 5 feet by 7 feet in the clear shall be driven 500 feet north, and then approximately 1,500 feet N. 35° W. This work may be done concurrently with that in Stage I, or prior thereto.

If and when the surface trenching and diamond drilling has advanced sufficiently and if mineralization is indicated, then the Operator with the approval of the Government shall (1) start a crosscut, 5 feet by 7 feet in the clear, at 15020 N, 4760 E. on the 7,100 level, approximately 1,200 feet in length on a course N 47° E., and then, at a point to be selected by the Operator with the approval of the Government, a drift 5 feet by 7 feet in the clear shall be driven approximately 800 feet northerly along the mineralized zone, and (2) shall drive a crosscut 5 feet by 7 feet in the clear from 17790 N, 3025 E. on the 7,400 level approximately 800 feet, and then drift northerly 5 feet by 7 feet in the clear approximately 1,200 feet.

All drifts and crosscuts shall be sampled at approximately 5-foot intervals, with one or two samples to each section as justified. Approximately 2,400 samples should be taken.

Drifts and crosscuts shall be timbered where necessary. It is estimated that 5,000 feet of the 6,000 feet of drifting and crosscutting will require timbering. In addition it is estimated that this ground

will also require, out of the 5,000 feet, 750 feet of heavy timbering and 500 feet of spiling.

When the drifts and crosscuts have advanced sufficiently to allow for setups, then approximately 10,500 feet of underground diamond drilling under proper supervision and with the necessary surveying, mapping, and logging, shall be done on both sides of the drifts and crosscuts, where justified. These holes shall be at approximately 100-foot intervals and the location, course, and inclination shall be selected by the Operator with the approval of the Government. The depth will be dependent on the mineralization indicated by the preceding work. These drill holes shall be completely sampled and approximately 3,500 samples should be taken. Representative portions of the residue of the cores, after obtaining the core samples, shall be preserved for Government inspection in core boxes or sample sacks.

Estimated Costs of the Project

Agreed Unit Costs

The Government will contribute to the costs of the work listed below on the basis of the agreed unit costs specified therefor, as they accrue, in lieu of actual costs, for a period of one year from the date of this contract, and thereafter these unit costs will continue unless and until the Government, at its option, notifies the Operator that the Government will contribute to the incompleted portions of any of the work on the basis of actual costs as set forth in Article 6(a) of the contract form, but the schedules there referred to are waived except as set forth below under the heading "Estimated Actual Costs of Work that may remain incompleted if and when the Government exercises its option to convert to actual costs."

That work to which the Government will contribute on the basis of agreed unit costs may be performed by independent contractors without reference to the provisions relating to independent contracts and contractors in Articles 4(a) and (b) and 6(a)(1) of the contract form.

Stage I

Trenching - 864 hours @ $11.878/hr. (rounded to)	$10,263.00
Surface Diamond Drilling - 8,700 feet @ $6.960/ft.	60,552.00

1,700 feet of reaming and cementing @ $2.50/ft.	$ 4,250.00	
Assaying		
3,100 assays @ $3.00/each (Cobalt and Copper)	9,300.00	
Stage II		
Drifting and Crosscutting		
6,000 feet @ $35.535/ft.	213,210.00	
Timbering		
Normal timbering 5,000 feet @ $7.00/ft.	35,000.00	
Heavy timbering 750 feet (of the 5,000 feet) @ $7.00/ft., additional	5,250.00	
Spiling 500 feet (of the 5,000 feet) @ $20.00/ft., additional	10,000.00	
Framing 1,150 sets of timber @ $5.48/set, complete with blocking, lagging, and wedges	6,302.00	
	56 552 00	
Underground Diamond Drilling		
10,500 feet @ $3.3822/ft.	35,513.00	
Assaying		
5,900 assays @ $3.00/each (Cobalt and Copper)	17,700.00	
Total Agreed Unit Costs		**$407,340.00**
Government Participation @ 70%		**$285,138.00**

Estimated Actual Costs of Work that may remain Incompleted, If and when the Government Exercises its Option to Convert to Actual Costs

(1) Independent Contracts

All or any element of the remaining work may be performed by independent contractor upon amendment of Exhibit "A" as provided for in Articles 4 and 6 of the Contract form, the Government's approval of any such independent contract being required.

(2) Labor, Supervision, Consultants

Labor

Schedule and Estimate of cost waived

Supervision

(Includes Superintendent, foreman)
$500.00 per month *

Consultants

None

(3) Operating Materials and Supplies

Schedule and estimate of cost waived

(4) Operating Equipment

To be purchased

None

To be rented

None

To be furnished by Operator

	Value
1 - 5-ton Plymouth Locomotive	$7,287.05
2 - Eimco 12B Mucking Machines	5,674.40

		Value	
15 -	C. S. Cars - 30 cubic foot Rocker Dump Cars	$3,660.00	
2 -	Mancha 1½-ton locomotives	6,690.96	
4 -	Batteries for above locomotives	5,566.80	
2 -	Charging panels	1,821.96	
2 -	A.M.D. car transfers	900.00	
1 -	Buffalo Forge Blower, 15 H.P., or equivalent	375.00	
1 -	Clarage Blower, 7½ H.P., or equivalent	275.00	
	Starting equipment for blowers	175.00	
2 -	Timber trucks	236.78	
4 -	Jackleg type pusher drills @ $505.00/ea.	2,020.00	
4 -	Line oilers @ $17.54/ea.	70.16	
1 -	R48 Stoper	670.00	
1 -	Water pump	153.02	
1 -	Track jack and 1 rail bender	90.00	
	Total		$35,666.13

The Operator will maintain and keep the above equipment in good repair and shall receive for its use while full operations under the contract are in progress a depreciation allowance of $595.00 per month. *

(5) Rehabilitation and Repairs

None

(6) New Buildings, Improvements, Installations

None

(7) **Miscellaneous**

Schedule and estimate of cost waived.

(8) **Contingencies** $5,000.00

Total Estimated Costs	1/ $407,340.00*
Government Participation at 70%	$285,138.00*

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* Indicates allowable maximum.

1/ This sum will be apportioned between agreed unit costs and actual costs as they are determined; any excess over this total shall be for the sole cost of the Operator.

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3143

COMMODITY Cobalt - Copper

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Calera Mining Company, Blackbird Division, Cobalt, Idaho
H. H. Sharp, President, 730 Fifth Avenue, New York 19, New York

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Idaho, County of Lemhi, described as follows:[3] as set forth in Annex I and property map No. 2.

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, ~~and that the property is subject only to the following claims, liens, or encumbrances, a list of which the subordination agreement of the lender is attached:~~

(*b*) ~~That the Operator is lessee, in possession and entitled to possession, and the owner's consent to lease is attached:~~

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.

ARTICLE 3. *Exploration project.*—The Operator, within 15 days from the date of this contract shall commence work on a project of exploration for[5] Cobalt - Copper

in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. 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.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 70 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $288,953.00, which is 70 percent of $412,790.00 the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[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, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, 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. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *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 worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

EXPLORATION PROJECT CONTRACT
CALERA MINING COMPANY
DOCKET NO. DMEA 3143
COBALT AND COPPER

EXHIBIT "A"

Statement of Work

The following maps are attached to the contract:

Map No. 1, Index map showing location of the Blackbird Mining District in Lemhi County, Idaho.

Map No. 2, Claim map of the claims owned by the Calera Mining Company and the Northfield Mines, outlining claims included in the exploration area and cut off planes or boundary lines (Annex II) separating the present production area from the exploration area.

Map No. 3, Underground workings of the Calera Mining Company in plan and longitudinal section, indicating proposed underground exploration work and cut off planes or boundary lines (Annex II) separating the present production area from the exploration area.

Map No. 4, General surface map showing location of proposed trenching and surface diamond drill holes.

Nine section maps (A-A') (B-B') (C-C') (D-D') (E-E') (F-F') (G-G') (H-H') (I-I'), showing inclination and depth of proposed diamond drill holes.

This project will be divided into two stages as follows:

Stage I, Trenching, and surface diamond drilling

Stage II, Drifting, crosscutting and underground diamond drilling.

STAGE I

TRENCHING, $\frac{1}{2}$ - $4\frac{1}{2}$ months.

Surface trenching with a D-7 bulldozer, or equivalent, to uncover outcrops -- 864 hours. This work will consist of 12 trenches with a total length of approximately 9,000 feet (Map No. 4). The trenches shall be sampled in the mineralized area and it is estimated that approximately 700 samples will be necessary.

SURFACE DIAMOND DRILLING, 2 - 9 months.

This work will consist of approximately 8,700 feet of drilling in ~~16~~ 20 holes (AX size) (Map No. 4). Sludge samples shall be taken at approximately 5-foot intervals and the number of core samples necessary shall be determined by the results obtained from the sludge samples. It is estimated that 1,700 sludge samples will be necessary and approximately 700 core samples will be needed.

STAGE II

TIME SCHEDULE, $\frac{1}{2}$ - 12 months.

The first underground work will be started on the 7,400 level at co-ordinates 17,290N, 3025E, on the Brown Bear claim (Maps 3 and 4). A drift 5' X 7' in the clear shall be driven 500 feet north, and then approximately 1,500 feet N35°W.[1/] [2/]

4 - 16 months

If and when the surface trenching and diamond drilling has advanced sufficiently and if mineralization is indicated, then the Operator with the approval of the Government shall start a crosscut, to be 5' X 7' in the clear, at 15,020N, 4,760E (Maps 3 and 4) on the 7,100 level, approximately 1,200 feet in length on a course N47°E. Then at a point to be selected by the Operator with the approval of the Government a drift 5' X 7' in the clear shall be driven approximately 800 feet northerly along the mineralized zone. 1/ 2/

8 - 20 months

If and when the surface trenching and diamond drilling has advanced sufficiently and if mineralization is indicated, then the Operator with the approval of the Government shall drive a crosscut 5' X 7' in the clear from 17,790N, 3025E on the 7,400 level approximately 800 feet, then drift northerly, 5' X 7' in the clear, 1,200 feet. 1/ 2/

8 - 24 months

When the drifts and crosscuts have advanced sufficiently to allow for set-ups, then the underground diamond drilling shall be started. This work shall amount to approximately 10,500 feet and the area on both sides of drifts and along crosscuts shall be drilled where justified. These holes shall be approximately at 100-foot intervals and the location, course, and inclination shall be selected by the Operator with the approval of the Government. The depth will be dependent on

mineralization as indicated by preceding work. These drill holes shall be completely sampled and approximately 3,500 samples should be taken.

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

1/ All drifts and crosscuts shall be sampled at approximately 5-foot intervals, with one or two samples to each section as justified. Approximately 2,400 samples should be taken.

2/ Drifts and crosscuts shall be timbered where necessary. It is estimated that 5,000 feet of the 6,000 feet of drifting and crosscutting will require normal timbering. In addition it is estimated that this ground will require 750 feet of heavy timbering and 500 feet of spiling at additional costs.

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

ESTIMATED COST OF PROJECT

Agreed Unit Costs

The Government will contribute to the costs of the work requirements listed below on the basis of the agreed unit costs specified therefor, as they accrue, in lieu of actual costs, for a period of one year from the date of this contract, and thereafter unless and until the Government, at its option, notifies the Operator that for the remaining time fixed by the notice the Government will contribute to the incompleted portions of any of these work requirements on the basis of actual costs as set forth in Article 6(a) of the Contract form, but the schedules therein referred to are waived except as set forth below under the heading "Estimated Actual Costs of Work" that may remain incompleted if and when the Government exercises its option to convert to actual costs.

That work to which the Government will contribute on the basis of agreed unit costs may be performed by independent contractors without reference to the provisions relating to independent contracts and contractors in Articles 4(a) and (b) and 6(a)(1) of the Contract form.

STAGE I

TRENCHING	
Bulldozing 864 hours at $11.878 per hour (Costs to include machine operator, fuel, oil, upkeep, supervision, surveying, mapping, sample sacks, sampling, and insurance.)	$10,263.00
SURFACE DIAMOND DRILLING	
Diamond drill holes (AX size). 8,700 feet at $7.448 per foot. (Drilling to be done by an independent contractor includes cementing, reaming, and all costs pertaining to the drilling operation.) Above specified cost also includes supervision, surveying, mapping, logging cores, core boxes, sample sacks, sampling, and insurance.	64,797.00
ASSAYING	
3,100 samples at $3.00 per assay (Cobalt and Copper)	9,300.00

STAGE II

DRIFTING AND CROSSCUTTING	
Drifting and crosscutting, 6,000 feet at $37.085 per foot.	222,511.00
TIMBERING	
Normal timbering, 5,000 feet at $6.330 per foot, plus framing ($6,304.00)	37,954.00
Heavy timbering, 750 feet at $6.340 per foot	4,750.00
Spiling, 500 feet at $20.00 per foot	10,000.00
UNDERGROUND DIAMOND DRILLING	
Underground diamond drilling to be performed by the Operator. A total of 10,500 feet to be drilled at a cost of $3.382 per foot. (This work includes machines, operators, power, supervision, surveying, mapping, logging cores, sampling, core boxes, sample sacks and insurance.)	35,515.00
ASSAYING	
5,900 samples at $3.00 per assay. (Cobalt and copper)	17,700.00
Total cost of project	$412,790.00
Government participation, 70 percent	$288,953.00

Estimated Actual Costs of Work that may Remain Incompleted if and when the Government Exercises its Option to Convert to Actual Costs.

1. Independent Contracts

All or any element of the remaining work may be performed by independent contractor upon amendment of Exhibit "A" as provided for in Articles 4 and 6 of the Contract form, the Government's approval of any such independent contract being required.

2. Labor, Supervision, Consultants

Labor:

Schedule and Estimate of cost waived.

Supervision: (Includes Superintendent, Foreman)

$500.00 per month

Consultants:

None

3. Operating Materials and Supplies

Schedule and estimate of cost waived.

4. Operating Equipment

To be purchased:

None

To be rented:

None

To be furnished by the Operator:

	Value	Depreciation per month
1 5-ton Plymouth Locomotive	$7,287.05	
2 Eimco 12B Mucking Machines	5,674.40	
15 C.S. Cars - 20 cubic foot Rocker Dump Cars	3,660.00	
2 Mancha 1½-ton Locomotives	6,690.96	
4 Batteries for above locomotives	5,566.80	
2 Charging Panels	1,821.96	
2 A.M.D. Car Transfers	900.00	
1 Buffalo Forge Blower, 15 H.P. or equivalent	375.00	
1 Clarage Blower, 7 H.P. or equivalent	275.00	
Starting Equipment for Blowers	175.00	
2 Timber Trucks	236.78	
4 Jackleg Type Pusher Drills at $505.00 each	2,020.00	
4 Line Oilers at $17.54 each	70.16	
1 R-48 Stoper	670.00	
1 Water Pump	153.02	
1 Track Jack and 1 Rail Bender	90.00	
Total	$35,666.13	
Market value - 80%	$28,532.90	
(6,000 feet, 16 months, equals 375 feet per month. Cost - $1.27 per foot)		
Depreciation per month		$475.54

5. Rehabilitation and Repairs

None

6. New Buildings, Improvements, Installations

Schedule and estimate of cost waived.

7. Miscellaneous

Schedule and estimate of cost waived.

8. Contingencies $5,000.00

ANNEX I

The Calera Mining Company is entitled by right of purchase to possession of the following patented mining claims and by right of possession to the unpatented mining claims listed below:

Patented Mining Claims:

Name	Lot No.
Brown Bear	1592
St. Louis	1592
Lemhi	1592
Iowa	1592
Dandy No. 2	1592
Buckeye	1592
McKinley	1980
Indian Quartz	2009
Blacktail	
Blacktail No. 2	
Catherine	
Anna	
Dandy	
Idaho	
Uncle Sam	

Unpatented Mining Claims:

Name	Inst. No.	Book No.	Page No.
Chelan	59253	2	64
Chelan No. 1	59252	2	63
Chelan No. 2	63643	2	251
Chelan No. 3	63644	2	252
Chelan No. 15	64063	2	283
Old Gold	59040	3	2
Amended	74580	4	229
Chelan No. 85			
Chelan No. 4			
Chelan No. 7			
Chelan No. 57			
Jaycee			

All recorded in the Court House at Salmon, Lemhi County, Idaho.

2 copies

400 File

CALARA MINING COMPANY
DOCKET No. DMEA -3143

Estimate of Costs

TRENCHING

	Labor	Supplies	Total	Cost per hr.
Bulldozer, 864 hours at $10.00 per hour.(D7 or equivalent, Includes operator, fuel, oil,etc.) 11 trenches			$8,640.00	
Sampling and mapping. 250 hours at $2.50 per hour	875.00		875.00	
Surveying and supervision. 150 hours at $2.50 per hour	375.00		375.00	
General for Project	127.00	8.00	135.00	
Insurance, Soc.Sec. Compensation,etc.	118.00		118.00	
Sample sacks, 300 at $0.40 each	1,	120.00	120.00	
	1,495.00	128.00	10,263.00	$11.878

SURFACE DIAMOND DRILLING (AX holes)

				Cost per ft.
Approximately 8,700 feet at $6.50			56,550.00	
Reaming and cementing. 1,700 feet at $2.50 per foot			4,250.00	6.488
Sampling 440 hours at $2.50 per hr.	1,100.00		1,100.00	
Logging cores, 440 hours at $2.50 per hour	1,100.00		1,100.00	
Surveying 50 hours at $2.50 per hr.	125.00		125.00	
General for Project	238.00	16.00	252.00	
Insurance, Soc.Sec. Compensation,etc.	220.00		220.00	
Core boxes, 200 at $5.00 each		1,000.00	1,000.00	
Sample sacks. 500 at $0.40 each		200.00	200.00	6.960
Total	2,781.00	1,216.00	64,798.00	7.448

UNDERGROUND DIAMOND DRILLING (AX hole)

Approximately 10,500 feet of hole at $3.00 per foot (includes machines, operators, power,upkeep,Ins.Etc.)			31,500.00
Logging cores, layout,supervision. 840 hours at $2.50 per hour	2,100.00		2,100.00
General for Project	213.00	14.00	227.00
Core boxes, 250 at $5.00 each		1,250.00	1,250.00
Sample sacks, 600 at $0.40 each		240.00	240.00
Insurance. Soc.Sec.Compensation,etc.	198.00		198.00
Total	2,511.00	1,504.00	35,515.00

DRIFTING AND CROSSCUTTING. (5,000 Ft. timbered and 1,000 ft. untimbered)

Rock Breaking

	Labor	Supplies	Total Cost	per ft.
4 miners, 6 day week, 400 days	$34,270.00		$34,270.00	$5.712
4 muckers	34,270.00		34,270.00	5.712
Powder man, 3¼ hrs. per day	2,908.00		2,908.00	0.485
Compressor man, 6½ hrs. day	4,728.00	$ 7,272.00	12,000.00	2.000
Explosives, fuse,caps.		15,000.00	15,000.00	2.500
Steel and bits	1,892.00	5,608.00	7,500.00	1.250
Track. 20# rail at $175.00 per ton (includes soikes,bolts,fishplates and 50% salvage allowance)		3,500.00	3,500.00	0.583
Air & water pipe, 3" & 1½" at $1.25 & $0.60/ft. 50% salvage allowancw		5,800.00	5,800.00	0.966
Air & water hose & vent pipe, misc.		9,120.00	9,120.00	1.520
Drill repairs		1,260.00	1,260.00	0.210
Total rock breaking	$78,068.00	47,560.00	$125.628.00	20.938

Tramming

Trammers and nippers. 16 hrs.per day	15,520.00		15,520.00	2.587
Trackmen. 4 hours per day	3,152.00		3,152.00	0.525
Dumpman 3 hours per day	2,364.00		2,364.00	0.394
Mucking machine repairs	428,00	480.00	908.00	0.151
Battery & Locomotive repairs		1,062.00	1,062.00	0.177
Car repairs	360.00	284.00	644.00	0.107
Handling supplies on surface	1,576.00		1,576.00	0.263
Ties	788.00	1,200.00	1,988.00	0.332
Total for tramming	$24,188.00	3,026.00	27,214.00	4,536

General for drifting

Small tools		1,200.00	1,200.00	0.200
Miners lamps	788.00	296.00	1,084.00	0.181
Electrician	1,576.00		1,576.00	0.263
Greasing and oiling	2,364.00	1,200.00	3,564.00	0.594
Ditch cleaning	1,576.00		1,576.00	0.263
Safety & Sanitation		400.00	400.00	0.066
Supervision(jigger bosses & foreman)	7,768.00		7,768.00	1.295
Engineering & Geology	4,000.00		4,000.00	0.666
Power (fans and mancha)		640.00	640.00	0.107
Electricial installations		800.00	800.00	0.133
Total general	$18,072.00	4,536.00	22,608.00	3.768

Timbering (5,000 ft.normal)

Labor 16 hrs. at $2.42, 333 days $6.33 per foot	12,900.00	18,750.00	31,650.00	5.275
Heavy timbering 750 feet. $6.34/ft.	2,748.00	2,000.00	4,748.00	0.792
Spiling, 500 ft. at $20.00/ft.	7,143.00	2,857.00	10,000.00	1.666
Timber framing	6,304.0 0		6,304.00	1.050
Total for timbering	29,097.00	23,607.00	52,702.00	8.783

General Project	14,448.00	969.00	15,417.00	
Amortization			7,620.00	
Social Security, Compen sation,etc			14,724.00	
Total for drifting & Xcut			$265,913.00	44.319

General for Projec[redacted]

	Labor	Supplies	Total	Cost per foot
Accounting	$4,032.00		$4,032.00	0.672
Purchasing, stenographer, etc.	4,032.00		4.032.00	0.672
Holidays and vacations	5,633.00		5,633.00	0.939
Transportation. (bus)	1,327.00	1,007.00	2,334.00	0.389
Total	$15,024.00	1,007.00	$16,031.00	2.672

Distribution of above.			
Trenching	127.00	8.00	135.00
Surface Diamond Drilling	236.00	16.00	252.00
Underground Diamond Drilling	213.00	14.00	227.00
Drifting, crosscutting, timbering	14,448.00	969.00	15,417.000
Total	15,024.00	1,007.00	16,031.00

Social Security, Compensation, Etc. Salary and wages $176,684.00

Social Security	$2,650.26	
Unemployment	4,437.78	
Compensation	5,258.11	
Liability	408.90	
Health and Welfare	2,167.75	
Group Life Insurance	336.49	
Total	15,259.29	$15,260.00

Distribution of above	
Trenching	118.00
Surface Diamond Drilling	220.00
Underground Diamond Drilling	198.00
Drifting, crosscutt ng, timbering	14,724.00
Total	$15,260.00

Assaying		
Trenching, 700 samples at $3.00 each	2,100.00	
Surface Diamond Drilling,		
1,700 sludge samples at $3.00 each	5,100.00	
700 core samples at $3.00 each	2,100.00	
Underground Diamond Drilling,		
3,500 samples at $3.00 each	10,500.00	
Drifting and Crosscutting		
2,400 samples at $3.00 each	7,200.00	
Total 9,000 samples	$27,000.00	$4.50

Drifting and Crosscutting total

Rock Breaking	125,628 ~~$134,928.00~~	
Tramming	27,214.00	
General for Drifting & Xcutting	22,608.00	
General for Project	15,417.00	
Social Security, Compensation, etc.	14,724.00	
Amortization	7,620.00	
Total	~~222,511.00~~ 213,210.00	~~$37,085~~ 35,535

Totals

Trenching, 864 hours	$10,263.00	Cost per hour	$11.878
Surface Diamond Drilling, 8,700 feet	64,797.00	Cost per foot	7.448
Underground Diamond Drilling, 10,500 ft.	35,515.00	Cost per foot	3.382
Drifting and Crosscutting	213,211.00		
6,000 feet, 5 X 7 feet in the clear	~~222,511.00~~	Cost per foot	37,085
Normal timbering. 5,000 feet at			
$6.33 per foot plus framing	37,954.00	Cost per foot	6,325
Heavy timbering, 750 feet at			
$6.34 per foot	4,750.00	Cost per foot	0.792
Spiling, 500 feet at $20.00 per foot	10,000.00	Cost per fpot	1.666
Assaying, 9,000 samples at $3.00 each	27,000.00		
	$412.790.00		
	403.490.00		

Cost of 6,000 feet of timbered drifts and crosscuts, ~~$275,215.00~~ 265,913.00

Cost per foot. ~~$45.869~~ 44.319

CALERA MINING COMPANY

730 FIFTH AVENUE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 13 1953

NEW YORK 19, N.Y. August 12 1953

Mr. Robert E. Adams, Chief
Operations Control & Statistics Division
Defense Minerales Exploration Administration
Washington 25, D. C.

Dear Mr. Adams:

Enclosed please find 3 copies of our application for the DMEA loan for Calera Mining Company-Blackbird Division located at Cobalt, Idaho. I believe that the application is quite complete - however, if there is any additional information required, we will be pleased to add to it in any way. You will note that I have sent one copy of the application to Mr. A. E. Weissenborn, Executive Officer, D.M.E.A. in Spokane, Washington.

There is only one point which I would like to comment on at this time and that is in respect to the matter of apportionment of expense and, in particular, Section 7 (d) in the DMEA ORDER-1. This section states that "In the event that two or more of the minerals named in this section are the subject of the proposed exploration, the allowable percentage shall be apportioned between them." While I was in Washington recently, I was told that some of the previous cobalt contracts had been concluded on the basis of 70% Government participation since the exploration was for both cobalt and copper. We will explore for both cobalt and copper at the Blackbird - however, I would like to state that our actual proportion of copper to cobalt in point of value is about one to four, and it seems that a fair apportionment would be about 82% Government participation.

I note that in your question and answer booklet, an actual example is shown and the arithmetical average of the two percentages is used. Actually, our main exploration is for cobalt, and copper is only a very minor consideration, although admittedly, of some value and importance. Part of our exploration program is pointed towards exploring some of our property to the north of our present workings. Results that we have obtained near this area indicate that the ratio of copper to cobalt is much lower than one to four and, indeed, Dr. Vhay, USGS geologist, has commented on this point in his reports. It would seem to us as though this condition should be taken into consideration in arriving at the overall apportionment of exploration expense and we respectfully submit these points for your consideration.

Yours sincerely

Vinton H. Clarke
Vice President

cc:AEWeissenborn
EBDouglas

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED
AUG 13 1953

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

Not to be filled in by applicant

Docket No. DMEA - 3143
Metal or Mineral
Date Received 8-13-53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Calera Mining Company, Blackbird Division
730 Fifth Avenue, New York 19, N. Y.

Mine Address: Cobalt, Idaho

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

See Attached Sheets

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

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

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

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 12th, 1953.

CALERA MINING COMPANY-BLACKBIRD DIVISION
(Applicant)

By Vinton H. Clarke

Vinton H. Clarke

Vice Pres. in Charge of Mining

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

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

CALERA MINING COMPANY

730 FIFTH AVENUE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 13 1953

NEW YORK 19, N.Y. August 7 1953

APPLICATION FOR AID IN AN EXPLORATION PROJECT,

PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950 AS AMENDED.

1-a. Calera Mining Company, Blackbird Division, Cobalt, Idaho

Corporation; Incorporated in New Jersey

Reeve Schley,	Chairman of the Board	730 Fifth Ave., N. Y. 19, N. Y.
H. H. Sharp,	President	"
E. Richter,	Vice President & Treasurer	
H. A. Pearse,	Vice Pres. in Charge of Metallurgy & Construction	"
V. H. Clarke,	Vice Pres. in Charge of Mining	"
W. T. Holmes,	Secretary	"
G. C. May,	Asst. Secretary & Asst. Treasurer	"

3-a. APPLICANT'S PROPERTY RIGHTS

The Blackbird Mine is owned by Calera Mining Company, a wholly owned subsidiary of Howe Sound Company.

The Calera Mining Company is owner by right of purchase to 39 patented claims, and by right of possession to the unpatented claims.

It is expected that the portion of the exploration program north of the Brown Bear zone will traverse the Brown Bear, St. Louis, and Lemhi, all patented claims, and portions of the Chelan, Chelan No. 1, Chelan No. 2, Chelan No. 3, and the Old Gold, all unpatented claims.

The patented claims; namely: the Brown Bear, St. Louis, and Lemhi; are registered by Mineral Survey No. 1592, dated May 23, 1901. Their location is Township 21 N, R 18 E, Boise Meridian, Section 21.

The date of location, recording, and filing of the unpatented claims follow:

CHELAN (UNPATENTED) INST. NO. 59253

Staked and located July 28, 1943.

Recorded Lemhi County September 24, 1943 in Book 2 of Mining Claims, page 64.

CHELAN NO. 1 (UNPATENTED) INST. NO. 59252

Staked and located July 28, 1943.

Recorded Lemhi County, September 24, 1943 in Book 2 of Mining Claims, page 63.

CHELAN NO. 2 (UNPATENTED) INST. NO. 63643

Staked and located April 25, 1946.

Recorded Lemhi County, June 1, 1946 in Book 2 of Mining Claims, page 251.

CHELAN NO. 3 (UNPATENTED) INST. NO. 63644

Staked and located April 25, 1946.

Recorded Lemhi County, June 1, 1946 in Book 2 of Mining Claims, page 252.

CHELAN NO. 15 (UNPATENTED) INST. NO. 64063

Staked and located June 19, 1946.

Recorded Lemhi County, June 29, 1946 in Book 2 of Mining Claims, page 283.

OLD GOLD (UNPATENTED) INST. NO. 59040

(Recorded Book 3 of Mining Claims page 2.)

AMENDED LOCATION CERTIFICATE NO. 74580, Recorded in Book 4 of Mining Claims, page 229.

The second portion of the exploration program to the hanging wall of the Chicago Ore Body will be driven wholly within patented ground. The crosscutting and drifting will traverse portions of the

McKinley, Iowa, Dandy No. 2, Buckeye, and Indian Quartz, all patented claims.

The McKinley claim is recorded as Mineral Survey No. 1980, dated October 22, 1904. The Iowa, Dandy No. 2, and Buckeye claims are recorded as Mineral Survey No. 1592, dated May 23, 1901. The Indian Quartz claim is recorded as Mineral Survey No. 2009, dated December 16, 1904.

3-b. Blackbird Mine.

3-c. All claims which may benefit by the contemplated work are owned by Calera Mining Company.

3-d. See 3-c.

3-e. No liens or encumbrances.

3-f. See 3-a for the Book and page number of each unpatented claim.

4-a. Original locations in the Blackbird District were made between 1893 and 1899. During these years and in the early 1900's, some 1,400 feet of development was done on claims now incorporated into the Calera Mining Company's holdings.

In 1938, the Uncle Sam Mining and Milling Company leased the property and erected a 75-ton flotation plant. Mining was done on small ore showing in the Uncle Sam Claim, but the lease was dropped in 1940 because of economic conditions.

In 1942, the United States Government became interested in the district in conjunction with its search for strategic minerals. Operating through the United States Bureau of Mines and the United States Geological Survey, many surface bulldozer trenches and approximately 1,100 feet of surface diamond drilling was done. At this same time, the district was mapped by the United States Geological Survey.

In 1943, the Howe Sound Company, operating through its subsidiary, the Calera Mining Company, became actively interested. A diamond drilling program was undertaken in this year, supplementing the work done by the Government agencies. A manpower shortage during the war caused a delay of further exploration until July, 1945, when the Calera Mining Company started developing the mine.

The present underground workings of the Blackbird Mine have been driven, roughly, northwesterly along the general strike of the ore-enclosing rocks for a distance of approximately 6,500 feet. Zones of mineralization have been disclosed in many places along its entire length, and two sizable ore bodies have been brought into production. These are the Chicago and the Brown Bear.

The Chicago zone has been opened up on four levels; namely: 6850, 7000, 7100, and 7200 Levels, and is indicated to be 1,800 feet long, at least 400 feet in vertical height, and averages 15-20 feet in width.

The Brown Bear Zone has features distinctly different from those of the Chicago. Here a series of north striking ore pods, which dip nearly vertical and plunge 30-35 degrees north, occur along a northwest trending shear. This zone has been opened up on the 6850, 7100, 7200, 7300, and 7400 Levels, a vertical distance of about 600 feet. The length

along the northwest shear is approximately 1,000 feet, and many of the pods are 20-30 feet wide.

In 1950 and 1951, the Geochemical Branch of the United States Geological Survey made extensive geochemical surveys in the district. The results of this survey indicate favorable exploration ground on this Company's holdings.

In developing the Blackbird Mine, the Calera Mining Company has performed the following work:

Surface diamond drilling	10,000 feet approximately
Underground diamond drilling	36,090 feet
Underground drifting and crosscutting	25,705 feet
Underground shafts and raises	9,636 feet

Production has been started from the Chicago and Brown Bear zones. At this writing, 38 stopes have been prepared. The stoping method has been cut and fill, with the fill material supplies from the tailings from the milling operation.

All mine workings are accessible for examination.

4-b. No production has been made from areas to be explored.

Production from the Chicago and Brown Bear zones to August 1, 1953, was 162,724 tons at a grade of .61 percent cobalt and 1.37 percent copper. July production was 5,988 tons at .58% cobalt and 1.41% copper

The last calculation of ore reserves was made May 1, 1952. On that date, total reserves in developed areas amounted to 1,764,330 tons, having an average assay of 0.70 percent cobalt and 1.41 percent copper; of which 720,410 tons is positive normal ore, 86,740 tons is positive oxidized ore, 919,620 tons is probable normal ore, and 37,560 tons is

probable oxidized ore.

4-c. Metamorphosed sediments of the Pre-Cambrian Yellowjacket formation make up the rocks of the Blackbird District. They consist chiefly of folded quartzitic and argillitic rock, and have been intruded by numerous basic dikes; and in the northern part of the district, the sediments are cut by granitic rock of the Idaho Batholith.

Near the center of the district, where the Blackbird Mine is located, the argillaceous quartzite has been intensely folded, sheared, and in places mildly brecciated with the development of many schistose zones. Practically all of the schistose zones have some mineralization, and many are of ore grade. These mineralized zones constitute the ore deposits of the mine.

For a full description of the cobalt deposits of the Blackbird District, please refer to Strategic Minerals Investigations Preliminary Report 3-219 by Dr. J. S. Vhay of the United States Geological Survey. Our only copies of this report are in use, but copies should be available at the appropriate offices.

In regard to our reasons for seeking government aid, we feel that with our surface plant completed for a daily capacity of 1,000 tons per day, that it is most desirable to determine more accurately the potential of promising areas adjacent to our developed sections.

4-d. This exploratory work will be on claims adjacent to other claims owned by this Company, which are now in production. Present roads, shipping facilities, sources of supply, and housing facilities are adequate to take care of this work.

4-e. The present sources of manpower, material, supplies, equipment, water, and power in this vicinity are sufficient.

5-a. Cobalt principally, with small quantities of nickel and copper.

5-b. The Calera Mining Company has very extensive holdings in the center of the Blackbird Mining District. Work by the United States Geological Survey and this Company indicate favorable exploration possibilities in many sections of our holdings. In our opinion, the two areas which offer the greatest possibility of finding additional ore are: first, north of our present Brown Bear workings; and a second, a parallel zone approximately 800-1,000 feet to the hanging wall, or northeast of our Chicago Ore Body.

In exploring the area north of our Brown Bear Ore Body, we feel that four steps are necessary. The findings in each successive step would determine the procedure of subsequent steps. The four proposed steps are:

(1) Surface trenching at 300-feet intervals along the strike of the favorable zone, as has been indicated by geochemical prospecting.

(2) Surface diamond drilling from the bulldozer trenches according to mineralized exposures.

(3) Extension of the present 7400 Level North Drift 4,000 feet in a northerly direction, the exact location of which would be determined by the surface diamond drilling. The proposed location of the exploration drifts and crosscuts are shown on the accompanying maps.

(4) Underground diamond drilling at 50 to 100-foot intervals to outline the ore zones, and to determine the grade of same.

In exploring the parallel zone to the hanging wall of our Chicago Ore Body, we feel that the four above mentioned steps are likewise desir-

able. This area, like the one to the north, has been shown to be favorable by preliminary trenching, mapping, and geochemical prospecting. We would propose:

(1) Further surface trenching to determine the extent, strike, dip, and plunge of the surface exposures.

(2) Surface diamond drilling to further delineate the mineralized zones for projection to the underground project.

(3) Crosscutting from the central crosscut of the Chicago Ore Body on the 7100 Level an estimated distance of 1,200 feet, then drifting approximately 800 feet along the ore zone.

(4) Underground diamond drilling would follow the drifting to outline ore pods and to determine grade of ore found.

5-c. 14 days - 24 months.

5-d. The Calera Mining Company is owned 100 percent by Howe Sound Company. The parent company operates mining properties in Canada, Mexico, and the United States. The operating staff of the Calera Mining Company was chiefly drawn from other operating units of Howe Sound Company. They have supervised the exploration and development of the present mine, in addition to construction of a 1,000-ton mill, shop buildings, housing and camp facilities at a cost of approximately seven and one-half million dollars.

6-a. Independent Contracts.

It is proposed to contract the surface diamond drilling. This

work will be done from surface trenches.

8,700 feet @ $6.50 per foot $56,550.00

6-b to 6-h Inclusive.

Surface trenching at 300-foot intervals. Estimate 11 trenches. All work to be performed by Calera Mining Company.

Equipment used: D-7 Caterpillar Dozer

Estimated Hours Required: 864 @ $10.00/hr. $8,640.00

Underground diamond drilling to be performed by Calera Mining Company for 7400 and 7100 Level exploration along drifts only (excluding crosscutting)

Drilling at 50-foot to 100-foot intervals

Estimate 10,500 feet @ $3.00/ft. $31,500.00

Underground drifting and crosscutting. All work to be performed by Calera Mining Company extending present 7400 Level 4,000 feet, extending present 7100 Level to hanging wall zone and drifting along zone 2,000 feet

Total drifting and crosscutting in both areas: 6,000 feet

Assume 1,000 feet untimbered @ $56.85/ft. $56,850.00

Assume 5,000 feet timbered @ $67.85/ft. $339,250.00

TOTAL $492,790.00

Complete facilities and equipment exist at the property for carrying on the project.

No preparatory work need be done for the project.

DETAILS OF UNDERGROUND DRIFTING COST PER FOOT

ROCK BREAKING

Labor - Regular	$ 15.00
Labor - Bonus	2.50
Explosives	4.00
Nipping	3.00
Drill and Mucking Machine Repairs	1.50
Drill Steel and Bits	2.00
Ventilation Pipe	2.50
Air and Water Lines	3.00
Air - Compressed	2.25
Track	1.50
Other Supplies	.60
Sub Total	$ 37.85
Tramming	$ 3.00
Timbering Supplies	6.00
Timbering Labor	5.00
* General Mine Overhead and Engineering	15.00
Depreciation of Equipment	1.00
	$ 67.85

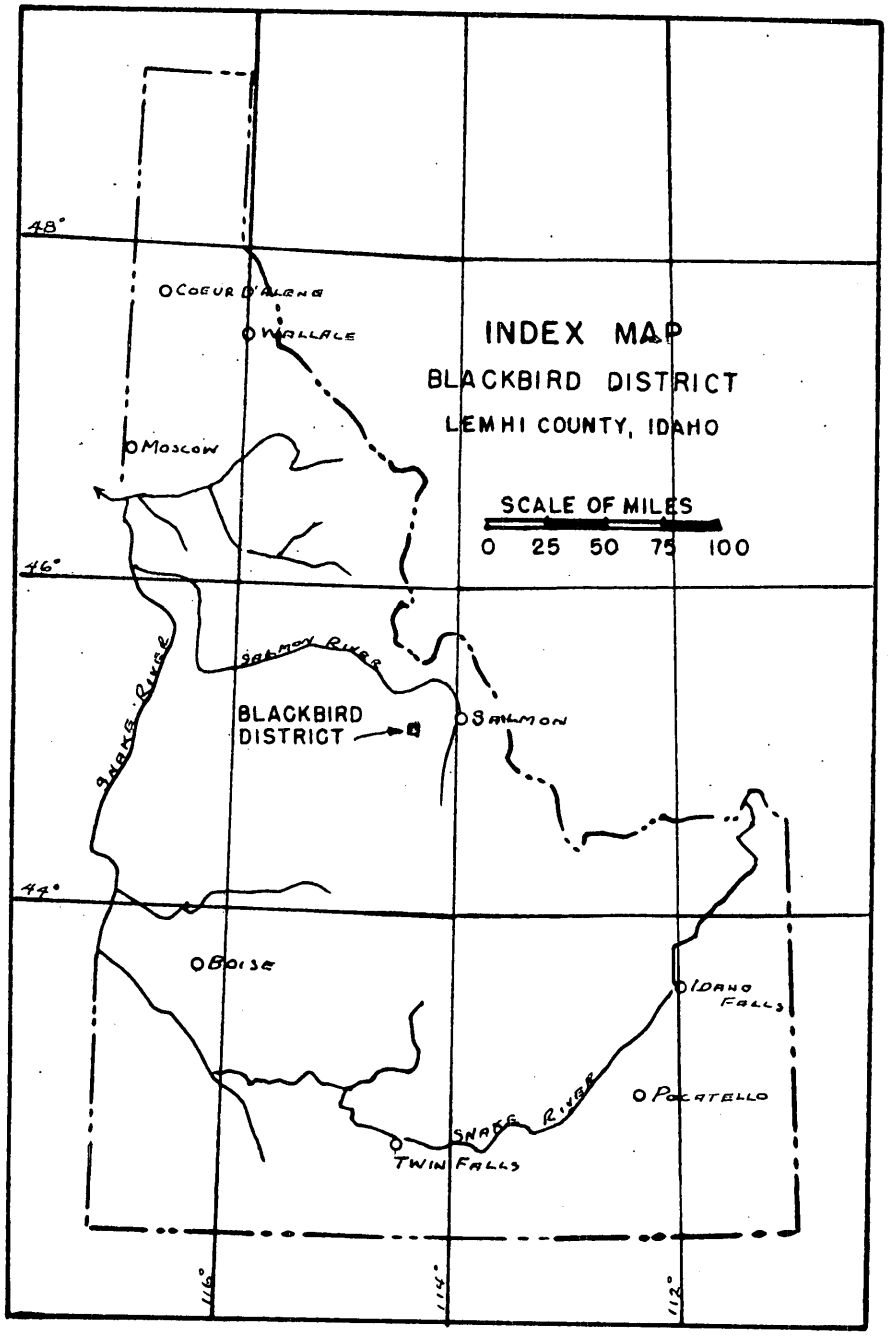
* General Mine Overhead comprises underground tools, electric lights, miners' lamps, power feeders, blasting circuits, Tugger hoists, sanitation, drainage, ventilation, level cleanup, oiling and greasing, geology, superintendence, shift bosses, safety and first aid, sampling, assaying, engineering, surveying,

proportion of accounting and warehouse, handling supplies on surface, bus transportation, workmen's compensation, payroll taxes, etc.

7-a. Yes.

7-b. Money.

Claims Map.
Map No. 2, to
Rept. Pertaining to
Leases Nos. from Applicant
Aug. 28, 1953



DMEA-3143

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

File - DME 3143
Calera -

Mr. Johnson -

Cobalt concentrate
grade at Calera,
(DME A-3143) was -
Rand F.T. Report
Sept. 1958 15.6 % Co.

Bureau of Mines, Bull 585 -
p. 7 U.S. States -
at Calera (Howe Sound)
Co-Cobalt refinery, was
cobalt concentrate -
Average grade 17.5 % Co.
Bureau of Mines, Salt Lake Station, re-
ported, over last 2 years of question, av. grade 16% Co;
E. & M. J. Metal & Mineral Markets
June 15, 1961, quotes:
Cobalt metal, 500 lbs lots - 1050 lb.
Cobalt ore, lb. cobalt, per market
10% (n) 60¢
11% (n) 70¢
12% (n) 80¢

S.P.T.
6/23/61

UNITED STATES
DEPARTMENT OF THE INTERIOR

~~DEFENSE MINERALS EXPLORATION ADMINISTRATION~~
Office of Minerals Exploration
So. 157 Howard Street
Spokane 4, Washington
December 1, 1958

OFFICIAL FILE COPY O. M. E. RECEIVED DEC 9 1958		
DATE	INITIALS	CODE
12/9	C	220
12/9	eof	130
"	JOY	160
12/16	JHB	130
12/16	C	220
12/17	WSM	400
12/17	EOT	800

Mr. George C. Selfridge, Chairman
Operating Committee, OME
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Enclosed are three copies of a Field Team final report on this project. (See Folder #6) maps & drill logs

Contract work started February 1, 1954, and was terminated by mutual agreement December 9, 1956. The work completed included 864 hours of bulldozer trenching, 8,576.5 feet of surface diamond drilling, 7,283.5 feet of underground diamond drilling, 1,145 feet of reaming, 3,369 feet of drifting and crosscutting, 2,195.3 feet of normal timbering, 750 feet of heavy timbering, 500 feet of spiling, placing 348 rock bolts and making 4,684 assays. The total approved cost of the project was $265,519.83, of which the Government's share was 70 percent or $185,863.88. The final royalty check completing repayment of the Government's contribution was received during the final typing of the report.

Three potential ore zones were explored: the Blacktail, the Horseshoe-Old Gold, and Indian Quartz zones. The Blacktail zone is about 1,200 feet long and ranges in average width from 35 feet in the north portion to 10 feet in the south. It is estimated to contain 731,854 tons of indicated and inferred ore with an average grade of 0.80 percent cobalt and 2.83 percent copper. The Horseshoe-Old Gold zone is about 800 feet long. Partial exploration of this zone indicates a potentially large tonnage of ore averaging about 1 percent cobalt and slightly less copper. The Indian Quartz zone was only moderately explored by surface trenching and diamond drilling, insufficient to estimate its true potential.

It is concluded that further exploration of the Horsetail-Old Gold zone and the Indian Quartz zone is warranted.

OME Reviewer 12-16-58 (date)

By Field Team, Region I

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures
cc: USBM(2); USGS(SRO); F. C. Canney

DEPARTMENT OF THE INTERIOR

OFFICE OF MINERALS EXPLORATION

FIELD TEAM, REGION I

EXTRA COPY
O. M. E.
RECEIVED DEC 9 1958

DATE	INITIALS	CODE
12/16	JB	130
		220

F.T.s
FINAL REPORT

FINAL REPORT

Contract Idm-E645

by

David D. Walker
Mining Engineer
U. S. Bureau of Mines

Howard B. Nickelson and
Donald C. Alvord
Geologists
U. S. Geological Survey

CALERA MINING COMPANY

Cobalt, Idaho

Docket No.:	DMEA-3143
Commodity:	Cobalt-Copper
Contract date:	December 9, 1953
Termination date:	December 9, 1956

Reviewed by
OME OPERATING COMMITTEE
12-16-58
(date)

BLACKBIRD MINE
Blackbird Mining District
Lemhi County, Idaho

Spokane, Washington

November 1958

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APPENDIX I - Drill logs of holes completed under Contract Idm-E645

ILLUSTRATIONS

Figure		Map in pocket
1	Index Map	
2	Principal Cobalt - Copper Zones (showing areas covered by Sheets 1 through 10)	
Plate		
1	Claim map showing location of DMEA project work	
Sheet No.		
1	Surface Geologic Map	
2	do.	
3	do.	
4	do.	
4A	Underground Geologic Map 7400' Level	
4B	Underground Geologic Map of the 7540 Level and 7674 Level	
5	Surface Geologic Map	
5A	Underground Geologic Map 7400' Level	
6	Surface Geologic Map	
6A	Underground Geologic Map 7400' Level	
7	Surface Geologic Map	
7A	Underground Geologic Map 7400' Level	
8	Surface Geologic Map	
9	do.	
10	do.	

ILLUSTRATIONS (Cont'd.)

Section		Map in pocket
B-B'	Vertical Section through B-B'	
C-C'	Vertical Section through C-C'	
D-D'	Vertical Section through D-D'	
Plate		
2	Blackbird Concentrator Flowsheet	

FINAL REPORT

CALERA MINING COMPANY
Blackbird Mine
Blackbird Mining District
Lemhi County, Idaho

Contract Idm-E645

* * * *

INTRODUCTION

This report describes an exploration project conducted jointly by the Defense Minerals Exploration Administration and the Calera Mining Company (Blackbird Division) to explore areas adjacent to the Blackbird mine for copper and cobalt. The mine is in the Blackbird Mining District, Lemhi County, Idaho.

Summary

The purpose of the project was to test by surface and underground exploration three promising areas of cobalt-copper mineralization in the vicinity of the Blackbird mine. The exploration program was based on the geological mapping of the area by J. S. Vhay of the U. S. Geological Survey and the results of a geochemical study of soil samples made in 1951 and 1952 by H. E. Hawkes and F. C. Canney, also of the U. S. Geological Survey. This study was supplemented with additional work done by the company and the U. S. Bureau of Mines. The three mineralized structures explored were the Indian Quartz Zone, Horseshoe-Old Gold Zone, and Blacktail Zone.

Contract work completed consisted of 864 hours of bulldozer trenching, 8,576.5 feet of surface and 7,283.5 feet of underground diamond drilling, 1,145 feet of reaming, 3,369 feet of drift and crosscut, framing 447 sets, 2,195.3 feet of normal timber, 750 feet of heavy timber, 500 feet of spiling, 348 rock bolts, and 4,684 assays.

The total cost of the work amounted to $265,519.83 and the Government's participation was 70 percent or $185,863.88. The Government has been repaid $194,226.70 in royalties as of September 30, 1958.

Normal mine development, following the DMEA exploration, was successful in blocking out an estimated 732,000 tons of measured and indicated ore averaging 0.80 percent cobalt and 2.83 percent copper.

Recommendations

Certification of a Discovery or Development was issued on September 16, 1957. A number of good exploration targets exist on the property of the Calera Mining Company and Government participation in further exploration is warranted.

LOCATION AND ACCESSIBILITY

The Calera property is in the Blackbird Mining District, Lemhi County, Idaho (fig. 1). The claims cover a large area in the central portion of the district in T. 21 N., R. 18 E. Boise meridian. Salmon, Idaho, the nearest town, is about 50 miles from the property via Williams Creek road. Challis, Idaho, is about 60 miles southeast of the property via Morgan Creek road. There is a railhead at Mackay, Idaho, about 120 miles south of the area, and at Darby, Montana, about 113 miles north of the mine. Mackay is the shipping point due to better roads, and because it is closer to the company's refinery at Salt Lake City, Utah. The main roads at the mine and the road via Morgan Creek to paved U. S. Highway 93 are graveled.

The topography in the vicinity of the mine is of moderate to sharp relief; altitudes range from 5,000 to 7,500 feet. Most of the slopes are overlain by a thick mantle of soil that makes geologic reconnaissance difficult. Abundant timber growth, mainly lodgepole pine, covers the area but does not provide the mine timber.

Climatic conditions in the area vary according to the altitude. At higher altitudes, similar to the area immediately surrounding the mine, the climate is moderate to severe. Snow can be expected from early September to mid-June and it has been known to snow during July and August.

THE PROPERTY

The Calera property is composed of a large group of patented and unpatented claims. Only 30 of these claims were included in the DMEA contract; they are shown on the accompanying claim map (pl. 1). The patented claims are owned outright and the unpatented claims are held by right of location.

The unpatented claims included in the contract are recorded at the courthouse in Salmon City, Lemhi County, Idaho, as follows:

Name	Book	Page
Jaycee	1	607
Chelan	2	64
Chelan No. 1	2	63
Chelan No. 2	2	251
Chelan No. 3	2	252
Chelan No. 7	2	263
Chelan No. 15	2	283
Chelan No. 4	3	519-520
Chelan No. 5	3	520
Old Gold	3	2
Chelan No. 57	4	25
Chelan No. 85	4	221
Jaycee Amended	4	222
Old Gold Amended	4	229

The patented mining claims included in the contract are as follows:

Name	Patent No.
Anna	1592
Blacktail	1592
Blacktail No. 2	1592
Brown Bear	1592
Buckeye	1592
Catherine	1592
Dandy	1592
Dandy No. 2	1592
Idaho	1592
Iowa	1592
Lemhi	1592
St. Louis	1592
McKinley	1980
Indian Quartz	2009
Anaconda*	2557
Copper Gold	2557
Panther*	2557
Queen**	2128

*Only those portions of the Anaconda and Panther claims which overlap the Copper Gold claim are included in the contract agreement.

**The Queen Patented claim was transferred from the DMEA Project Contract No. Idm-E334, Northfield Mines, Inc., to resolve a conflict concerning ownership of ground in the area of the David No. 18 claim. The mutual agreement between the two companies with the consent of the Government was made by Quit Claim Deed, dated January 10, 1956. The ground is also delineated by four planes illustrated on sheets 7 and 10 and described in Annex I of the contract.

History

Gold was discovered in the Blackbird District in 1893, and in 1896 copper was found. The first development work in the district started in 1899, and by 1901 the Blackbird Copper-Gold Mining Company had completed 1,400 feet of drifts and crosscuts on its Blackbird property. Good ore was found and tentative plans for a smelter were made. Transportation costs proved to be too high, however, and all work on the property was suspended.

John Beliel located the first cobalt claims along Blackbird Creek in 1901. The group was extended in later years, but no development work was started until 1915 when the Haynes-Stellite Company acquired an interest. About 4,000 tons of ore were mined before the mine was closed in 1920.

In 1938 the Uncle Sam Mining Company obtained a lease with option on the Blackbird Copper-Gold Mining Company property and produced about 563,539 tons of ore and concentrate; operations ceased in 1941 (Anderson, Alfred L., A Preliminary Report of the Cobalt Deposits in the Blackbird District, Lemhi County, Idaho: Idaho Bur. Mines and Geol. Pamph. 61, p. 7-8, 1943).

In 1942 the United States Government became interested in the district in conjunction with its search for strategic minerals. From then through 1952 the U. S. Bureau of Mines and the U. S. Geological Survey conducted programs of mapping, bulldozer trenching, diamond drilling, and geochemical surveying.

In 1943 the Howe Sound Company operating through its subsidiary, the Calera Mining Company, became actively interested. A diamond drilling program was undertaken, supplementing the work done by the Government agencies. A manpower shortage during the war caused a delay of further exploration until July 1945, when the company started developing the mine. By December 1955 the company was mining about 1,000 tons per day.

On August 17, 1953, Calera Mining Company applied for DMEA assistance, and on December 9, 1953, a contract was granted to explore ground immediately northwest of the existing workings along the extension of the Chicago zone, the Brown Bear zone, and a zone 800 feet to the northeast and parallel to the Chicago zone. This exploration work was based in part on the results of geochemical surveys by the company and the U. S. Geological Survey.

Mine Workings and Plant

The mine is developed by 11 levels. Eight of these levels, the 6750, 6850, 7000, 7100, 7200, 7300, 7400, and 7540, take their designations from their respective elevations. Three other levels are driven from the opposite side of the hill and form the principal development of the Blacktail ore zone. They are the 7265, 7125, and 7675. Level interval, except for the Blacktail area, is 100 feet. The workings have a horizontal range of over 4,300 feet, and a vertical range of about 925 feet.

In general the condition of the workings is good, but much maintenance work is necessary. The ground is heavy and needs considerable timber. Spiling is often necessary and 4- by 8-inch timbers must be used to hold the ground. In many places rock bolts and wire mesh have been used and found to be successful.

Natural ventilation is aided by a 30,000 cfm reversible fan and several 5, 10, and 15 hp fans placed where necessary. Drainage is all natural.

The mine plant has three 1450 cfm Joy compressors. The main air line is 8 inches in diameter. There is also a steel and bit shop, repair shop, blacksmith shop, and a 180-man dry.

GEOLOGY

Regional Geology

Joseph B. Umpleby briefly described the Blackbird District in Geology and Ore Deposits of Lemhi County, Idaho, U. S. Geological Survey Bulletin 528, 1913.

The areal geology of this part of the district was mapped by J. S. Vhay (Cobalt-Copper Deposits of the Blackbird Mining District, Lemhi County, Idaho: U. S. Geol. Survey Strategic Minerals Preliminary Report 3-219, 1948).

P. J. Shenon, R. P. Full, H. L. Bauer, and D. M. Snyder, consulting geologists for Northfield Mines, Inc., which owns an adjoining property, spent two summers in the area. Some of their work consisted of studying the district including the Calera property, and a district geologic map (1" = 2000') was prepared.

A geochemical study of soil samples made in 1951-52 is available as a U. S. Geological Survey Open-File Report: F. C. Canney, H. E. Hawkes, G. M. Richmond, and J. S. Vhay, 1953, A preliminary report of geochemical investigations in the Blackbird district, Lemhi County, Idaho, 20 p., 4 pt.

The following discussion was taken freely from Vhay (1948). In the Blackbird District schistose quartz-biotite beds and garnet-chloritoid schists are favorable hosts for copper-cobalt deposits. These rocks, which are apparently dynamo-metamorphosed Beltian sediments, are restricted to a structural unit known as the Blackbird block. This block is roughly rectangular, about 5 miles long and 2 miles wide, and is elongate northward.

The southern part of the Blackbird block is made up of relatively thin beds (1 inch to 1 foot thick) of sandy shale and shaly sandstone which have been metamorphosed to a quartz-biotite

phyllite or schist in which the bedding is still apparent except at the crests of some tight folds and in shear zones. These beds have been tightly compressed and in the west side of the block are in folds whose axial planes are nearly vertical. The axial planes of the folds are tilted to the west in progressively flatter dips as the eastern border of the block is approached. All the folds plunge north at from 30° to 45°.

Garnet and chloritoid schist and interbedded massive quartzite in the northern part of the Blackbird block may have similar structures, but the more intense metamorphism has obliterated the bedding in most places and the folded structures are not apparent. These garnet-chloritoid rocks were thrust southward over the quartz-biotite rocks on a northerly dipping fault. Later this thrust was offset at several places by generally north-trending high-angle faults.

On the west the Blackbird block is delimited by a steeply dipping fault zone, along which are one or more quartz-feldspar porphyry dikes, post-metamorphic and probably Tertiary in age. On the east, along its southern part, the Blackbird block is bordered by an east-dipping fault. Also on the east but along its northern part, the block is bordered, in part, by a low-angle, north-dipping fault. Some geologists, however, think that this part of the boundary is not a fault but represents a change in lithology, grading north from fairly pure quartzites which were unfavorable for the formation of schist to more argillaceous and thin-bedded rocks which folded rather tightly and became schistose under compression. The south end of the Blackbird block is bounded by a contact (probably a fault) with thinly laminated schistose siltstone, in which the schistosity dips eastward, unlike that in the Blackbird block, which dips vertically or steeply westward.

The northern boundary of the Blackbird block is an irregular contact with porphyroblastic gneiss. This gneiss has been called "granite" or "granitic rock" and was considered a part of the Idaho batholith. It is now believed to be a well-feldspathized and recrystallized part of the Belt sedimentary section.

Igneous rocks in this part of the district are limited to basic dikes, now metamorphosed mostly to biotite schist, and the unmetamorphosed quartz-feldspar porphyry dikes. Intrusive quartz monzonite is present in the western part of the Blackbird Mountain quadrangle, about 5 miles west of the mine area.

Ore Deposits

Hydrothermal replacement deposits of copper-cobalt minerals occur within the Blacktail block along three principal sets of shear zones, striking respectively northwest, north, and northeast. Thus far important ore bodies have been found only in the northwest and north-trending ones. Although the shear zones have acted as the principal control of the mineral deposits, the lithology of the folded sedimentary rocks as well as other subsidiary structural features such as the crests of folds and high-angle faults associated with the folding, apparently exerted a secondary control. Thus the intersections of the northwesterly striking with the northerly striking shear zones as well as the intersections of these shear zones with the north-plunging folded sedimentary beds both produced ore bodies which plunge north between 35° and 50°. The strong plunge structure of the ore bodies has been found to be important both in developing and mining these deposits.

Northwest-striking, northeast-dipping shear zones have formed fairly long tabular ore bodies, the best explored of which is the Chicago ore zone (fig. 2). The Chicago zone has a length of about 2,500 feet and widths of from 3 to 30 feet, averaging about 12 feet. In places the ore in this zone has en echelon offsets; the ends of each ore body extend downward parallel to the plunge. Dips to the northeast are from 30° to 80°, averaging about 60°. Other northwest-trending ore zones are the newly developed Blacktail ore bodies (which are apparently on a northwesterly extension of the Chicago shear zone), a southeasterly extension of the Chicago zone north of the Calera mill, a zone exposed in trenches on the Queen and Indian Quartz claims and a possible northwesterly extension of this one called the Gold Coin-Horseshoe zone, the Merle No. 3 and Merle No. 5 zones on the Northfield property, and an unexplored possible one extending between the Bohannon trenches and a gossan zone on the Ella claim.

Groups of north-plunging, podlike ore bodies lie in north-striking, steeply dipping shear zones, in some places where they intersect the northwest-striking shear zones, in other places where they intersect the tightly crumpled crests of folds or high-angle faults associated with the folding.

The Brown Bear ore zone is the best developed of the deposits in north-striking shear zones (fig. 2). The shear zone is about 500 feet wide; its length is not known as most of the development on it has been where it intersects the Chicago zone. There a large number of north-plunging ore bodies have been developed. Much of the highly sheared rock between the pods has been somewhat mineralized, so that much assaying is necessary to determine the cut-off lines of the stopes. Other northerly striking shears containing ore bodies are the Dandy, a broad structure extending, on

the surface, from the northeast end of the Chicago zone north to that on the Indian Quartz claim, and containing a considerable tonnage of relatively low-grade ore; the Uncle Sam zone, relatively narrow but apparently extending north across the north branch of Little Deer Creek; and the Hawkeye zone, relatively broad and containing a number of ore pods on which there has been little development.

There are probably also some mineralized northerly trending shears on the Northfield property. Both the Tinkers Pride and the Bonanza mineralized zones north of Big Deer Creek are also on northerly striking shear zones.

A few mineralized bodies formed on northeasterly striking shear zones are known, but to date none of them has been investigated by drilling or underground work. The northwesterly, northerly, and northeasterly shear zones were all developed before mineralization began as all three types of structures appear to contain the same types of mineralized rock. Post-ore movement on northeasterly trending flat faults and on steeply dipping faults of several strikes has displaced the ore bodies and, in places, has caused considerable difficulty in mining.

The mineralized rock contains pyrite, pyrrhotite, cobaltite, chalcopyrite, safflorite, and a little secondary chalcocite and covellite; gold is present from only a trace to a few hundredths of an ounce per ton. Among the primary nonmetallic minerals are quartz, biotite, chlorite, carbonates (siderite and calcite), muscovite, tourmaline and several phosphates in small amounts.

The order in which the primary minerals have formed has been provisionally worked out as follows: The oldest mineral is barren (bull) quartz, formed either by replacement or metamorphic differentiation. Silicification and the formation of hydrothermal biotite followed; the relative order between the two processes is not known, and where the biotite is formed by recrystallization it is usually accompanied by contemporaneous sugary quartz. Tourmaline was apparently introduced about this time. Deposition of fine-grained cobaltite accompanied or followed the quartz, biotite, and tourmaline in many places. After a period of fracturing, quartz and dull pyrite were formed. Further fracturing was followed by the formation of bright pyrite and chalcopyrite, accompanied by quartz, carbonate, and muscovite; during this period of replacement the earlier, generally fine-grained cobaltite was recrystallized into much coarser crystals and large masses, and some chlorite replaced the earlier formed biotite. The formation of safflorite, replacing some of the cobaltite, and pyrrhotite was slightly later, though perhaps not separated from the main pyrite-chalcopyrite period by any renewed fracturing. Minor amounts of apatite may have formed at this time. After a period of minor fracturing, small stringers of pyrite, calcite, quartz, and probably iron phosphates were formed.

For some reason the cobalt was able to migrate farther into the walls of the shear zones and fractures than was the copper. Also, cobalt is apparently more widely distributed throughout the district than is copper.

On and near the surface, hematite and goethite are abundant in the gossan. In addition to a number of other oxidized minerals there are two varieties of cobalt bloom. Of these, the relatively insoluble erythrite is rare, except on the Sweet Repose dump, where there is a rather large amount. The other, bieberite, though fairly soluble, is common throughout the district as efflorescences on outcrops. The black oxide, heterogenite, was doubtfully identified in a few trenches. In addition to the above cobalt minerals, the oxidation of cobaltite has formed a group of minerals of yellowish to greenish color, which, though containing little, if any, cobalt, seem to be very good indicators of the former presence of cobaltite; these minerals include jarosite, nontronite, scorodite, an iron arsenate probably related to pitticite, and perhaps several others.

One or more of these minerals occurs in the oxidized zone either as solid masses or as a greenish stain on porous sugary quartz. The usual minerals resulting from the oxidation of chalcopyrite, namely malachite, cuprite, and native copper are fairly common near and at the surface. The depth of oxidation is considerable where cobaltite and chalcopyrite are both present; even on steep slopes, such as at the Uncle Sam mine, oxidation is fairly complete to a depth of more than 50 feet. On the gentler upland surfaces (between altitudes of 7,500 to 8,500 feet) oxidation is presumably much deeper, though no mining has yet been attempted under such surfaces. Where cobaltite alone is present, oxidation is less complete, and in some places cobaltite was found on outcrops.

Various combinations of the primary and secondary minerals described above form the different types of mineralized rock found in the district. Except for small amounts of chalcocite, practically all the ore minerals are of primary origin, and secondary enrichment is relatively unimportant economically although veins under the flatter upland surfaces might have fairly rich zones of secondary copper enrichment. The more intensely mineralized material can be grouped into six general types:

(1) Silicified schist of the shear zones, ranging from slightly silicified material to an almost solid mass of quartz retaining relict planes of schistosity; this type may be barren or may have sufficient cobaltite to bring it up to ore grade. Some material of this type has been refractured and pyrite and chalcopyrite introduced to produce type 3.

(2) Thorough replacement of country rock by hydrothermal biotite, with or without a varying amount of sugary quartz. This type of rock, like type 1, in many places contains some cobaltite and rarely chalcopyrite; locally the cobaltite is replaced by considerable safflorite. In places a high-grade biotite-cobaltite schist may be produced.

(3) A mixture of quartz, chalcopyrite, pyrite, cobaltite, and safflorite. The quartz may be a combination of early bull quartz or silicified schist plus younger sugary quartz of about the same age as the chalcopyrite and pyrite. This type is common in the Uncle Sam and Chicago zones and also present in the Hawkeye zone. It may contain considerable safflorite, muscovite, and carbonate.

(4) Heavy sulfide masses, consisting of pyrite, pyrrhotite, chalcopyrite, coarse-grained cobaltite, safflorite; with some biotite, quartz, and carbonate. This type is best exposed in the 7100 adit, where some is high grade, but elsewhere, as in parts of the 7200 adit, it is high in pyrite (and perhaps pyrrhotite) and very low in cobalt and copper.

(5) Broad, moderately sheared zones into which many narrow stringers (1/16 inch to 4 or 5 inches wide) of cobaltite, pyrite, and chalcopyrite are introduced along the planes of schistosity. In the lower Hawkeye adit this type of material is of ore grade.

(6) Heavily tourmalinized and silicified fault breccia in which very fine-grained cobaltite may be disseminated or may occur in small irregular stringers. The tourmaline occurs as a fine-grained mat and may have replaced more than 50 percent of the rock. This is typical of the deposits in the area east of the Blackbird block and it also occurs in a few places within the Blackbird structural block.

Of course much of the mineralized rock is a mixture of two or more of the first four main types listed above. In the type 5 zones of the Hawkeye mine, there are also lenses of type 3.

THE PROJECT

The geologic justification of the program was based on geological mapping by Vhay (1948), the results of a soil sampling study by Canney and others (1953), and work done by the Calera Mining Company. All of this work indicated mineralized zones both parallel to and on the extensions of known ore-bearing structures. The soil sampling was particularly encouraging, anomalies in some places exceeding the anomalies over known ore bodies. The contract was designed to explore three areas believed to be particularly favorable, namely: (1) an area northwest of the known Brown Bear ore zone, now known as the Blacktail zone; (2) an area north of

the Brown Bear ore zone, now known as the Horseshoe-Old Gold zone; and (3) an area northeast of the Chicago ore zone now known as the Indian Quartz zone (fig. 2). All three target areas were amenable to surface exploration by trenching and core drilling and they were so situated that underground exploration and development from existing adit workings of the Blackbird mine was feasible.

The company proposed to explore the Blacktail and Horseshoe-Old Gold zones by surface trenching, surface core drilling, and extending underground work north and northwestward from the end of the 7400 level; and to explore the Indian Quartz zone by surface trenching, core drilling, and extending underground work northeastward from the 7100 level. To accomplish the exploration the company requested 864 hours of bulldozer trenching, 8,700 feet of surface core drilling, 10,500 feet of underground core drilling, 6,000 feet of drifting and crosscutting, and 5,000 feet of timbering at an estimated total cost of $492,790. As originally submitted, the company's cost analysis was not very detailed and some of the costs appeared high. Following discussion with the Field Team, the company submitted a much more detailed cost analysis in which the over-all costs of the same program were estimated to be $448,281.97.

The contract, based on the revised cost estimate, was for $407,340, with Government participation at 70 percent or $285,138. It was set up in two stages on an agreed unit cost basis as follows:

Stage I

Bulldozing surface trenches not in excess of 864 hours. This work consisted of 12 trenches totaling about 9,000 linear feet. It was estimated that 700 samples would be necessary to test mineralized areas.

Surface diamond drilling in 20 holes of AX size, totaling about 8,700 linear feet of hole. An estimated 1,700 feet of reaming and cementing was also allowed. A total of 2,400 sludge and core samples was allotted to Stage I diamond drilling.

Stage II

This stage authorized a maximum of 6,000 feet of drifting and crosscutting, as follows: 2,000 feet to the Blacktail ore zone on the 7400 level, 2,000 feet to the Horseshoe-Old Gold ore zone on the 7400 level, and 2,000 feet to the Indian Quartz ore zone on the 7100 level. The drifting and crosscutting was estimated to require 5,000 feet of timbering of which 750 feet would be heavy timber and 500 feet spiling. It was estimated that the drifting and crosscutting would require the cutting of 2,400 samples.

When the drifts and crosscuts had advanced sufficiently to permit drill setups, then 10,300 feet of underground diamond drilling in the three mineralized areas was to be done. It was estimated that about 3,500 drill core samples would be taken.

Work under the contract was started on February 1, 1954. There were no recesses during the operation, but time for completion was extended 1 year, from December 9, 1955, to December 9, 1956. Although 2,631 feet of drifting remained, the contract was terminated by mutual consent on December 9, 1956.

The work is shown on the accompanying "sheets" at a scale of 1:40 as follows:

Target zone	Sheet Nos. Surface	Sheet Nos. Underground
Blacktail	1, 2, 4, 6, 7	4A, 4B, 6A, 7A
Horseshoe-Old Gold	2, 3, 4, 5, 7, 8	5A, 6A, 7A
Indian Quartz	9, 10	10

The location of the "sheets" is shown on figure 2 and on the sheets.

The logs of the holes drilled under the contract are given in Appendix I.

Blacktail zone.--The work done on the Blacktail zone totaled 2,993½ feet of surface core drilling and about 1,250 feet of trenching. Underground work totaled 2,074 feet of crosscut and drift (7400DN) and 5,114½ feet of core drilling. Sheet 4B also shows the 7540 and 7675 adit levels which were driven by the Operator on its own account to further explore and develop the Blacktail ore body.

Because of severe winter weather Stage I surface work was deferred and Stage II underground work was started instead. This work was started on February 1, 1954, with the 7400 level drift north (7400DN) toward the Blacktail zone. Because the ground in the mineralized zone was badly faulted and broken, it proved unfeasible for the Operator to drive to coordinates 17,290 N-3025 E, the take-off point specified in the contract and instead the work under the contract was started in the footwall from coordinates 17,270 N-2974 E on a general heading of N. 25° W. (sheet 6A). Work on this leg of the 7400DN was stopped on March 1 after an advance of 105 feet and some underground core drilling was done to locate better ground conditions. It was further held up to await the results of surface work in order to position the drift more advantageously.

Surface trenching in the Blacktail zone was begun on March 9, 1934. A gossan zone 40 feet wide was cut in the first trench (798 trench) at coordinates 18,640 N-2420 E, or about 800 feet north of the 7400DN face (sheets 4 and 6). The average depth to bedrock was 10 feet, but, in places, trenches were taken to 20 feet. Core drilling was started in April. The first hole (S-29) was drilled in the 786 (non-NEA) trench and penetrated 39 feet of ore averaging 1.19 percent cobalt and 3.38 percent copper (sheet 4 and section B-B'). Other surface core holes which penetrated significant widths of ore in the Blacktail ore body include S-30, S-32, and S-42 (sections B-B', C-C', and D-D'). Thus the presence of a significant ore body in the Blacktail area was indicated early in the progress of the project.

Work on the 7400DN was resumed in July 1934. In an effort to find firmer ground a new heading was started on a crosscut bearing of N. 30° E. from station 499 and about 125 feet south of the old abandoned 7400DN (sheet 6A). The drift was advanced N. 30° E. a total distance of 240 feet where, at station 501 (sheet 7A), it was turned and drifted in a north-northwest to northwest direction a total distance of about 1,745 feet. It took until November 1935 to complete the advance; during this period, however, the work on the heading was discontinued several times to allow core drilling. Mineralized structures and ore-grade material were encountered at numerous localities along the entire 7400DN, but considerable core drilling was needed to prove ore.

In October 1934 the 7400DN was put on a contract basis, three shifts per day. It was in weak ground which constantly required timber. Until March 1935 drifting was in bad ground.

By March 1935 the heading had been advanced from station 499 (coordinates 17,272 N-2964 E) to a little north of coordinate 18,000 N (sheets 6A and 7A). Most of this leg of the 7400DN can be considered as in ground lying between the north end of the Brown Bear and the Blacktail ore bodies, even though core holes 66 and 67 (sheet 6A) show a continuation of the Brown Bear to at least 17,400 N. This zone is about 700 feet wide (south to north). It is very incompetent, being intensely sheared and broken by numerous strong steeply dipping northerly and northeasterly trending faults and biotite dikes. Mineralized rock is common but is rather discontinuous and low grade. Drilling to the west intersected several somewhat narrow bands of protore which apparently occur along a northerly trending zone of shears. No commercial rock can be assigned to this leg of the 7400DN.

By June the 7400DN heading had been advanced northwesterly to the vicinity of coordinates 18,400 N-2,400 E. The ground exposed by this work is cut by numerous north-trending faults and shears, but several zones of fair grade ore were discovered. Work on the heading was discontinued during much of June and July to allow core drilling. The ore found by this drilling proved to occur in very irregular shaped pods offset by numerous north-trending faults. Due to the complexity of the faulting it was necessary to space most of the drill holes on 25-foot centers. Two pods of mineralized rock, each about 130 feet long and from 2 to 16 feet wide, averaging around 1 percent cobalt and 1 percent copper, were disclosed. It is possible that these pods will be minable.

Work on the 7400DN heading was resumed in August and continued without interruption until early November when the present face (sheet 4A) was attained. Core drilling to the northeast and southwest was started in November and by the end of the month it appeared that a footwall zone of little promise lay to the south of the drift and that a hanging-wall zone of considerable promise lay to the north. Thenceforth drilling was concentrated in the hanging wall. By December 8, three holes had penetrated the Blacktail hanging-wall ore. Hole 65 penetrated 52.5 feet of 2.17 percent cobalt and 4.61 percent copper; hole 70 penetrated 25.5 feet of 1.77 percent copper; and hole 72 penetrated 16.5 feet of 1.30 percent cobalt and 3.08 percent copper. By the end of December drilling into the hanging-wall zone of the Blacktail had outlined an ore body over 400 feet long, averaging 31 feet in width, and approaching a grade of 1 percent cobalt and 2 percent copper. It was apparent that a major discovery had been made.

In January, on its own account, the Operator collared the 74/852DN at coordinates 18,546 N-2,260 E (sheet 4A) to crosscut to and drift on the Blacktail ore body on the 4100 level in the vicinity of the DMEA core drilling. DMEA core drilling of the Blacktail zone was continued into February 1956 with moderate success. Hole 80 was drilled 502 feet northwesterly, or about 350 feet beyond the known limits of the Blacktail ore body, without encountering significant widths of ore past the Blacktail. Some DMEA core drilling at the north and south ends of the Blacktail ore body was continued into April, but no DMEA supported exploration on the Blacktail was done after that time.

The Operator's 74/852DN was completed in the spring of 1956 and in June development of the Blacktail ore body was started in earnest. The 7540 level (sheet 4B) was driven into the zone; power lines, the sand fill system, and access roads were constructed to the opposite side of the hill; and three new portals begun. During the months between June and December the 7675 level (sheet 4B) was extended into the zone; a 7265 adit was also driven; the

ore body was delineated by diamond drilling on 25-foot centers from the drifts; raises were driven, and stoping begun. Another portal, 7125, was collared and was advanced during 1957.

The known extent of the Blacktail zone of ore pods and bodies is about 1,200 feet in length, with an average width in the north of about 35 feet and in the south of about 10 feet. It strikes N. 45° W. and plunges between 40° and 50° due north. It is cut by numerous north- to north-northwest-trending faults with slight to minor offsets and is strongly distorted by assymetrical north-plunging folds. The north and south halves of the ore zone are offset about 240 feet by a strong north-striking shear zone. The Brown Bear and Blacktail ore zones appear to be separated by a similar structure resulting in a right-handed pre-ore displacement of around 700 feet. The Blacktail ore averages a little more than 0.75 percent cobalt and slightly better than 2 percent copper. This is better than the average of the mine. Chalcopyrite appears to exceed the pyrite, and pyrrhotite is almost nonexistent. Gold values are spotty. Development by the Operator shows that the deposit is leached completely to a depth of around 50 feet and that beneath the leached zone is a zone of mild supergene enrichment where the primary sulfides are coated with chalcocite, bornite, cuprite, and other such minerals. The zone of copper enrichment extends for 100 feet and more beneath the leached zone.

Horseshoe-Old Gold zone.--The work done on this zone totaled 4,099 feet of surface core drilling and 4,250 feet of trenching. Underground work totals 1,295 feet of crosscutting (74/787XC) and drifting (74/843DN), and 1,557 feet of core drilling.

Trenching in the Horseshoe-Old Gold area was started in April with the eastward continuation of the 798 trench which was started in March over the Blacktail area. Trenching in a general northeasterly direction back and forth across the Blacktail and Horseshoe-Old Gold areas continued through the spring and was completed for the two areas in June. Several relatively narrow zones of silicified iron-stained gossans and of garnet-chlorite schist, which in some cases contained green copper stains, were disclosed by the trenching over the Horseshoe-Old Gold area. However, disclosures of zones strongly suggestive of significant ore bodies were not made by this work.

Core drilling from the surface in the area was started in June following the successful drilling in the Blacktail area. The first hole, S-36, intersected mineralized ground, but the second, S-37, penetrated a 5-foot zone of material at 137 feet which contained 4.80 percent cobalt and 1.45 percent copper (section C-C'). S-38 and S-39, drilled in July, penetrated a mineralized zone from

10 to 20 feet wide; S-38 penetrated a 3-foot width of material which contained 0.[illegible] percent cobalt and very little copper, whereas S-39 penetrated 7 feet of material which contained 0.45 percent cobalt and 2.02 percent copper (section B-B').

Core holes S-40 and S-41, drilled to the north of holes S-38 and S-39, penetrated only weakly mineralized ground, but hole S-44, drilled to the south of holes S-36 and S-37, penetrated 4 feet of material containing 2.07 percent cobalt and 0.31 percent copper at 225 feet. The information obtained from this drilling, although not so encouraging as that obtained in the Blacktail area, strongly indicated the presence of an ore zone extending in a northwesterly direction from the vicinity of S-44 to the vicinity of S-38 and S-39. Three other holes were drilled in the Horseshoe-Old Gold area, S-43, about 700 feet east of the ore zone, and S-48 and S-49, about 1,200 feet southeast of the ore zone (sheet 8), but none of these penetrated better than weakly mineralized ground. The results of the surface drilling were considered by some to be discouraging. However, it is possible that most of the cobalt-copper values were leached out at the elevations penetrated by the holes as the depth of leaching was found to extend in places to 300 feet and more.

Underground work on the Horseshoe-Old Gold zone was started in June 1935 when the 74/787 hanging-wall crosscut (74/787 HW XC) was collared on the 7400DN at coordinates 17,870 N-2948 E. Work on the heading was continued with but little interruption through the middle of February 1936 by which time the crosscut had been advanced northeasterly about 950 feet to the projection of the mineralized zone. This leg of the drive cut schistose quartzite and garnet schist, generally fractured and cut by north-trending faults. In places the ground stood without timber, but generally timber was required and towards the north end considerable spiling was needed. No commercial rock was encountered. Core holes 82 and 83, drilled northeasterly from the face, were completed in March. Three narrow zones of ore-grade rock were cut in hole 82 and one strongly mineralized zone was penetrated by hole 83 (sheet 5A). During May and early June the 74/787 XC was advanced 40 feet, turned northwest and designated the 74/843 hanging-wall drift (74/843 HW D). By the end of August it was advanced 345 feet to its present face. The drift penetrated moderately faulted and contorted garnet schist cut by some quartz zones and locally containing low-grade cobalt-copper-bearing zones. Rock bolts were employed as the chief means of support along the drift. To test the walls of the drift core holes 108, 109, and 110 were drilled in September and holes 111 and 112 in October. Hole 108 penetrated a 15-foot width of rock with an average grade of 0.65 percent cobalt and 0.11 percent copper. Holes 109 and 110 were barren. Hole 111, 490 feet long, penetrated four zones of ore-grade material having a cumulative width of 45 feet in the first 100 feet of hole; in addition, another zone of ore 3 feet wide was penetrated at 240 feet (sheet 5A and section C-C'). Hole 112 was barren. No work was done on the Horseshoe-Old Gold zone subsequent to the drilling completed in October.

The known horizontal extent of the Horseshoe-Old Gold zone of ore pods is about 800 feet. It strikes N. 30° E. and dips 50°-55° N. Ore-grade zones found by drilling range in width from 2 to 15 feet, but correlation between holes is generally impossible. Assays indicate that ore averaging about 1 percent cobalt and a little less in copper could be obtained from portions of the zone, but in general much discontinuity of the ore due to faulting and a considerable variation in the altitudes of the ore bodies due to folding are indicated by the drill holes. Even so, viewed by itself, the work done on the Horseshoe-Old Gold zone has indicated the potential presence of a large cobalt-copper ore reserve. The potentialities of this zone are inadequately tested, particularly northwest and southeast of the 74/843DN.

Indian Quartz zone.--The work done in this zone totaled 1,482 feet of surface core drilling and 3,750 feet of trenching. Underground work consisted of 687 feet of core drilling in two holes, but 75 feet of one hole was not charged to the contract. The surface and underground work is shown on sheets 9 and 10.

Trenching in the area was started in August 1954 and completed in September. Several relatively narrow zones of goethitic gossan and silicified shearing were found by this work. Some malachite-staining was noted, but in general the results of the trenching were not considered very promising.

Core drilling from the surface was started in late September and completed in October. Three holes were drilled and all of them penetrated narrow but moderately to strongly mineralized zones. Hole S-45, 532 feet long, penetrated 2 feet of rock averaging 0.19 percent cobalt and 1.23 percent copper at 304 feet and 1 foot of rock averaging 1.21 percent cobalt and 1.27 percent copper at 324 feet. Hole S-46, 479 feet long, penetrated 3 feet of material containing 0.59 percent cobalt and 0.24 percent copper at 228 feet and 13 feet of material averaging 0.25 percent cobalt and 1.38 percent copper at 276 feet. Hole S-47, 471 feet long, penetrated 3.5 feet of material averaging 1.20 percent cobalt and 0.58 percent copper.

Underground core drilling from the 7100 level was started in January 1955 and completed in February. Two holes were completed. Hole U-71-205, 455 feet long, penetrated 2 feet of rock containing 0.19 percent cobalt and 1.70 percent copper at 403.5 feet but otherwise penetrated only very weakly mineralized ground. Hole U-71-206, 232 feet long, penetrated 4.5 feet of rock containing 0.07 percent cobalt and 1.61 percent copper at 41 feet and 7 feet of rock containing 0.79 percent cobalt and 1.12 percent copper at 64 feet.

The mineralized zone in the Indian Quartz area strikes north to northwestward and dips steeply to the east. Strongly leached but weakly mineralized silicified zones and gossans are widespread in the area, but the results of the trenching and core

drilling were not considered sufficiently encouraging to justify a crosscut on the 7100 level from the Chicago area. Some of the gossans may correlate with the Dandy and Idaho zones to the south (fig. 2) and according to the Operator's final report underground work may eventually lead to more exploration in the southern part of the Indian Quartz zone.

The contract was amended four times.

Amendment No. 1, dated February 8, 1955, authorized 664.38 feet of underground diamond drilling by an equivalent reduction in surface diamond drilling from 8,700 feet to 8,576.5 feet and reaming and cementing from 1,700 feet to 1,145 feet. The purpose was to explore for a vein located by surface trenching. Projection of the vein was within 200-300 feet of the workings off the 7100 level. The vein could be explored at depth from these workings at less cost and with better results than from surface locations.

Amendment No. 2, dated August 16, 1955, allowed for rock bolting in lieu of timbering when conditions necessitated.

Amendment No. 3, dated August 19, 1955, authorized the drilling of 800 feet of hole on 25-foot intervals in those areas where the vein is extensively faulted and close drilling may be required to indicate the continuity of the vein.

Amendment No. 4, dated March 12, 1956, restated the method of computing payment for rock bolts, extended the period for completing the work from 24 months to 36 months and extended the period for royalty payments to 13 years or to December 9, 1966.

Ore Reserves

Ore reserves as calculated by the Calera Mining Company for the Blacktail Zone are:

	Tons	% Co	Co units	% Cu	Cu units
Positive normal	297,558	0.77	229,644	2.12	631,576
Probable normal	185,736	0.74	137,553	2.14	397,609
Positive secondary	155,648	0.95	147,406	2.89	449,220
Probable secondary	92,912	0.79	73,075	2.42	224,903
Total	731,854	0.80	587,678	2.83	1,703,308

Positive ore is that which has been delineated on two levels not more than 150 feet apart. It is comparable to our measured category. Probable ore is ore delineated on one level only or on two levels more than 150 feet apart. It compares to our indicated category. The distinction between normal and secondary ore is based on milling amenability rather than mineralogical differences.

Summary of Factual Data

Units of work completed and costs are:

Stage I

Item	Authorized	Completed	Unit cost	Total cost
Bulldozing	864 hrs.	864 hrs.	$11.878/hr.	$10,262.59
Surface diamond drilling	8,576.5 ft.	8,576.5 ft.	6.96/ft.	59,692.44
Reaming	1,145 ft.	1,145 ft.	2.50/ft.	2,862.50
Assays	3,100	2,346 units	3.00 ea.	7,038.00
Underground diamond drilling	664.38 ft.	612 ft.	3.3822/ft.	2,069.91
Total cost - Stage I				$81,925.44

Stage II

Drift and crosscut	6,000 ft.	3,369 ft.	35.535/ft.	$119,717.45
Assays	5,900	2,338 units	3.00 ea.	7,014.00
Normal timber	5,000 ft.	2,195.3 ft.	7.00/ft.	15,367.10
Heavy timber	750 ft.*	750 ft.	7.00/ft.	5,250.00
Spiling	500 ft.*	500 ft.	20.00/ft.	10,000.00
Framing	1,150 sets	447 sets	5.48 ea.	2,449.56
Underground diamond drilling	10,500 ft.	6,671.5 ft.	3.3833/ft.	22,564.36
Rock bolts	**	348	3.54 ea.	1,231.97
Total cost - Stage II				$183,594.39

*Included within the 5,000 feet normal timbering authorized.

**No specified number authorized.

Amount of contract	$407,340.00
Government participation at 70 percent	285,138.00
Total amount expended	$265,519.83
Government's share of cost	185,863.88
Total amount unexpended	$141,820.17
Government's share unexpended	99,274.12
Value of production through September 30, 1958	$3,284,573.75
Royalty received through September 30, 1958	$ 164,228.70

All equipment used on the project is the property of Calera Mining Company. The Government has no equity in any equipment or buildings on the property.

Discussion of Conclusions

The drifting and crosscutting progressed steadily in spite of very heavy ground. About 37 percent of the advance was in ground that needed heavy timber or spiling. The Operator was competent from both an operation and administrative standpoint. The contract was terminated only because the Operator wished to mine the large ore body in the Blacktail zone which was exposed by the exploration work.

The exploration on the Horseshoe-Old Gold zone indicated the presence of a potentially large cobalt-copper ore reserve; however, this zone was not adequately tested, particularly northwest and southeast of the 74/843 DN. The area of intersection of the Dandy, Idaho, and Indian Quartz zones (fig. 2) is little explored. Government participation in the exploration of both these areas is warranted.

Exploitation Possibilities

The Operator's estimate of ore reserves of the Blacktail zone at the end of the project has been accepted by the Field Team. Reserves are combined measured and indicated tonnages and grade.

Source	Tons	% Co	% Cu
Underground	483,294	0.76	2.13
Open pit	248,560	0.89	2.71
Weighted average combined	731,854	0.80	2.83

Blacktail underground and open pit ores are commingled with underground ores from the older Blackbird mine. Recently, the ores from these two sources have been mixed about half and half from each source. Since the ores are mixed, there has been no accurate means of calculating separately the cobalt and copper mill recoveries of the underground and open pit ores from the Blacktail deposit. Blacktail open pit ores are badly oxidized and cobalt and copper recoveries are known to be poor compared to recoveries made prior to the mining and milling of Blacktail ores. This is evidenced by the marked drop in recoveries when Blacktail ores were mixed with Blackbird ores. This subject was discussed in a memorandum to the Field Team dated July 25, 1958, by John D. Bardill, U. S. Bureau of Mines, entitled "Method of Computing Royalty Repayments."

Current mill recoveries of commingled ores from the Blacktail deposit and underground Blackbird mine ores will probably approximate 70 percent of the cobalt and 87 percent of the copper. Blacktail ores are believed to be slightly higher grade in copper than Blackbird ores so the estimated grade of commingled ores will probably approximate an average of 0.8 percent cobalt and 2.6 percent copper.

At the present rate of production the Government contract for cobalt at $2.30 per pound will probably be fulfilled about the middle of 1959 when this cobalt producer will be on a competitive basis with other world producers. The company has petitioned that the contract be extended or renewed, claiming that it cannot continue operating at the normal competitive price of cobalt.

The mine, mill, and the Garfield cobalt refinery are an integrated operation. The mill flowsheet is shown on plate 2; however, no flowsheet for the refinery is available. For purposes of calculating the Blackbird Division's mining and milling profits or losses the cobalt content of the cobalt concentrates is estimated

at $1.35 per pound at the Government contract base price of $2.30 per pound. Estimated mining and milling cost per pound of cobalt has been $1, leaving an estimated profit of $0.35 per pound for the Blackbird Division. When the operation becomes competitive with $2 per pound cobalt (assuming the price does not change in the meantime), the refinery may reduce the $1.35 to say, for the purpose of estimating, $1.10 per pound.

Net smelter returns for contained copper in concentrates is approximately 70 percent of the gross value.

Assuming the price of cobalt at $2 per pound and copper at $0.30 per pound, the value of the ore per ton expressed in net smelter returns for copper concentrates and cobalt refinery proceeds may approximate the following estimate:

Cobalt:

0.8% Co, or 16 lbs./ton x 70% recovery x $1.10/lb. = $12.32

Copper:

2.6% Cu, or 52 lbs./ton x 87% recovery x $0.30/lb. x 70% net smelter returns = 9.50

Total value of cobalt and copper per ton of ore $21.82

At the present rate of mining the Blacktail open pit ore probably will be depleted when the Government contract has been fulfilled. The following cost estimates are based on the entire production from underground, commencing in midyear of 1959.

Approximately 23,000 tons of ore are milled monthly from which are recovered about 700 tons of cobalt concentrates and 1,900 tons of copper concentrates.

	Estimated cost per ton of ore
Underground mining, including development	$12.65
Milling	4.15
Trucking concentrates from mine to railhead at Mackay, Idaho, 105 miles	1.40
Rail freight of concentrates from Mackay to smelter and refinery at Garfield, Utah	0.95
Cost per ton excluding unknown overhead cost and taxes	$19.15

When overhead and terminal costs are added, the operation would probably be marginal.

If the cobalt recovery in the mill could be increased to 85 percent, approximately $2.65 per ton additional would be recovered.

Ores considered by the company to be low grade are being sorted from the mill-grade ores from the open pit and being stockpiled for possible future beneficiation. The stockpile contained approximately the following tonnages the latter part of June 1958.

Material	Tons	% Co	% Cu
Low-grade	20,740	0.73	3.33
Protore	22,000	0.38	2.12
Lean ore	3,850	0.26	1.20
Leach ore	152,000	0.14	0.74
	198,590		

Currently about 24,000 tons of ore are milled monthly. The ore is crushed and ground to about 45 percent minus 200 mesh and a bulk flotation concentrate recovered. The concentrate is conditioned with lime to a pH of 9.0 to 9.5 and the slurry heated to about 140° F. and refloated to recover a copper concentrate, which is refloated. This concentrate is tabled and the tails are thickened, filtered, and shipped to the smelter. The table concentrate is reground and returned to the copper rougher flotation circuit.

Copper rougher tails are floated to remove iron concentrates which are discarded.

The iron flotation circuit tailings are acidified with sulfuric acid to pH 3.2 and refloated, recovering a cobalt concentrate which is cleaned, recleaned, thickened, filtered and shipped to the Garfield cobalt refinery.

During September 1958, cobalt recovery was about 75 percent in a concentrate assaying 15.6 percent cobalt. In the same period copper recovery was 86.8 percent in a concentrate assaying 27.8 percent copper.

Grade of Conc.

Attachments
Distribution:
OME(3) Docket
USBM(5) F. C. Canney
USGS(SRO)

APPENDIX I

Drill logs of holes completed under Contract Idm-E645

S-29
S-30
S-31
S-32
S-33

S-34
S-35
S-36
S-37
S-38
S-39

S-40
S-41
S-42
S-43
S-44

S-45
S-46
S-47
S-48
S-49

U-74-30
U-74-32
U-74-33
U-74-34
U-74-35

U-74-36
U-74-37
U-74-38
U-74-39
U-74-40

U-74-41
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U-74-44
U-74-45

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U-74-87

U-74-108
U-74-109
U-74-110
U-74-111
U-74-112

U-71-205
U-71-206

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 17 1958

DATE	INITIALS	CODE
12/17	A.J.	225
12/17	WSG	400

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

December 16, 1958

Memorandum

To: W. R. Griswold, Office of Minerals Exploration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of Field Team final report, Docket No. DMEA-3143 (cobalt-copper), Calera Mining Company, Blackbird Mine, Lemhi County, Idaho, Contract No. Idm - E645

A Certification of Discovery or Development was issued on September 16, 1957 and the Government's participation, under the above-cited contract, amounting to $185,863.88 was fully repaid in November 1958.

The examiners state that a number of good exploration targets exist on Calera Mining Company's property and recommend Government participation in further exploration. I concur in their recommendation.

A. D. McMahon

A. D. McMahon

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
Files

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/26	Alley	800
11/26	Chambers	800
11/26	Martin	400
11/28	Selfridge	120
"	Johnson	110
		~~100~~
11/28		220
		400

NOV 28 1958

Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt and Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

Thank you for your royalty payment of $4,315.58 which was received during November. This repays in full the Government's participation of $185,863.88 in your exploration contract for cobalt and copper.

As a result of this repayment the Government retains no lien or claim against the property or on any future production.

Congratulations on the successful exploration. It has been a pleasure to participate with you in this undertaking.

Sincerely yours,

FRANK E. JOHNSON

ACTING Director

AMAlley/ama
November 26, 1958

Copy to: Docket
Director's Reading File
Director
Mr. Johnson
Mr. Martin
Mr. Chambers
Mr. Kiilsgaard
Mr. H. W. Davis
Mr. A. D. McMahon
Field Team, Region I (2)

8623

9/2 C 226
9/4 800
9/3 WSM 400

So. 157 Howard Street
Spokane 4, Washington
August 27, 1958

Mr. E. B. Douglas, Manager
Blackbird Division
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Ida-2645

Dear Mr. Douglas:

One copy of Royalty Audit Certificate and one copy of Royalty Audit Report, dated August 5, 1958, by C. A. Turner, DMEA Auditor, are enclosed for your information and files. This certificate and this report covers the period of December 9, 1955, to June 20, 1958.

Sincerely yours,

Donald R. MacLaren
For: Wing G. Agnew
Acting Executive Officer
DMEA Field Team, Region I

Enclosures

cc: DMEA(3)
DMEA(2)
DMEA(AI)
Turner

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/19	G McCarthy	800
8/19	Fisher	800
8/25	H. g.	220
8/25	WSG	400

3143

AUG 19 1958

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Docket No. DMEA-~~5020~~ 3143
(Cobalt-Copper)
Calera Mining Company
Contract No. Idm-E645

Dear Mr. Turner:

Your Royalty Audit Certificate and Report on the referenced project are acceptable and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

GMcCarthy/GMcC
August 19, 1958

cc: Docket
Admr. Reading File
Mr. Chambers

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

1201 N. Division St.
Spokane 2, Washington

July 25, 1958

Sent to 800
OFFICIAL FILE COPY
DMEA
RECEIVED AUG 4 1958

DATE	INITIAL	CODE
8-4	C	220
8/4	WSM	400

Copy of this in Royalty File

MEMORANDUM

To: DMEA Field Team, Region I

From: John D. Bardill, Bureau of Mines

Subject: Method of computing royalty repayments, Docket No. DMEA-3143, Calera Mining Company, Blackbird Mine, Lemhi County, Idaho, Contract No. Idm-E645

Mr. C. A. Turner, DMEA auditor, made a royalty audit at the main mine office on June 24, 1958. I accompanied him to determine the method and the reasonableness and fairness of the method of computing DMEA royalty repayments to the Government on the company's production of cobalt and copper from their Blacktail ore body.

The total amount repayable to the Government under the contract was $185,863.88. The company has repaid $124,965.56 on production through the month of May 1958. At the present rate of repayment, which is expected to continue, the full amount should be repaid in from 4 to 5 months.

All production from the Blacktail ore body is subject to DMEA royalty at the rate of 5 percent on estimated cobalt and copper contents of mine run ore until the whole loan has been repaid. The ore body is being developed to mine a portion of the ore by open pit methods and the remainder by underground methods. Present rate of mining is approximately 1 ton of underground ore to 7 tons of open pit ore. The underground ore results from the development of the mine for underground mining. The open pit ore reserve is expected to be depleted in about a year unless more ore is discovered by drilling now in progress.

The top of the Blacktail ore body is quite oxidized; however, as it attains depth the oxidation progressively lessens. Tests indicate that the oxidized cobalt is very difficult to recover by flotation, resulting in high cobalt losses in the mill tailings. Measures are being taken to decrease these losses.

Prior to 1957, ore was being mined underground from the Dandy, Chicago and Brown Bear stopes.

Non-DMEA ore and DMEA ore from both open pit and underground Blacktail mining are commingled and milled together. Each ore is carefully weighed and sampled before commingling. Under these conditions it is impossible to accurately determine the cobalt and copper recoveries that would result if each ore was milled separately. Treatment of the ores separately at the present rate of about 1200 tons per day would be unnecessarily expensive and would require either separate milling facilities for each ore or large storage facilities for ores awaiting milling.

The effect of the oxidized Blacktail ores being mixed with the company ores from underground workings is reflected in the cobalt recoveries. The production of Blacktail ore prior to the fall of 1957 was from underground exploration and development. Average tonnage milled was approximately 1,200 tons per day, or roughly 22,000-24,000 tons per month including Blacktail ore.

The following tabulation illustrates the detrimental effect of the Blacktail ores on the overall cobalt recoveries and the month by month estimated cobalt recoveries upon which the company paid royalties; also, the estimated and actual copper recoveries for Blacktail and commingled ores.

Month	Tons Blacktail ores		Estimated % Co recoveries Company based royalties	Actual % Aver. yearly Co recovery of commingled ores	Estimated % Cu recoveries Company based royalties	Actual % Aver. yearly Cu recovery of commingled ores
Reported recoveries prior to Blacktail ore production				± 80.00		
	Underground	Open pit				
1956						
Thru Sept.	6,690		73.8		86.6	
Oct.	1,558		72.9		90.8	
Nov.	1,911		72.6	66.45	91.6	91.6
Dec.	2,569		68.6		86.2	
1957						
Jan.	1,420		75.3		82.3	
Feb.	2,524		75.2		90.6	
Mar.	2,110		71.9		84.4	
Apr.	3,915		75.1		85.7	
May	2,732		74.6	70.69	86.8	86.3
June	1,466		80.9		90.1	
July	1,454		80.6		86.8	
Aug.	2,168		79.1		87.5	
Sept.	2,414		75.0		85.0	
		5,041	70.0		80.0	
Oct.	2,830		75.0		85.0	
		8,841	60.0		70.0	
Nov.	2,105		70.0		80.0	
		10,073	60.0		70.0	
Dec.	2,086		70.0		80.0	
		7,007	60.0		70.0	
1958						
Jan.	916		65.0		80.0	
		8,934	55.0		70.0	
Feb.	855		70.0		90.0	
		7,658	60.0	55.37	70.0	85.6
Mar.	2,583		70.0		90.0	
		8,642	60.0		75.0	
Apr.	1,689		70.0		90.0	
		11,372	50.0		80.0	

SUMMARY

Period	Tons Blacktail ores	Weighted Aver. % Cobalt Recoveries: Company based royalties	Weighted Aver. % Cobalt Recoveries: Total commingled ores
1956	12,728	72.4	66.45
1957	58,186	67.9	70.69
1958 thru April	42,649	57.7	55.37
Weighted average Total Blacktail Ores	113,563	64.57	64.46

Period	Tons Blacktail ores	Weighted Aver. % Copper Recoveries: Company based royalties	Weighted Aver. % Copper Recoveries: Total commingled ores
1956	12,728	87.8	91.6
1957	58,186	78.1	86.3
1958 thru April	42,649	76.1	85.6
Weighted average Total Blacktail Ores	113,563	78.4	86.6

Mill Recoveries
Buffalo Mines
as of July 25, 1958
Summary, p. 4

It is quite a coincidence that the weighted averages of the estimated and actual cobalt recoveries are almost identical. If the cobalt mill recoveries of the underground ores prior to the discovery of the Blacktail were about 80 percent, then the cobalt recoveries of the Blacktail ores if treated alone would probably be considerably lower than the cobalt recoveries of the commingled ores. If this is true the Government is being overpaid.

The mine, mill and Garfield refinery are an integrated operation. It is my understanding that at the time the Blacktail ore body came into production it was tentatively agreed between the Executive Officer and the Operator that, because of the integrated operation, royalty repayments would be based on the cobalt and copper contents of the mine run ore plus recovered incidental gold and silver. At the time, cobalt was selling for $2.60 per pound and the Government contract was at the base price of $2.30 per pound. It was tentatively agreed that $1.35 per pound would be a fair price for contained cobalt in the ore. Cost of mining and milling was estimated at $1.00 per pound, leaving a $0.35 per pound profit for the Blackbird Division of the company. When the price of cobalt dropped to the base price of $2.30 per pound the value of contained cobalt to mine was reduced to $1.05 per pound.

As an example of the method of computing cobalt royalty, April 1958 is cited. Production of underground ore was 1,689 tons, assaying 1.13 percent cobalt with an estimated mill recovery of 70 percent. Open pit ore production was 11,372 tons, assaying 0.86 percent cobalt with an estimated mill recovery of 0.50 percent. Then,

Underground	22.6 lbs. Co	(1.13% Co) x	70% recovery x	$1.05/lb.	= $16.61
Open pit	17.2 lbs. Co	(0.86% Co) x	50% recovery x	1.05/lb.	= $ 9.03

This may or may not be a strictly accurate method of computing the royalty, but if the loan will be repaid in several months it makes little difference.

The Operator's estimated average copper mill recoveries for Blacktail ores are approximately 8.2 percent lower than the mill recoveries of commingled ores. This seems reasonable because during the first four months of 1958, Blacktail ores constituted approximately one-half of the entire mill feed and the overall average mill recovery of commingled ores had dropped to 85.6 percent. During 1956, Blacktail ores represented only a small percentage of the total mill feed when the overall mill recovery of commingled ores was 91.6 percent or approximately 5 percent higher than in 1958.

A review of the smelter settlements for copper concentrates shows that the net smelter returns are approximately 71 percent of the gross value of the copper, gold and silver. The Operator evidently used this figure to estimate monthly net smelter return price for copper. For example, the average price of domestic electrolytic copper, f.o.b. refinery, during April 1958 was $0.23 per pound. The Operator estimated the net smelter return for copper during April at $0.165 per pound or approximately 71 percent of $0.23.

As in the case of the method of computing royalties on cobalt production, this may or may not be a strictly accurate method of computation, but if the loan will be repaid in several months it makes little difference.

Under the circumstances I believe the basis for the Operator's methods of computing and repayments is fair and reasonable.

John D. Bardill

John D. Bardill

Distribution:
DMEA (4)
USGS (2)
USBM (AD)
Turner
USBM (2)

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DMEA
RECEIVED JUN 19 1958

DATE	INITIALS	CODE
6/19	C	220
	WSM	400

So. 157 Howard Street
Spokane 4, Washington

June 16, 1958

Mr. E. B. Douglas
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Douglas:

With the approaching close of the fiscal year, it is desirable for DMEA to have its royalty accounts up to date. To this end Mr. Charles Turner, DMEA auditor, and Mr. John D. Bardill, U. S. Bureau of Mines Engineer, will make an audit of the Calera royalty account and plan on arriving at Cobalt on Tuesday, June 24, 1958. Any assistance you or the members of your staff can give them will be much appreciated.

If this date is not convenient, will you please telephone me upon receipt of this letter.

With best regards,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

cc: DMEA (3)
USBM (2)
USBM (AD)
Turner

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DMEA
RECEIVED MAR 10 1958.

DATE	INITIALS	CODE
3/10	C	220
/10	[illegible]	100
"	[illegible]	110
3/ "	[illegible]	800
	WSM	400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1201 N. Division St.
Spokane 2, Washington

March 7, 1958

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Enclosed are four copies of a corrected semi-annual royalty report on the cited project.

The 798,000 ton reserve in the Blacktail ore body given in our report is a misinterpretation of reserves given the inspecting engineer by a member of the Calera mine staff.

We telephoned Mr. E. B. Douglas, general manager, who stated that as of December 31, 1957 the Blacktail ore body contained 945,000 tons of cobalt-copper ore. Using our preliminary estimate of 700,000 tons (Field Team letter of August 13, 1957) this is a net gain of 245,000 tons developed subsequent to the DMEA work.

The current reserve in the Blacktail ore body would be decreased by the 70,887 tons mined to date.

By Field Team, Region I

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosure

cc: USGS (2)
USBM (AD)

Report filed in Calera, No. 4

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2-3	Chapman	400
2-3	Martin	400
2/5	GCS	130
"	Johnson	110
"	Gutenberg	100
		220
2/6	C	400

FEB 6 1958

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region 1
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

Clarification is needed for the following items from the Semi-Annual Report of the subject Certified Project, for July 1, 1957, through December 31, 1957.

Please indicate whether the tonnage:

"Increase of reserves by work performed subsequent to DMEA project work. 798,000 tons (Blacktail orebody)"

is an ore reserve estimate as of December 31, 1957, or should be corrected for ore mined during the six-month period or for total DMEA ore mined?

Figures on the grade of ore mined (during period and previously), recoveries and values would also be appreciated.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (SHB)

APPROVED:

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

N. E. Nelson (SHB)
Member, Geological Survey

TLCHAPMAN/dlm 2-3-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

8623

ACTION ON INTERIM
OR FINAL FIELD TEAM REPORT

Date 1/28

Referred to:

1. ~~Mr. Mirendorf~~
2. ~~Mr. Johnson~~
3. ~~Mr. Chambers~~
4. Docket Control Mails and Files
5. Division
6. ~~Docket Control Mails and Files~~
7. 400

Note comments in report regarding:

1. Investment data.
2. Production data incomplete.
3.
4. Active

and take appropriate action.

- - - - - - - - - -

Action taken by Division:

Robert E. Adams

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 27 1958

DATE	INITIALS	CODE
1/28	C	220
28	[illegible]	160
	400	WSM

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

SEMI-ANNUAL REPORT OF CERTIFIED PROJECT

Reporting period: July 1 to December 31, 1957

Date of exam: January 10, 1958

Operator: Calera Mining Company, Cobalt, Idaho

Mine name: Blackbird

County and State: Lemhi County, Idaho

Docket number and commodity: DMEA-3143 (cobalt-copper)

Contract number: Idm-E645

Date of contract: December 9, 1953

Date of certification: September 16, 1957

Expiration date of royalty payments: December 9, 1966

Total amount of contract: $407,340.00

Total expenditures under contract: 265,519.83

Amount of Government participation at 70%: 185,863.88

Royalty payments this period: $ 30,424.75

Previous royalty payments: 31,725.00

Total royalty payments to date: 62,149.75

Percent Government participation repaid: 33.43%

Royalty due on production to date: $7,943.85 *

Royalty remarks: *Amount of royalty due for month of December 1957. Check for payment will be sent in shortly. This amount is not included in royalty payments for this period or to date.

Semi-annual report
Contract Idm-E645, page 2

	Tons	Analysis
Original estimate of DMEA reserves (from Field Team final report) Mines ___ Survey___ Joint ___	Report in preparation.	
Revised estimate of DMEA reserves (Field Team) Mines____ Survey____ Joint ___		
Increase of reserves by work performed subsequent to DMEA project work (Operator's estimate)	798,000 tons (Blacktail ore body)	
Production of DMEA ore (this period):	43,992 tons	
(previous):	26,895	grades, recoveries etc
(to date):	70,887	
Production of Operator's ore found subsequent to DMEA work (this period)	86,421 tons	
(previous)	911,871	
(to date)	998,292	
Percent of revised reserves mined:	6.15% (Operator's calculation)	

Production remarks:

INVESTMENT DATA

Shafts

No shaft sinking since DMEA program was completed.

Winzes

6x8, slope 30°, untimbered, rock bolted only where ground support is needed	344 feet	$125.00/ft.

Drifts and crosscuts (for 1957)

Drifts:	8 x 9.5'	1035 feet	$ 75.00/ft.
	7 x 8' including 50% timbered	3099	50.00/ft.
	Total	4134	

Raises

4x4' - 50° slope, timbered	1171 feet	$ 40.00/ft.

Signed: Wm. M. Romischer (Engineer)

Distribution:
DMEA (4)
USGS (2)
USBM (AD)
USBM (2)

1201 N. Division Street
Spokane 2, Washington

August 28, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 3 1957

DATE	REMARKS	CODE
9/3	G	220
9/9	[illegible]	800
9/4	WSH	400

Mrs. Dorothy F. Long, Certifying Officer
DMEA Field Team, Region I
1201 N. Division Street
Spokane 2, Washington

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mrs. Long:

The project work under the referenced contract was performed to the satisfaction of the Government. The contract was terminated by mutual agreement effective December 9, 1956, before completion of the work. A final engineering and geological report has been received from the Operator and accepted by the Executive Officer.

The Government has no interest in supplies or equipment purchased for use on the project.

A final Field Team report will recommend Certification of Discovery.

A final Report of Review dated August 15, 1957 by DMEA Auditor C. A. Turner has been received.

As all contract requirements have been met, it is requested that final settlement of our account with the Operator be made.

Sincerely yours,

A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region I

cc: DMEA (2)
USGS (2)

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9-13	Holt	400
9-13	Martin	400
	Long	140
	Hoffman	140 ~~800~~
9/16	Selfridge	130
		100
9-17	C	220
		400
9/13	Talbert	800
9/14	Lamb	130
9/14	Kiilsgaard	130

Calera Mining Company
Cobalt, Idaho

SEP 16 1957

Re: Docket No. DMEA 3143 - Cobalt and Copper
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

Enclosed is a certification of discovery or development which covers all the land described in Article 2 of the contract.

By the terms of the Exploration Project Contract, as amended, and of the certification all minerals mined or produced from December 9, 1953, to December 9, 1966, are subject to the Government's percentage royalty as set forth in the contract until the sum of $185,863.88 is paid.

You should continue to make royalty payments, as in the past, to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I, South 157 Howard Street, Spokane 4, Washington. The payments should be accompanied, as has been customary, by suitable evidence showing price, quantity and grade of the product sold, with deductions certified to be correct by you.

You are requested to notify Mr. Weissenborn 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 any extended period, please notify Mr. Weissenborn at 6-month intervals that no production has been made, when that is the case.

Sincerely yours,

Frank E. Johnson
ACTING Administrator

SPHOLT:foc 9-13-57
cc to: Code 400
110
800
Admr. R. File
FT. REG. I
Messrs. F. D. Lamb, USBM
Enclosure
T. H. Kiilsgaard, USGS
H. W. Davis, USBM
Oper. Corr.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-29	Holt	400
	Martin	400
9/4	Lyons	140 ~~800~~
✓	Hooper	130
		110
		100
		220
		400
		800

Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA 3143 - Cobalt and Copper
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

Enclosed is a certification of discovery or development which covers all the land described in Article 2 of the contract.

By the terms of the Exploration Project Contract, as amended, and of the certification all minerals mined or produced from December 9, 1953, to December 9, 1966, are subject to the Government's percentage royalty as set forth on the contract until the sum of $185,863.88 is paid.

Royalty should continue to be paid, as it has been in the past, to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region I, South 157 Howard Street, Spokane 4, Washington. The purchaser should be advised to deduct royalties from the amount due on each shipment and forward check direct to the executive officer. Royalty payments to the Government should be accompanied by suitable evidence, such as settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the charge certified to be correct by the purchaser.

You are requested to notify Mr. Weissenborn 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 any extended period, please notify Mr. Weissenborn at 6-month intervals that no production has been made, when that is the case.

SPHOLT:foc 8-29-57

Sincerely yours,

Not used

Administrator

cc to: Code 400
800
110
Admr. R. File
Oper. Comm.
FT. REG. I
F. D. Kamb, USBM
R. W. Holliday, USBM
T. H. Kiilsgaard, USGS

Enclosure

8623

DMEA Form 7
(12-56)

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Date	Surname	Code
8-29	Holt	400
8-29	Martin	400
9/13	Talbot	800
9/16	Selfridge	130
		110
		100
		220
		400

9/16 Lamb 130
9/16 Kilsgaard 130

SEP 16 1957

Mr. Clarence A. Fredell, Acting Director
Technical Services Division
Defense Materials Service
General Services Administration
7th and D Streets, S. W.
Washington 25, D. C.

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Fredell:

Enclosed is a copy of a certification of discovery or development issued under the subject contract.

Contract No. IdmE-645 for the exploration of the Blackbird mine cobalt-copper deposits was executed December 9, 1953. Expenditures up to $407,340.00 were authorized by the contract as amended, of which the Government's share at 70 percent was $285,138.00. Cost of the work completed was $265,519.83, of which the Government's share was $185,863.88.

The object of the exploration program was to test the possible cobalt and copper occurrences in veins and lenses along zones of fracturing and shearing in quartzites and schists. The program employed bulldozer trenching, surface and underground diamond drilling, drifting and crosscutting, to explore the mineralized zones.

The contract, as amended, provided for 864 hours of bulldozer trenching, 8,576.5 feet of surface diamond drilling, 11,164.38 feet of underground diamond drilling, and 6,000 feet of drifting and crosscutting.

Work completed comprised 864 hours of bulldozer trenching, 8,576.5 feet of surface diamond drilling, 7,283.5 feet of underground diamond drilling, and 3,369.0 feet of drifting.

A preliminary approximation of reserves of cobalt-copper ore discovered by project work is more than 700,000 tons of ore, averaging 0.80 percent cobalt and 2.83 percent copper.

Sincerely yours,

Frank E. Johnson (Byes)
ACTING Administrator

Enclosure

cc to: Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. Lamb, USBM
Davis, USBM
Kilsgaard, USGS

SPHOLT:foc 8-29-57
cc to: Docket
Code 400
800
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DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8-29	Holt	400
8-29	Martin	400
		100
		220
		400

August 29, 1957

MEMORANDUM

To: Administrator, DMEA

From: Division of Iron and Ferro-Alloys

Subject: General Summary of Contract and Results Obtained
Docket No. DMEA 3143, Cobalt, Copper
Calera Mining Company
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-E645

Operator: Calera Mining Company, Cobalt, Idaho

Operator's Property Rights:

The Operator owns 17 patented and 12 unpatented lode mining claims, situated in the Blackbird Mining District, Lemhi County, Idaho, and recorded in the Courthouse of Lemhi County, at Salmon, Idaho, as follows:

Patented Claims:

Name of Claim	U. S. Survey No.
Anna	1592
Blacktail	1592
Blacktail No. 2	1592
Brown Bear	1592
Buckeye	1592
Catherine	1592
Dandy	1592
Dandy No. 2	1592
Idaho	1592
Iowa	1592
Lemhi	1592
St. Louis	1592
McKinley	1980
Indian Quartz	2009
Anaconda *	2557
Copper Gold	2557
Panther *	2557

(*) Only those portions of the Anaconda and Panther claims which overlap the Copper Gold claim are included in the agreement.

Unpatented Claims:

Name of Claim	Recorded Book No.	Page No.
Jaycee	1	607
Chelan	2	64
Chelan No. 1	2	63
Chelan No. 2	2	251
Chelan No. 3	2	252
Chelan No. 7	2	263
Chelan No. 15	2	283
Chelan No. 4	3	519-520
Chelan No. 5	3	520
Old Gold	3	2
Chelan No. 57	4	25
Chelan No. 85	4	221
Jaycee Amended	4	222
Old Gold Amended	4	229

Should the Operator obtain an interest in the Queen claim, it should be included in the claims covered by the contract. (The Queen claim was later acquired and added to the contract by a special agreement dated September 6, 1956).

Minerals mined or produced from presently developed ore bodies, below certain planes, Nos. 1 to 4, set forth in Annex I of the contract, were to be excluded from the royalty terms of the contract.

Contract:

(a) Executed December 9, 1953, (on Long Form, MF-200, rev. Feb. 1952).
(b) Completion period: Work to be started within 70 days, and to be completed within 24 months, from the date of the contract.
(c) Work authorized:

Agreed Unit Costs

Stage I

Bulldozer trenching, 864 hours @ $11.878/hr. rounded to	$10,263.00
Surface diamond drilling, 8,700 feet @ $6.96/ft.	60,552.00
Reaming and cementing, 1,700 feet @ $2.50/ per ft.	4,250.00
Assaying, 3,100 samples for cobalt and copper @ $3.00 ea.	9,300.00

Stage II

Drifting and crosscutting, 6,000 feet @ $35.535/ft.	$213,210.00
Normal timbering, 5,000 feet @ $7.00/ft.	35,000.00
Heavy timbering, 750 feet (of the 5,000 feet) @ $7.50/ft. additional	5,250.00
Spiling, 500 feet (of the 5,000 feet) @ $20.00/ft. additional	10,000.00
Framing timber, 1,150 sets @ $5.48/set	6,302.00
Underground diamond drilling, 10,500 feet @ $3.3822/ft.	35,513.00
Assaying, 5,900 samples for cobalt and copper, @ $3.00 each	17,700.00
Total Agreed Unit Costs	$407,340.00
Government Participation @ 70%	285,138.00

Actual Costs

Estimated Actual Costs of Work that may remain Incompleted, if and when the Government Exercises its Option to Convert to Actual Costs.

Supervision, including superintendent and foreman,	$500.00/mo.	
Operating equipment to be furnished by Operator, 1 locomotive, 1 EIMCO mucking machine, 15 CS cars, etc. (as listed in Exhibit A of contract)	$35,666.13	
Rental, including maintenance and repairs	595.00/mo.	
Contingencies	5,000.00	
Total estimated cost of the project		$407,340.00 1/
Government participation @ 70%		285,138.00 1/

1/ This sum to be apportioned between agreed unit costs and actual costs as determined; excess over this total for the sole cost of the operator.

Amendment No. 1, dated February 8, 1955, effective December 9, 1953, transferred authorization for part of the surface diamond drilling, with reaming and cementing, to permit 664.38 feet of underground

diamond drilling in Stage I at no increase in the total estimated cost of the contract.

Amendment No. 2, executed August 16, 1955, effective December 9, 1953, authorized the use of rock-bolts in lieu of normal timbering where conditions warranted, at no increase in the estimated total cost of the contract.

Amendment No. 3, executed August 19, 1955, effective December 9, 1953, authorized 800 feet of underground diamond drilling, in holes spaced at intervals of 25 feet, at no increase in the estimated cost of the contract.

Amendment No. 4, executed March 12, 1956, authorized the replacement of rock bolts by normal timbering, at a cost not to exceed the difference in cost between that allowed for rock-bolting and that for normal timbering; extended the time for completion of the work from 24 to 36 months from the date of the contract; and extended the period for royalty payments from 12 years to 13 years from the date of the contract.

(d) Work Completed:

Agreed Unit Costs

Stage I

Bulldozer trenching, 864 hours @ $11.878/hr.	$10,262.59	
Surface diamond core drilling, 8,576.5 feet @ $6.96/ft.	59,692.44	
Underground diamond core drilling, 612 feet @ $3.3822/ft.	2,069.91	
Reaming, 1,145 feet @ $2.50/ft.	2,862.50	
Assaying 2,346 samples @ $3.00/each	7,038.00	
Total cost of Stage I		$81,925.44

Stage II

Drifting, 3,369.0 feet @ $35.535/ft.	$119,717.45
Normal timbering, 2,195.3 feet @ $7.00/ft.	15,367.10
Heavy timbering, 750 feet @ $7.00/ft.	5,250.00

Spiling, 500 feet @ $20.00/ft.	$10,000.00	
Rock bolting, 348 @ $3.54/each	1,231.92	13,681.48
Framing, 447 sets @ $5.48/set	2,449.56	
Underground diamond drilling, 6,671.5 feet @ $3.3822/ft.	22,564.36	
Assaying, 2,338 samples @ $3.00/each	7,014.00	
Total cost of Stage II		$183,594.39
Total accepted cost of the Project		$265,519.83
Government participation @ 70%		$185,863.88

Work under the contract commenced February 1, 1954, and was stopped, short of completion, in October 1956.

The contract was terminated by a mutual termination agreement, dated January 2, 1957, effective as of 12:01 a.m., December 9, 1956.

Audits:

A review in lieu of final audit, dated August 15, 1957, was received August 19, 1957.

Reports: The Operator's Final Report, undated, was received in the office of the Field Team on March 22, 1957, and in this office on April 1, 1957. The Final Report of the Field Team is in preparation.

Past Production:

There was very little recorded production from the district prior to 1948. The Operator reports that production from the Chicago and Brown Bear zones to August 1, 1953, was 162,724 tons of ore, averaging 0.61 percent cobalt and 1.37 percent copper. There was no production from the area to be explored under this contract.

Present Production:

Reported production from the Blacktail zone from February 1, 1955, through June 30, 1957, is reported as 26,895 tons of ore, averaging 0.71 percent cobalt and 2.57 percent copper, on which royalty of $31,725.00 (subject to ~~final~~ audit) has been paid to the Government.

Certification:

As recommended by the Field Team, a certification of discovery or development was issued by this office on _____1957.

Comment:

The project consisted of bulldozer trenching, diamond drilling from surface sites and underground stations, also drifting and crosscutting on the 7400 foot level of the Blackbird mine, to explore for cobalt and copper, occurring as veins and lenses containing cobalitite and chalcopyrite, along zones of fracturing and shearing in quartzites and schists.

A preliminary approximation of reserves of cobalt-copper ore discovered by project work is more than 700,000 tons, averaging 0.80 percent cobalt and 2.83 percent copper.

W S Martin

W. S. Martin, Director
Division of Iron and Ferro-Alloys

SPHOLT:foc
8-29-57
cc to: Docket
Code 400
Admr. R. File
Mr. Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 16 1957

DATE	INITIALS	CODE
8/16	O	220
8/16	WSM	400

August 13, 1957

Mr. W. S. Martin, Acting Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Martin:

This is in reply to your letter of August 5, 1957, requesting the Field Team's estimate of ore reserves and our recommendation as to certification.

We had hoped that the final report would be completed before Nickelson left Spokane, but he was only able to rough draft his maps and prepare an outline of the report.

Three areas, the Indian Quartz area, the Horseshoe-Old Gold area, and the Blacktail area, were explored for cobalt-copper ore by bulldozing approximately 9,250 feet of trench, diamond drilling 8,576.5 feet of holes from the surface and 7,283.5 feet of holes from underground stations, and driving 3,369 feet of drifts and crosscuts.

In the Indian Quartz area, which was a complete disappointment, the drill holes did not indicate sufficient promise to justify further exploration by underground methods.

The Horseshoe-Old Gold area was more encouraging, but drifting and underground diamond drilling indicated considerable discontinuity and variations in altitude of the ore grade material which ranges in width from 5 feet to 85 feet. No reserves are estimated for this zone as the ratio of barren rock to the low grade cobalt-copper shoots is high.

The Blacktail area is an irregular zone about 1,200 feet long, bisected by a strong northerly striking fault which offsets the north half of the zone about 240 feet from the south half.

The north half of the zone has an average width of 35 feet, while the south half averages 10 feet wide. The ore zone in the north part of the Blacktail area plunges about 41° due north; the one in the south part plunges about 50° due north.

Our estimate of the reserves are not yet complete but will be at least of the same order of magnitude of those given in the operator's final report, which is limited to the Blacktail area. Our estimate is that a reserve of more than 700,000 tons of ore having an average grade of 0.80 percent cobalt and 2.83 percent copper has resulted from this project. We, therefore, recommend that a Certificate of Discovery or Development be issued.

cert.

By Field Team, Region I

for Stephen W. Zoldoski
Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

Donald R. MacLaren
Donald R. MacLaren, Acting Member
U. S. Geological Survey

cc: USBM (2)
USBM (AD)
Alvord

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/20	Talbert	800
8/20	C	220
8/20	WSay	400

AUG 20 1957

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Report of Review
Calera Mining Company
Contract No. Idm-E645
Docket No. DMEA-3143

Dear Mr. Turner:

The recently submitted copies of your Report of Review covering the above-cited project are accepted and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

EDTalbert/wb
August 20, 1957

Copy to: Docket
Admr. Reading File
Mr. Chambers

8623

Docket 3143

Calera Minerals Co.

Summary of Ore Production & Royalty from Royalty folder, Wassenbergh letter of Mar. 22, 195[illegible] to Mrs. Long

Period	Ore	Assay Co %	Assay Cu %	Mineralization Tx Co	Mineralization Tx Cu	Value (Royalty)
To 9.15.56	5,509	0.65	2.44	3,580.85	13,441.96	141,195.67 (7,059.78)
9.16-30.56	1,181	0.47	1.46	555.07	1,724.26	20,017.95 (1,000.90)
Oct. 1956	1,558	0.78	3.33	1,215.24	5,188.14	48,812.14 (2,440.61)
Nov. 1956	1,911	0.72	2.60	1,375.92	4,968.60	51,539.67 (2,576.98)
Dec. 1956	2,529	0.85	2.79	2,440.55	7,167.51	70,159.39 (3,507.97)
Jan. 1957	1,480	0.85	2.89	1,263.80	4,387.80	38,988.20 (1,949.66)
Feb. 1957	2,524	0.53	2.11	1,337.72	5,325.64	43,811.84 [illegible]
Totals	16,812	0.706	2.531	11,769.15	42,203.91	414,029.86 (20,701.49)

S.P.H.

Docket 3143 2

Calera Mining Co.

Summary of Ore Production & Royalty (cont.)

Period	Tons	Assay Co%	Assay Cu%	T x Co	T x Cu	Value (+ Royalty)
To 2-28-57 (Sep. 1)	16,672	0.706	2.531	11,769.15	42,208.91	414,029.86
Mar. '57	2,110	.81	3.28	1,709.10	6,920.80	(20,701.49)
April	3,915	.70	2.41	2,740.50	9,435.15	52,644.50 (2,632.23)
						80,453.25 (4,022.66)
May	2,732	.63	2.45	1,721.16	6,693.40	53,683.80 (2,684.19)
June	1,466	.77	2.68	1,128.82	3,928.88	33,688.68 (1,684.43)
Total to Ai	26,895	0.709	2.572	19,068.73	69,182.14	634,450.09
		0.71	2.57			

Paid → 31,725.00

S. P. H. 8/21/57

DMEA Form 7
(12-56)

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Date	Surname	Code
8/5	Holt	400
8/5	Martin	400
8/5	Martin	130
"	Johnson	110
"	Chadkendy	100
8/6	S.K.	220
		400

AUG - 5 1957

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

In your letter of December 5, 1956, on the above-referenced project, you stated that certification could be made.

Since the Operator's Final Report was received in your office on March 22, 1957, certification, if it is to be made, must be prepared in time to reach the Operator before September 22, 1957.

Early receipt of the Field Team's estimate of ore reserves, with your recommendation as to certification, will be much appreciated. Please also advise us when we may expect the Final Report of the Field Team.

Sincerely yours,

W. S. Martin

ACTING Chairman, Operating Committee (HB)

APPROVED:

P. F. Yopes (HB)
Member, Bureau of Mines

Thor H. Kiilsgaard (HB)
Member, Geological Survey

SPHolt/dlm 8-5-57
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

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OFFICIAL FILE COPY
DMEA
RECEIVED JUL 19 1957

DATE	INITIALS	CODE
7-19	C	220
7/19	[illegible]	800
7/19	WSM	400

1201 N. Division St.
Spokane 2, Washington

July 9, 1957

Mr. C. A. Turner
DMEA Auditor, Region I
1201 N. Division Street
Spokane 2, Washington

Re: Docket No. DMEA-3143 (cobalt-copper)
Galena Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Turner:

The project work under the referenced contract was performed to the satisfaction of the Government. The contract was terminated by mutual agreement, effective December 9, 1956, before completion of the work.

A final inspection report was submitted by D. D. Walker on January 14, 1957, together with a supplemental report on April 18, 1957.

The Operator's final engineering and geological report was received in this office on March 22, 1957 and is considered as having met the requirements of Article 7(b) of the contract.

No equipment, materials or supplies were purchased with Government participation; consequently, the Government has no equity in these items.

The Field Team's letter of December 5, 1956 to Washington stated that a discovery can be certified as a result of the DMEA work.

Work units completed within the terms of the contract are as follows:

Stage I	Authorized	Completed
Bulldozing	864 hrs.	864 hrs.
Surface diamond drilling	8,576.5 ft.	8,576.5 ft.
Reaming	1,145 ft.	1,145 ft.
Assays	3,100 units	2,346 units
Underground diamond drilling	664.38 ft.	612 ft.

Stage II	Authorized	Completed
Drift and crosscut	6,000 ft.	3,369 ft.
Assays	5,900 units	2,338 units
Normal timber	5,000 ft.	2,195.3 ft.
Heavy timber	750 ft.	750 ft.
Framing	1,150 sets	447 sets
Diamond drilling	10,500 ft.	6,671.5 ft.
Rock bolts	1/	348
Spiling	500 ft.	500 ft.

1/ See Amendment No. 2. Total footage included in normal timber.

It is now in order for you to issue your Report of Review.

By Field Team, Region I

A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (3)
USGS (2)
USBM (AD)
Docket
Walker

3143

OFFICIAL FILE COPY

Date	Surname	Code
5/29	Mittendorf	100
6/4	C	270
6/4	WSM	400

MAY 29 1957

Mr. E. B. Douglas
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Dmea 3143

Dear Mr. Douglas:

Thank you for your letter of May 8 expressing your willingness to cooperate with Mr. Argall in his current plan to record some DMEA case histories.

Accordingly, I have passed your name on to Mr. Argall, and I am quite sure he will contact you directly in due time.

Your cooperation in this matter is deeply appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

COMittendorf/esf
5/29/57
Copy to: M&F
Admr. R. Fila
Mr. Mittendorf

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5-3	[illegible]	100
5-7	C	220
		400

DMEP- 3143

mailed after [illegible]

MAY 3 - 1957

Mr. E. B. Douglas, Manager
Calera Mining Company
Cobalt, Idaho

Dear Mr. Douglas:

I have had an exchange of correspondence recently with Mr. George O. Argall, Jr., Editor of the Mining World, who desires to publish an article in the nature of a review of some significant achievements of the DMEA program. He expresses his thoughts as follows:

> "I am thinking that a series of five or six case histories might prove exceptionally interesting to the entire geological and mining world. The examples should be carefully selected, perhaps one from each of the major regions, to illustrate how good geologic mapping or careful company analysis of structures, or an interpretation of geology on a district basis and applied to one deposit, contributed to major ore discoveries.
>
> "The purpose of this article would be to indicate that the DMEA has been worthwhile, that properly directed exploration is warranted, and that opportunity for exploration continues."

Mr. Argall hoped that my staff, together with a key engineer and key geologist in each of the regions, would cooperate with him in writing the article.

I have explained to Mr. Argall that it would be contrary to our policy to disclose any information about individual participants in the DMEA program. We do, of course, disclose the identity of a contract recipient at the time the contract is executed. After a contract is executed we conceal the percentage of committed funds actually spent, the results of the work accomplished, and whether a certification of discovery or development was issued. Likewise, we do not reveal the identity of those who have been denied DMEA assistance or of the applicants generally. I know you will readily appreciate the wisdom of this policy.

I also told Mr. Argall that we of DMEA would like to see more articles of the type he has in mind, but that they must be initiated by the publishing medium and the individual operator working in cooperation with each other. He has expressed his willingness to

8623

proceed on that basis and appears anxious to get started as soon as possible.

One approach to the project would be to have Mr. Argall send out a fairly lengthy questionnaire to all of the 1013 operators who have received DMEA contracts, requesting certain specific information. The names, as you know, have already been made public through our regular press releases issued over the years. Such an approach would entail a long and tedious screening expedition with doubtful end results.

The general idea could be more effectively implemented if I furnished the Mining World with the names of several operators who have participated with DMEA in projects which I thought might provide interesting subject matter for case histories. In this connection it occurs to me that your project, (DMEA-3143, Blackbird Mine), might be of special interest to the mining industry, but, of course, I would not even suggest your name without your prior approval. If granted, then I would expect the editorial staff of Mining World to assume responsibility for working up the details of the story, in cooperation with you or your representatives. I should appreciate your early reactions to this idea, and if favorable I will do no more than mention your name to Mr. Argall as one whom he might contact. If you do not approve, your reply will be kept confidential in my personal files.

Incidentally, Mr. Argall indicates to me that he will keep the name of the operator and the identity of the property confidential, by referring to case "A" or case "B", if the operator so desires.

With kindest personal regards,

Sincerely yours,

C. O. Mittendorf (for)

Administrator

COMITTENDORF:fw:foc
5/3/57
cc to: Mails & Files
Admr. Reading File
Administrator
Field Team, Reg. I - NW Dist.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/5	Martin	400
4/5	Chapman	400
4-8	Chambers	800
4/8	Selfridge	130
"	Johnson	110
"	Blankenship	100
4/9	C	220
		225

APR 8 - 1957

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I, N. W. District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

This will acknowledge receipt of your letter of March 29, 1957, with enclosed Government, Docket and Division copies of a Termination Agreement signed by the above referenced Operator.

We thank you for calling to our attention, in the second paragraph of your letter, that the Operator has added the phrase "by the operator" to paragraph 4 of the Termination Agreement.

As a matter of record, the Operator was given oral permission to add this phrase while on a personal visit here.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

APPROVED:

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

Thor H. Kiilsgaard (JB)
Member, Geological Survey

TLChapman:am 4-5-57
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT REG I, NWDist
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

8623

OFFICIAL FILE COPY DMEA RECEIVED APR 8 1957		
DATE	INITIALS	CODE
4/8	C	220
4/8	[illegible]	800
		225

1201 N. Division St.
Spokane 2, Washington

April 2, 1957

Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA 3143 (Cobalt and Copper)
Contract No. Idm-[redacted]
Monthly operating report for October 1956

Gentlemen:

The subject monthly operating report has been processed and forwarded to the Disbursing Officer for payment.

We are withholding an amount of $900, pending receipt of a final audit by a representative of the Contract Administration and Audit Division of Defense Minerals Exploration Administration. This is the customary procedure and is applicable to all contracts.

By Field Team, Region I, NW District

A. N. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2)
USGS (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE

March 29, 1957

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Enclosed are the Government, Docket and Division copies of a Termination Agreement signed by the above-referenced Operator. By copy of this letter, other copies of the Termination Agreement are being distributed.

The Operator, without consulting this office, has added the phrase "by the operator" to paragraph 4 of the Termination Agreement. As this was signed by Vinton H. Clarke, vice president, who is in New York, we suggest that, should the added phrase be unacceptable, you take up the matter with him directly.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures

cc: USBM (2)
USBM (AD)
Nickelson
Turner

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

March 27, 1957

OFFICIAL FILE COPY
EXTRAMURAL
RECEIVED MEA
APR 1 1957

DATE	INITIALS	CODE
4/1	C	220
4/1	[illegible]	800
		225

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (~~Cobalt-Copper~~)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Enclosed are two copies of a final report received from the Calera Mining Company. This report is acceptable to the Field Team.

In our letter to you of December 5, 1956, we recommended that a discovery be certified.

By Field Team, Region I, NW Dist.

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

For Stephen A. Zolotok

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures

cc: USBM (2)
USBM (AD)
Turner
Nickelson

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

OFFICIAL FILE COPY
D M E A
RECEIVED APR 1 1957

DATE	INITIALS	CODE

Mr. A. E. Weissenborn
Executive Office - Regional
D.M.E.A. Field Team
South 157 Howard Street
Spokane 8, Washington

Re: Docket No. D.M.E.A. 3143
Contract No. IDM-E645

Dear Mr. Weissenborn:

Enclosed is the information pertinent to the termination of the D.M.E.A. project No. 3143, which you recently requested.

All the final 40 scale geologic surface maps were submitted November 11, 1955. Details of underground geology and assays have also been sent previously. A 1,000 scale index map is now included and should be of some use to you in reviewing the entire project.

Sincerely yours,

E. B. Douglas

E. B. Douglas

EBD:vlh

Enclosure

RECEIVED
MAR 22 1957
U. S. G. S.
SPOKANE, WASH.

OFFICIAL FILE COPY
DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE

Op. Final Rpt.

EVALUATION OF RESULTS

Work under the D.M.E.A. contract No. 3143 was generally directed to the principal mineralized structures they are:

(1) Blacktail Zone
(2) Horseshoe - Old Gold Zone
(3) Indian Quartz Zone

The following is a summary of the geological and engineering information obtained in each.

BLACKTAIL ZONE

Work in this area under the contract consisted of 2,995½ feet of surface diamond drilling and approximately 1,250 feet of trenching. Underground work amounted to approximately 2,074 feet of drifting and 5,114½ feet of diamond drilling.

The Blacktail zone is separated from the Brown Bear by a very incompetent area at least 700 feet long. This area is intensely sheared, broken, and cut by many strong north-south faults and brown mica dikes generally dipping steelpy to the east. Mineralized rock here is somewhat discontinuous and low grade. This distance from the Brown Bear to the Blacktail seems to represent a right hand 700 feet, pre-ore displacement of the favorable structure in the present plan elevation.

The Blacktail zone itself is about 1,200 feet in length with an average width in the north half of about 35 feet and in the south half of about 10 feet. It is quite irregular being cut numerous small cross faults with minor offsets and is quite distorted by many assymetrical north plunging folds of varying amplitude. Also complicating the Blacktail structure is a strong north striking shear-fault zone offsetting the north and south halves an average distance of about 240 feet. This structure is similar and related to that which separates the Brown Bear and Blacktail Zones.

Correlation of north Blacktail exposures in surface trenches with the underground geology indicates an average plunge of about 41° due north to the lowest level on which the ore is now exposed (7400). However, intermediate levels show a plunge 38° N6E, and it may be that this structure is flattening out and turning slightly east with depth.

The South Blacktail was never definitely exposed on the surface. However, development on upper levels now indicate this zone to be plunging 50° nearly due north. It is not now known how far the South Blacktail continues to diverge from the North Blacktail at depth.

Cobalt and Copper values of the Blacktail ore exceptionally good when compared to the rest of the mine. Chalcopyrite appears to exceed pyrite, and pyrhotite is almost non-existent. Gold values as usual are spotty.

Depth of complete leaching in the Blacktail appears to be 50 to 60 feet. Beneath this leached zone is an area of mild supergene enrichment where the primary sulfides are coated with such minerals and chalcocite, bornite, cuprite etc. This chiefly copper enrichment has an average depth of more than 100 feet from the bottom of the leached zone and is gradational downward.

Because of the North Blacktail's width, grade, and attitude with respect to the topography, extraction of at least part of this ore appears feasible by open pit methods. Underground mining will be hampered chiefly by weak walls and the irregularity and moderately low angle plunge of the ore.

HORSESHOE - OLD GOLD

Surface work in this area consisted of 4,099 feet of diamond drilling and approximately 4,250 feet of trenching. Underground work amounted to 1,295 feet of drifting and 1,557 feet of diamond drilling.

located from 900 to 1,000 feet in the hanging wall of the Blacktail Zone the Horseshoe-Old Gold Zone strikes N27W and dips approximately 54°NE. It has a length of over 1,200 feet and average widths are still very much in doubt. The zone occurs in the garnetiferous rocks, but shows no indication so far of being controlled by any structures different from those which combine to influence the Brown Bear, Blacktail, Chicago etc.

Exposed on the surface as an almost completely leached highly siliceous gossan it presents a very favorable appearance. But holes 36, 37, 38, 39, 40, and 41 drilled from the surface into this zone produced rather discouraging results. However, complete leaching was indicated in places to be greater than 300 feet. So it is possible that most of the cobalt-copper values were leached out at the elevations where the holes penetrated the zone.

The 74/843 exploration drift reached the south end of the Horseshoe area at 500 feet below the surface. Holes drilled from this drift show mineralized widths from five to 85 feet. The location of these intersections indicate much discontinuity or an extremely variable attitude i.e. much intense folding etc. Cobalt-copper values although interesting are rather low.

Mining problems would probably be similar to those in the Brown Bear and Blacktail.

INDIAN QUARTZ

The work in this area consisted of 2,179 feet of diamond drilling (both surface and underground) and 3,750 feet of trenching.

Widespread mineralization outcrops here and on adjoining claims. However, none of the various intersections in drill holes was sufficiently interesting to justify an underground crosscut from the Chicago area.

It is probable that some of the gossans exposed on the surface correlate with Dandy Zone which has been intermittently explored and developed south of the contract limit. Work underground may eventually lead to more exploration at least in the southern part of the Indian Quartz area.

Strikes from north-south to N30W and dips range from 60° to 90° east or north east.

ORE RESERVES

Each block was calculated separately by measuring the area influenced by each assay. The areas were then totaled and volumes computed by measuring or estimating the block's height. Volumes were converted to tons by applying a tonnage factor of ten cubic feet per ton. The grade of each block has been compensated by the addition of an expected 15 percent dilution in mining and the reduction of five percent of the units as an assay safety factor.

The distinction between normal and secondary ore was based not so much on mine mineralogy as on milling amenability.

Standard classifications of ore at the Blackbird Mine are:

(1) Positive ore - that which has been delineated on two levels not more than 150 feet apart.

(2) Probable ore - that which has been delineated on one level only ore on two levels more than 150 feet apart.
or?

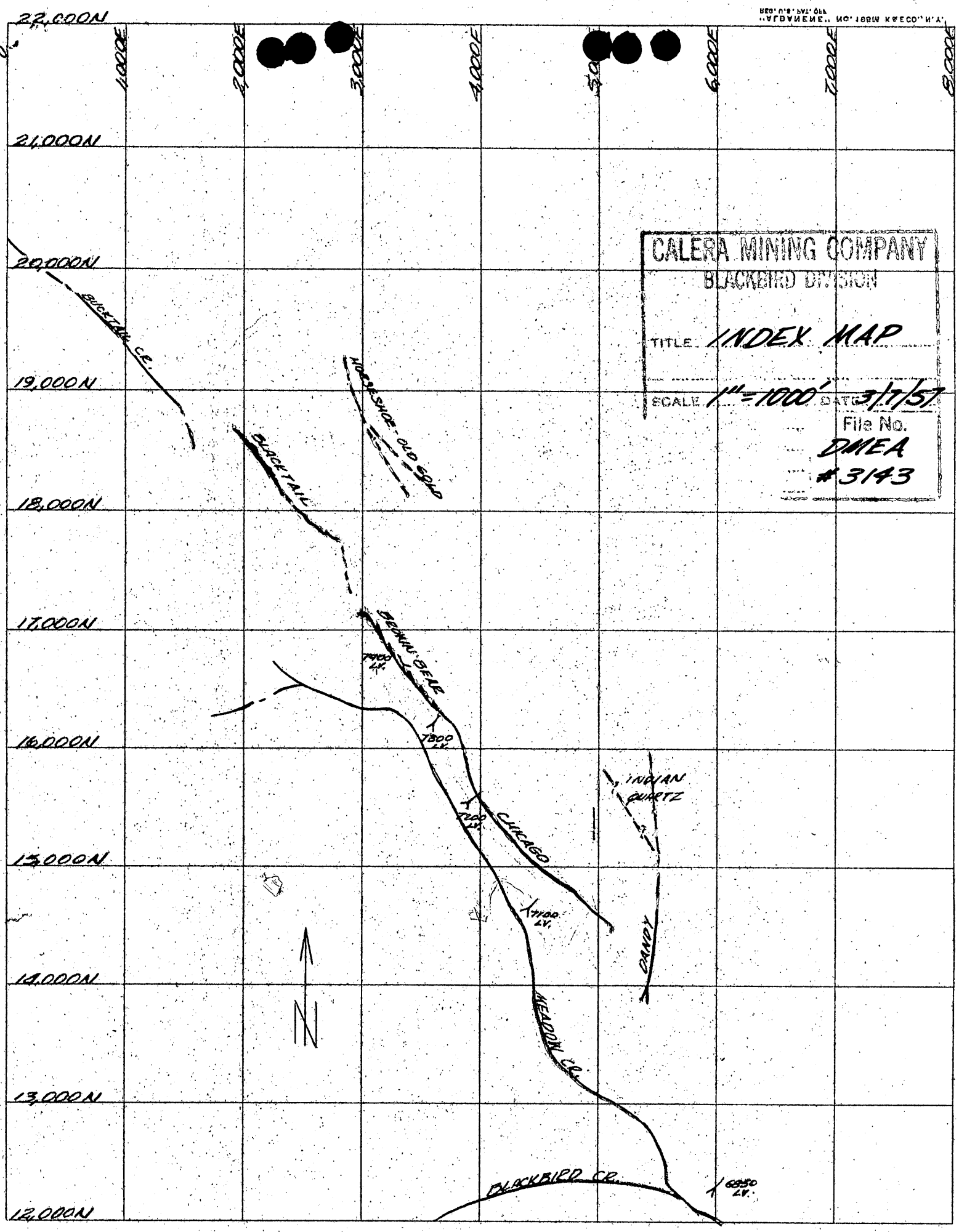
Underground exploration under the contract was, of course, confined to the 7400 Level. However, current development done during 1956 on the two levels above the 7400 have considerably increased the reserves in this area.

No ore has been included in the Horseshoe-Old Gold zone. The 74/843 exploration drift was only about 30 percent complete at the termination of the contract.

BLACKTAIL ORE	TONS	% CO	CO UNITS	% CU	CU UNITS
Positive normal	297,558	.77	229,644	2.12	631,576
Probable normal	185,736	.74	137,553	2.14	397,609
Positive secondary	155,648	.95	147,406	2.89	449,220
Probable secondary	92,912	.79	73,075	2.42	224,903
TOTAL	731,854	.80	587,678	2.33	1,703,308

The following table is a summary of the work performed under the contract and the costs incurred.

	EXPENSE SINCE INCEPTION	COST PER FOOT SINCE INCEPTION
7400 AND 787 DRIFTS		
ROCK BREAKING		
Miners and Muckers	$ 33,655.98	$ 9.60
Bonus	16,716.38	4.78
Explosives	9,830.59	2.80
Nipping and Hoisting	12,283.55	3.50
Air Drill EXpense	22,332.31	6.37
Supervision	8,810.25	2.50
Ventilation	2,624.21	.75
Mucking Supplies	1,991.68	.57
Other Labor and Supplies	3,683.78	1.05
	$ 111,928.73	$ 31.92
WASTE DISPOSAL	$ 16,900.09	$ 4.82
TIMBERING		
Labor	$ 17,190.09	4.90
Supplies	19,571.90	5.58
Timber Framing Shed	4,960.94	1.42
	$ 41,722.93	$ 11.90
TOTAL DRIFTING	$ 170,551.75	$ 48.64
ADVANCED FEET - D.M.E.A.		3,406
ADVANCED FEET - COMPANY		100
TOTAL		3,506
TRENCHING HOURS		865
Labor	$ 4,088.49	$ 4.73
Machines	3,842.46	4.44
COST PER HOUR	$ 7,930.95	$ 9.17
DIAMOND DRILLING - FEET		15,657½
Stage 1	$ 53,266.11	$ 3.40
Stage 2	32,499.66	2.08
Sampling and Assaying (1)	1,582.39	.10
Sampling and Assaying (2)	1,425.19	.09
	$ 88,773.35	$ 5.67
GEOLOGY	$ 9,880.38	
ENGINEERING	4,702.07	
TOTAL	$ 281,838.50	
CONTRACT BILLING	$ 264,612.47	
EXCESS	$ 17,226.03	
CALERA'S SHARE AT 30%	$ 79,655.93	
CALERA'S COST	$ 96,881.96	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CALERA MINING COMPANY
BLACKBIRD DIVISION
TITLE INDEX MAP
SCALE 1" = 1000'
DATE 3/7/57
File No.
DMEA
#3143
BUCKTAIL CR.
HORSESHOE - OLD GOLD
BLACKTAIL
BEDNAR BELL
7900 LV.
7300 LV.
7100 LV.
7100 LV.
CHICAGO
INDIAN QUARTZ
CANDY
MEADOW CR.
BLACKBIRD CR.
6850 LV.
N

OFFICIAL FILE COPY
D M E A
RECEIVED FEB 25 1957

DATE	INITIALS	CODE
2/25	C	220
2/26		800
		225

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

February 19, 1957

Mr. E. B. Douglas, Manager
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Douglas:

On January 8, 1957, we forwarded you an original and five copies of a proposed Termination Agreement to the above-referenced contract. This agreement was prepared because you advised us by telephone early in December that you did not wish an amendment extending the time for completion of the work. If it meets with your approval, will you please have an authorized official of the company sign all copies, retain the one marked "Operator's copy" and return the others to this office. If it does not meet with your approval, please return all copies unsigned, with your comments.

As the contract has been in default since December 9, 1956, we would appreciate a prompt reply.

By Field Team, Region I, NW District

Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

Donald R. MacLaren, Acting Member
U. S. Geological Survey

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson
Turner

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 11 1957

DATE	INITIALS	CODE
2-12	C	220
2-18	CEF	800
		225

xxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

February 6, 1957

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Douglas:

This will acknowledge your letter of December 5, 1956, concerning a basis of calculating the Government's royalty on DMEA ore.

Your proposed method of computing royalty is based upon our Memorandum of Understanding of February 6, 1956. However, at a conference in Washington on March 8, 1956, between Messrs. Clark, Holmes and Roper for Howe Sound Company and Messrs. Mittendorf, Johnson, Selfridge, and Martin for the Government, a method of computing royalty payable to the Government was agreed upon. The method was stated in the last two paragraphs of Mr. Mittendorf's letter of March 14, 1956, to Mr. Vinton H. Clarke, vice-president, Calera Mining Company, a copy of which we sent you December 4, 1956. This method of computing royalties was agreed to by Mr. Clarke in his letter of March 26, 1956 to Mr. C. O. Mittendorf, Administrator, DMEA.

We will require with each settlement check a summary statement showing how the royalty has been calculated. Your records should be kept in such a manner that the basis of this calculation can be checked from time to time by our DMEA auditor.

We understand considerable ore is being mined from the Blacktail ore zone and the royalties, therefore, are accumulating rapidly. We are anxious, therefore, to have this matter settled as soon as possible.

By Field Team, Region I, NW Dist.

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wm. G. Agnew, Member
U. S. Bureau of Mines

cc: Vinton H. Clarke
Calera Mining Co.
730 Fifth Ave.
New York 19, N. Y.

DMEA (2)
USGM (2)
USGM (AD)
Turner
CPF

Official

~~EXTRA COPY~~
DMEA
RECEIVED JAN 14 1957

DATE	INITIALS	CODE
1/15	WSM	400

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

January 9, 1957

Mr. L. E. Douglas, Manager
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA -3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Ida-263

Dear Mr. Douglas:

Our Washington office has prepared a Termination Agreement, the original and five copies of which are enclosed. If it meets with approval, would you please have an authorized official of the company sign all copies, retain the one marked for the Operator, and return the rest to this office.

Your attention is called to Item 3 of the Agreement about the rendering of the final report and final account. Article 7(b) of the contract states: "Upon completion of the exploration work or termination of the contract the operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work." This final report should include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches (five copies), and a summary of the work performed and related costs incurred.

It would be to your advantage to submit your report on the project and your final voucher, if any, as soon as you can. We will not be able to proceed with the closing out of your account and making settlement thereof until you do so.

By Field Exam, Region I, Mt Dist.

R. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Enclosures

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson
Turner

King G. Agnew, Member
U. S. Bureau of Mines

400
DOCKET
SURNAME
Chapman
Martin
Fisher
Selfridge
Mitchell

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I, N. W. District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt, Copper
Celero Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-3645

Dear Mr. Weissenborn:

Enclosed are the original and five copies of a proposed Termination Agreement to the above referenced Contract, signed by the Administrator for the Government. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of the proposed agreement are satisfactory to you and the Operator, all six copies are to be signed by the Operator and the usual distribution made.

If any part of the proposed agreement does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Schindler (857)

Chairman, Operating Committee

APPROVED:

Frank D. Lamb (857)

Member, Bureau of Mines

Thor H. Kiilsgaard (857)

Member, Geological Survey

TLChapman:am 12-31-56
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT REG I, NWDist
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

Enclosure

400
DOCKET
SURNAME
Chapman
Martin

December 19, 1956

MEMORANDUM

To: Associate Solicitor, Division of Mineral Resources

From: Iron and Ferro-Alloys Division, DMSA

Subject: Preparation of Termination Agreement
Docket No. DMSA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-3645

Attached is rough draft of Termination Agreement of the above-captioned contract for your use in preparing in final form.

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

Attachment

TLChapman:am
cc to: Docket
Code 400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
DEC 26 1956
D.M.E.A.

December 19, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

I am enclosing herewith three copies of Mr. Douglas' reply to the Field Team's letter of December 4th regarding the payment of royalties on the DMEA discovery of the Blackbird Mine.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW District

Enclosures

cc: USBM (2)
USBM (AD)
Nickelson

RECEI
BUREAU OF MINES
DEC 14 1956
SPOKANE, WASH.

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

RECEIVED
DEC 26 1956
D.M.E.A.

December 5, 1956

Mr. A. E. Weissenborn
Executive Office - Region 1
D.M.E.A. Field Team
South 157 Howard Street
Spokane 8, Washington

W 409

Re: Docket No. D.M.E.A. 3143
Contract No. Idm-E645

Dear Mr. Weissenborn:

No exploration was done under the D.M.E.A. contract during the month of November, 1956.

However, development of the Blacktail zone is proceeding rapidly. On the 7400 Level in the north part of this zone three stopes have been started and fourth is being prepared. On two upper levels, 7540 and 7675, delineation by diamond drilling at 25 foot intervals is almost complete. Two raises are being started from the 7675 Level to locate the top of the ore and the bottom of the leached zone.

Sincerely yours,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas

E. B. Douglas, Manager

EBD:srp

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

December 5, 1956

RECEIVED
1956
D.M.E.A.

Mr. A. E. Weissenborn
Executive Office - Region 1
D.M.E.A. Field Team
South 157 Howard Street
Spokane 8, Washington

Re: Docket No. D.M.E.A. 3143
Contract No. Idm-E645

Dear Mr. Weissenborn:

Your Mr. Don McLaren contacted us yesterday in connection with our basis of calculation of and repayments of the D.M.E.A. Loan.

Until a definite method of determination is set we have used the following procedure:

For the calculation of cobalt value:
The average grade of the ore drawn from the Blacktail stated in pounds is multiplied by the estimated recovery of cobalt for the month in the mill, and that result is multiplied by $1.35. The latter figure is our estimated value at the mine per pound of cobalt.

For the calculation of copper value:
The same procedure as above with the exception that the current price of copper is reduced by the marketing charge to get the net smelter value.

The sum of these values multiplied by the number of tons drawn from the Blacktail orebody and that result multiplied by the appropriate royalty rate gives the liability for the month.

As you know the Blacktail ore is not milled separately, so we feel that the average mill recoveries are the most appropriate.

We are awaiting instructions from our New York office on the mecha of repayment. You no doubt will hear from them in due course.

Yours very truly,

E. E. Douglas, Manager

EED:srp

cc: VHClarke

DMEA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED DEC 19 1956 D.M.E.A.

December 18, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

In a discussion in Washington with the Executive Officer with reference to the Field Team's letter of December 5, 1956, recommending termination of the Calera contract by mutual agreement, you suggested that before terminating it might be well to test the so called Gold Coin-Homestake zone east of the Blacktail zone by means of a drill hole or two so that some information would be available on the ore potential of this zone.

Your attention is directed to a narrative report for the month of October 1956 by the Calera Mining Company, dated November 6, 1956 but received here December 3, 1956, copies of which should have reached you by now. The log of hole 74-111 which is attached to the report shows an 85-foot mineralized zone from 9 to 94 feet within which there are three bands of ore grade as follows:

Intercept (feet)	Width (feet)	% Co	% Cu
24 - 39	15	1.04	0.42
54 - 69	15	1.20	1.30
84 - 94	10	0.73	0.12

In addition, there is a 3-foot zone that may be of ore grade between 236 and 239 feet.

The Gold Coin-Homestake zone is still inadequately explored - in fact it has been barely penetrated - but the results of hole 74-111, taken in conjunction with soil sampling and surface diamond drilling suggest that DMEA exploration may be on the south edge of a zone similar to that discovered by DMEA exploration in the Blacktail area to the west. Thus, there now is some basis for an appraisal of the mineral potential of the Gold Coin-Homestake area, and work done to date has provided ample evidence to justify further exploration in this area at some future time. Drill hole 74-111, therefore, appears to have provided the information you think the Government should have before agreeing to a mutual termination of the DMEA contract.

By Field Team, Region I, NW Dist.

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)
USBM (AD)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

December 5, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Mr. E. B. Douglas, manager of this property, advised us by telephone that Calera Mining Company does not wish to request an extension of time to complete the contract beyond the completion date of December 9, 1956. Although there remains considerable work to be completed as listed in an Interim Inspection Report dated November 30, 1956, by D. D. Walker, engineer of the Bureau of Mines, a discovery probably in excess of 500,000 tons of ore, having an average grade of about 1.0 percent cobalt and 2.5 percent copper, has already resulted from the DMEA work. A discovery can be certified; therefore, the Field Team recommends that a mutual termination agreement be prepared for the Operator's signature.

noted for exp. preation S.H.

By Field Team, Region I, NW Dist.

Wing G. Agnew

Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

Donald R. MacLaren

Donald R. MacLaren, Acting Member
U. S. Geological Survey

cc: USBM (2)
USBM (AD)
Nickelson

RECEIVED
DEC 10 1956
D.M.E.A.

RECEIVED
DEC 10 1956
D.M.E.A.

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

December 4, 1956

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143(Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Douglas:

According to reports of our fieldmen, a substantial quantity of ore is, or will be, mined from the workings which form part of the Defense Minerals Exploration Administration project.

I am enclosing a copy of a letter from the Administrator, Mr. C. O. Mittendorf to Mr. Vinton H. Clarke, vice-president of your company, with respect to the manner of computing royalty, and we suggest that you compute it on this basis as you interpret it in the letter. At a later date, our DMEA auditor can review the computation and adjustments, if any, can be made at this time.

Sincerely yours,

D. R. MacLaren
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosure

cc: DMEA (3)
USBM (2) ~~w/cy of encl.~~
USBM (AD) w/cy of encl.
Turner " " "
Nickelson
CPF

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

DOCKET
SURNAME
400
Martin
Talbot
Selfridge
Johnson
Wattendorf

Mr. A. E. Weissenborn, Executive Office
DMEA Field Team, Region I - NW District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-P645

Dear Mr. Weissenborn:

In the Interim inspection report of September 10, 1956, from Howard E. Nickelson, USGS, we note that no royalty payments have been received on an estimated production of 4,000 tons of ore, because a satisfactory method of payment between the Government and the subject operator has not yet been agreed upon.

Enclosed are copies of a pertinent letter of March 14, 1956, from the Administrator to Mr. Vinton H. Clarke, Vice-President, Calera Mining Company, 730 Fifth Avenue, New York 19, N. Y., and of Mr. Clarke's reply of March 20, 1956.

We regret that through an oversight these same copies were not sent to you immediately.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

APPROVED:

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

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

WSMartin:foc 9/24/56
cc to: Docket
Code 400
Admr. Read. File
Oper. Comm.
FT. REG. I - NW DIST
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

C

2436
Docket

Mr. Chairman
Selfridge

SEP - 7 1956

Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA-2436, Co-Cu
Northfield Mines, Inc.
Stevenson property
Lemhi County, Idaho
Contract No. Idm-E-334

Docket No. DMEA-3143, Co-Cu
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

This will acknowledge receipt of your letter of August 23, 1956, with enclosed copies of "Special Agreement Concerning Land" (the Queen Claim), together with photostatic copies of deeds to mining claims executed by Northfield Mines, Inc., and Floyd W. Stevenson and Merle Stevenson, conveying the Queen Patented Mining Claim #2128, in the Blackbird Mining District, Lemhi County, Idaho, to Calera Mining Company.

One copy of said agreement, executed by the Acting Administrator, is returned herewith, and one executed copy, as you requested, has been sent to Northfield Mines, Inc.

Your cooperation in this matter is appreciated.

Sincerely yours,

Frank E. Johnson

ACTING Administrator

Enclosure

cc: Docket
Code 400
Adm. Read. File
Oper. Committee
T. Kiilsgaard, USGS

cc: H. W. Davis, USBM
FT, Reg. I-NW Dist.

WSMartin/ls
8/29/56

R.C.

C

3143
Docket
Chapman
Selfridge

SEP - 7 1956

Northfield Mines, Inc.
230 Park Avenue
New York 17, New York

Re: Docket No. DMEA-2436, Co-Cu
Northfield Mines, Inc.
Stevenson property
Lemhi County, Idaho
Contract No. Idm-E334

Docket No. DMEA-3143, Co-Cu
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

Enclosed for your files is copy of a "Special Agreement Concerning Land" (the Queen Claim), submitted to us by letter of August 23, 1956, by Calera Mining Company and executed by the Acting Administrator.

Your cooperation in this matter is appreciated.

Sincerely yours,

Frank E. Johnson

ACTING Administrator

Enclosure

cc: Docket
Code 400
Adm. Read. File
T. Kiilsgaard, USGS
H. W. Davis, USBM
Oper. Committee
FT, Region I-NW Dist.

WSMartin/ls
8/29/56

R.C.L.

400

C O P Y

CALERA MINING COMPANY
730 Fifth Avenue

New York 19, N. Y.

August 23, 1956

Dmea-3143

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

Dear Sirs:

Enclosed, herewith, are the original and eight copies of a "Special Agreement Concerning Land" (the Queen Claim), together with photostatic copies of deeds to mining claims executed by Northfield Mines, Inc., and Floyd W. Stevenson and Merle Stevenson, conveying the Queen Patented Mining Claim #2128, situated in the Blackbird Mining District, located in Lemhi County, Idaho, to Calera Mining Company.

The delay in returning this to you has been occasioned by the delay in having the above mentioned deeds executed and recorded.

It would be appreciated if you would return one copy of the enclosed agreement to us, and one copy of the Northfield Mines, Inc., after they have been executed by the government.

Very truly yours,

Signed: William T. Holmes

WTH/gh
encls.

RECEIVED
AUG 29 1956

3143
Audit

[illegible] Contract No. Ion-[illegible] Docket No. [illegible] 3243
Schedule of Interim Audit Adjustments
Period of December 9, 1953 to March 31, 1955

	Operator's Cost Statement	Audit Adjustments: Labor	Supervision	Supplies & Contract	Depreciation	Payroll Taxes	Workmen's Compensation	Total	Corrected Distribution
Drifting					$5,283.94			$ 5,283.94	$ 57,772.96
Rock Breaking	$ 38,044.85							38,044.85	
Waste Disposal	5,044.82							5,044.82	
Timbering	20,498.56				2,252.18			22,750.74	26,757.07
Trenching	7,919.05				721.74			8,640.79	10,035.83
Diamond Drilling		190.34			32.24			222.58	54,948.31
Stage 1	53,266.11							53,266.11	
Stage 2	136.40							136.40	
Supplies				81.37				81.37	
Contract				(70.26)				(70.26)	
Sampling and Assaying									1,652.10
Stage 1	1,582.39							1,582.39	
State 2	244.28							244.28	
Supervision			($841.61)					(841.61)	
Geology	5,659.03							5,659.03	
Engineering	2,182.58							2,182.58	
Miscellaneous Labor									
Accounting	1,996.44							1,996.44	
Holiday	479.14							479.14	
Vacation Pay	621.11							621.11	
Payroll Taxes						183.39		183.39	
Old Age Pension	877.14							877.14	
Unemployment Insurance	981.17							981.17	
Workmen's Compensation	2,425.63						1,634.74	4,060.37	
Total	$141,958.70	$190.34	($841.61)	$11.11	$8,290.09	$183.39	$1,634.74	$151,466.67	$151,466.67

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUN 19 1956

June 15, 1956

3143

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

Dear Mitt:

In line with a recent conversation in Washington between you and the Executive Officer on how much exploration is being done by some companies on their own account as a direct outgrowth of DMEA discoveries, I think that the latest developments at Calera will be of interest to you.

Our latest information (by telephone from Ed Douglas on June 12) is that the ore body that was previously known only from the DMEA surface and underground drill holes has now been crosscut in two places and some drifting has been done on it. An adit is being started about 75 feet above the 7400 level but this has not yet reached the ore body. The work to date has shown the ore body is somewhat lensy -- a condition typical of the Blackbird district -- but Ed now estimates that the tonnage above the 7400 level amounts to 250,000 tons that "will exceed 0.8 percent cobalt and 2.5 percent copper." These are figures that Ed is willing to have quoted; he actually estimates -- but not for publication -- a grade of slightly over 1.0 percent cobalt and 3 to 4 percent copper, or nearly twice the grade of the previously known ore. There is a maximum of about 350 feet of backs over the 7400 level and a minimum of about 120 feet. The potential tonnage below the level is greatly in excess of that above the level. To date no exploration has been done below the level nor has an estimate of reserves been made.

Recent underground drilling has confirmed a second or footwall zone that also was indicated by soil sampling and DMEA surface drilling. The holes average around 0.50 percent cobalt. DMEA-sponsored drifting will be started on this zone immediately.

The work has been so encouraging that the Company has undertaken additional exploration of its own, and is trenching and drilling an area 2,000 feet north of the new discovery. Drill holes indicate another possible zone running about 0.50 percent cobalt over

about 15 feet. This work is being done on Company account as a result of the encouragement from the DMEA project. The DMEA contract provides for 70 percent participation by the Government in the cost of exploration as compared to 30 percent by the Company. Douglas states that as a result of the increased Company-financed exploration this ratio has now been almost exactly reversed.

The original discovery from which the whole business started resulted from a highly successful World War II Bureau of Mines drilling project undertaken in cooperation with the U. S. Geological Survey. The new discovery results from DMEA exploration of targets outlined by Survey surface mapping in 1942-45 and geochemical prospecting in 1951 and 52.

By Field Team, Region I, NW Dist.

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM (2)

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

No. 157 Howard Street
Spokane 4, Washington

April 27, 1956

...ra Mining Company
...ckbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Gentlemen:

This is to inform you that payment in the full amount claimed in the voucher submitted covering costs for January 1956 was not made.

A deletion of $639.63 has been made from the costs claimed for drifting and crosscutting because we understood, as a result of our conference with Mr. Douglas in Spokane on February 6, that you wished to do this work in the 74/852 Drift North on company account. The contract footage saved might then be used in another area.

By Field Team, Region I, NW District

A. E. Weissenbern, Executive Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson

RECEIVED
MAY 4 - 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
APR 23 1956

April 20, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Enclosed are the Government, Docket, and Division copies of Amendment No. 4 to the contract.

By copy of this letter other copies of the amendment are being distributed.

Sincerely yours,

Verne C. Fryklund Jr.

Verne C. Fryklund, Jr.
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosures

cc: Finance Office
USBM (2)
Nickelson

April 18, 1956

Memorandum

To: The Files

From: George C. Selfridge
Special Assistant

Subject: Docket No. DMMA-3143 (Cobalt, Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Ida-8645

Mr. Clarke of the subject company, after discussing the proposed new work at Chelan, asked about Item 3 in proposed Amendment No. 4 to the subject contract. He stated that the item deleted the word "provided" and while he did not believe it had any direct effect on the company he did wish to know what it concerned. The writer explained to him that the sentence was ambiguous, and that there had been different interpretations relating especially to the responsibilities of the operator and the lessor after a project had been certified. Thus the sentence was being automatically deleted in the older contracts and it was made more explicit in the new contracts.

George C. Selfridge

George C. Selfridge

GCSelfridge/esf
Copy to: Docket
Admr. R. File
Messrs: Martin
Selfridge
Johnson

CALERA MINING COMPANY

730 FIFTH AVENUE

NEW YORK 19, N. Y.

RECEIVED
MAR 21 1956

March 20th, 1956

31443 WSM

Mr. C. O. Mittendorf, Administrator
United States Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Copy retained 400

RE: CONTRACT NO. IDM-E645

Dear Mr. Mittendorf:

Many thanks for your letter of March 14th which is in respect to our recent conference in Washington on the proposed Amendment No. 4 to our exploration contract at the Blackbird Mine.

Your outline of the manner in which royalties should be paid is in accordance with our understanding. We will look forward to receiving copies of the above-noted Amendment.

Yours sincerely,

CALERA MINING COMPANY

VICE-PRESIDENT

VHC:RF

No reply necessary

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~XXXXXXXXXXXXXXXXXX~~
So. 157 Howard Street
Spokane 4, Washington

March 19, 1956

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Ida-[illegible]45

Dear Mr. Douglas:

Enclosed are the original and six copies of Amendment No. 4 to your exploration contract. If the terms and conditions of this revised amendment are acceptable would you please sign all copies and return all but the copy marked for the Operator.

If the amendment does not meet with your approval please return all copies with your comments.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosures

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson

400 Martin
Chambers
Selfridge
Johnson

MAR 1 4 1956

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA-3143,
Cobalt-Copper
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E845

Dear Mr. Clarke:

Reference is made to your letter of March 1, 1956, and, insofar as it concerned the subject project, to our conference here in Washington on March 8, that was also attended by Messrs. Holmes and Roper from your company and Messrs. Johnson, Selfridge, and Martin from the DMEA staff.

This letter will confirm that we are sending to Mr. Weissenborn, for your approval, a proposed Amendment No. 4, which differs from the proposed Amendment No. 4 that you returned to Mr. Weissenborn with your letter of February 9 in that the new proposed Amendment No. 4 does not substitute Annex III for Annex II. Item 4 thereof, however, extends the period for royalty payments in Annex II by one year; that is, the new Item 4, like the former Item 4, changes the period for royalty payments from 12 years to 13 years from the date of the contract.

With respect to the manner of computing royalty payable to the Government, you were advised that computation of royalty under the subject contract would depend in the case of your copper concentrates on the information provided by your smelter settlement sheets.

In the case of your cobalt concentrates, for the preliminary shipment we are agreeable to using the same value which you estimate as gross revenue to mining operations for income tax purposes. Such preliminary payments shall be subject to adjustment when the Internal Revenue Service shall have approved or adjusted your same estimated gross value.

Sincerely yours,

C. O. Mitteador

Administrator

WSMartin/ls
3/13/56

cc: Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
H. W. Davis, USBM
Code 800

DOCKET
SURNAME
Chapman
400 Martin
Selfridge
H. Johnson
M. Henderson

MAR 13 1956

nborn, Executive Officer
, Region I - Northwest District
d Street
ington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

r. Weissenborn:

Enclosed are the original and five copies of Amendment No. 4 to the above-referenced contract, revised to satisfy the Operator's objections, and signed by the Administrator for the Government. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this revised amendment are acceptable to you and the Operator, all six copies should be signed by the Operator and the usual distribution made.

If any part of the revised amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (SAB)

Enclosure

APPROVED:

/s/ Robert W. Geehan (SAB)
Member, Bureau of Mines

Thor H. Kiilsgaard (SAB)
Member, Geological Survey

TLChapman/foc 3/9/56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. I - NWD
H. W. Davis, USBM
T. H. Kiilsgaard, USGS

R.D.G.

D R A F T

WSMartin/ls
3/9/56

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3143, Cobalt-Copper
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Clarke:

Reference is made to your letter of March 1, 1956, and, insofar as it concerned the subject project, to our conference here in Washington on March 8, that was also attended by Messrs. Holmes and Roper from your company and Messrs. Johnson, Selfridge, and Martin from the DMEA staff.

This letter will confirm that we are sending to Mr. Weissenborn, for your approval, a proposed Amendment No. 4, which differs in one respect from the proposed Amendment No. 4 that you returned to Mr. Weissenborn with your letter of February 9. In the new proposed Amendment No. 4 ~~is like the previous proposed Amendment No. 4, except that~~

Blacker

CALERA MINING COMPANY

730 FIFTH AVENUE

3143

RECEIVED
MAR - 5 1956

March 1st, 1956

NEW YORK 19, N. Y.

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Washington 25, D. C.

WSM

Dear Mr. Mittendorf:

Mr. A. E. Weissenborn has advised me that you will require a letter stating our reasons for objecting to wording in the proposed Amendment No. 4 to our Exploration Contract.

Will you please refer to the Memorandum of Understanding between Mr. E. B. Douglas and Mr. Weissenborn, under date of February 6th, 1956. As is stated therein, our objections are based on the fact that Annex III, which is a part of proposed Amendment No. 4, alters drastically the meaning of Article 9 of the original contract. May I illustrate this by using the following example of future royalty payments on production:

Assume grade of 0.71% Co(1), 1.31% Cu(1)
Mill recoveries 75% Co, 90% Cu

Terms of Original Contract:

Recovered Cobalt(2) per ton at mill 10.66# @ $1.35	=	$14.39
Recovered Copper(3) per ton at mill 23.58# @ .33	=	7.78
Net smelter returns		$22.17
Royalty @ 5% max.	=	1.11/ton
Royalty per month @ 26,000 tons/mo.		$28,900.00

Terms of Annex III of Proposed Amendment No. 4:

Annex III does not allow for cobalt concentrate transportation, refining costs, depreciation and metal marketing.

Recovered cobalt per ton at refinery 10.66#x.90x2.60	=	$24.94
Recovered copper per ton at mill 23.58#x.33	=	7.78
Gross returns		$32.72
Royalty @ 5% max.	=	1.64
Royalty per month @ 26,000 tons		$42,640.00

(1) Per ore reserve grade.
(2) Cobalt concentrates shipped to Calera Refinery, Garfield, Utah.
(3) Copy retained 400
Copy retained 400

Copy made + sent to 800
3/6/56 to be sent
(2 attached to Xerox Team)

The above comparative figures are estimates, of course, and will change with varying metal prices, recoveries, and refinery and smelting costs, but are indicative of the magnitude of royalties which may be involved with full production from the areas now being explored. A royalty increase of over 47% is indicated under the provisions of the proposed Amendment, in addition to the fact that the term of contract has been increased one (1) year, to a total of thirteen (13) years.

Actually there is little likelihood that we will not have paid off the full loan from production long before the thirteen-year period has elapsed. However, payment of royalties of the magnitude above-indicated over a short time period would be extremely burdensome in our high cost operation. We, therefore, request that the terms of Article 9 of the original contract be retained in Amendment No. 4.

Yours sincerely,

VINTON H. CLARKE,
Vice-President

VHC:RF

ccs: Weissenborn
Douglas

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
FEB 17 1956

February 13, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

I am returning herewith unsigned all copies (except the "extras") of Amendment No. 4 to the Calera contract together with copies of Mr. Clark's letter of February 9 returning the amendment to us.

The Calera Company's reasons for refusing to sign this amendment were expressed in Mr. Douglas' letter of January 24 which was transmitted to you with Field Team letter of February 8 in which we reviewed the results of our February 6 conference with Mr. Douglas and recommended that Annex III be deleted from the amendment.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Enclosures

cc: USBM (2)
USBM (AD)
Turner
Nickelson

RECEIVED
FEB 17 1956

CALERA MINING COMPANY

730 FIFTH AVENUE

REFER TO	ACTION	NOTED	DATE
Al			
Vernon			

NEW YORK 19, N. Y.

February 9th,
19 56

Mr. A. E. Weissenborn,
Executive Officer, DMEA
U.S. Department of the Interior
Field Team, Reg. I, NW Dist.
So. 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenborn:

Please find enclosed original and six (6) copies of Amendment No. 4 to the Calera Mining Company DMEA Contract No. 3143.

Mr. Douglas has recently been in conference with you regarding this Contract Amendment, and I am forwarding these particular Amendments to you at his request.

Yours sincerely,

CALERA MINING COMPANY

Vice-President

VHC:RF

Encls.

RECEIVED
FEB 13 1956
U. S. G. S.
SPOKANE, WASH.

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

So. 157 Howard Street
Spokane 4, Washington

RECEIVED
FEB 13 1956

February 8, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

At the Field Team's suggestion Mr. E. B. Douglas, manager of the Calera Mining Company's Blackbird mine, accompanied by members of his staff (W. C. Cole, geologist, and G. B. Deacon, accountant) came to Spokane on February 6, 1956, to discuss various problems in connection with the Blackbird project.

The recent discoveries at the Calera property have made such a conference desirable. Company officials estimate that DMEA exploration on the 7400 level has found approximately 205,000 tons of ore averaging 1.10 percent cobalt, 2.70 percent copper, 0.02 ounce of gold and 0.6 ounce of silver per ton above the 7400 adit level. Extensions in depth could, of course, greatly increase this estimate. Exploration up to now has been wholly on one level and the grade which is known only from drill hole intersections can be considered approximate only and will need to be checked by additional development. Nevertheless, the company is convinced that this is a discovery of major significance.

The first problem discussed was that of Amendment 4. The Calera Mining Company has objected to signing this amendment because of the inclusion of Annex III which changes the method of calculating the royalty. Mr. Douglas has forwarded this amendment to his New York office. Inasmuch as Mr. Mittendorf in a telephone conversation with the Executive Officer concerning a nearly identical case with the Bunker Hill contract stated that it was not the intention to change the method of calculating royalty, the Field Team was authorized to delete Annex III from the Bunker Hill contract. Since the situation appears nearly identical it is recommended that this Annex also be deleted from Amendment 4 to the Calera contract.

The second item discussed was the method of determining the value of the concentrates. There is no difficulty in assessing the value of the copper concentrate as this is sold to an outside smelter, but unfortunately there is no ready way of assessing the value of the cobalt concentrate. This is because (1) there is at the moment no open schedule for the purchase of cobalt ores, and (2) the distribution of revenue between the mine at Cobalt, Idaho, and the refinery at Salt Lake City is ~~the~~ a matter which is now being discussed between the Company and Idaho and Utah tax authorities. It may be some time before a decision is reached on this.

Mr. Douglas states that it may be as much as 2 or 3 years before the new ore body is brought into production; consequently, a final settlement of this matter is not required immediately. However, in the near future there is expected to be development ore from the new discovery on which the Government is entitled to a royalty and therefore it is essential that some provisional method be devised for determination of the royalties due the Government.

After some discussion the following scheme was worked out which we offer for your consideration. Mr. Douglas is likewise presenting this to his New York office for their approval as he does not have the authority to do more than recommend. The Company maintains a careful control of grade and tonnage of the ore through car sampling and thus the grade and tonnage of DMEA ore can readily be determined. The local management estimates that 75 percent of the cobalt and 90 percent of the copper in the mill heads is recovered and that at the present prices of $2.60 per pound for cobalt and 43¢ per pound for copper, the value of the concentrate is about $1.35 per pound for the cobalt and 33¢ per pound for the copper. These figures include credits for the small amount of gold and silver in the ore. It is therefore suggested that pending the establishment of the value of the cobalt concentrate royalty payments be made on the basis of the above figures.

Applying this to the estimated average grade of the DMEA discovery the following royalties would result:

22 lbs. of cobalt x 75% = 17.6 lbs. cobalt recovered
17.6 x $1.35 = $23.76 value of cobalt

54 lbs. of copper x 90% = 48.6 lbs. copper recovered
48.6 x 33¢ = $16.04 value of copper

$23.76 + $16.04 = $39.80 total value of concentrates translated back to ton of ore

$39.80 x 5% = $1.99 royalty due the Government per ton of ore sent to the concentrator

The above method presents a simple means of determining royalties which we believe is fair to both parties and which would involve a minimum of bookkeeping. We suggest that it be applied until a better determination of the value of the cobalt concentrate can be made at which time the problem can be reopened. If the estimated grade and tonnage of the DMEA ore is correct, this rate of repayment would be more than adequate to reimburse the Government for its proportion of the exploration costs.

The third item discussed was plans for completing the present project. On the 7400 level the permitted footage on the west drift where the discovery has been made has been essentially used up. A crosscut has been driven to the supposed eastern ore zone and drifting is planned to start on this very shortly as soon as some preliminary diamond drilling is done. There are about 2,000 feet of crosscutting and drifting that has been earmarked for the 7100 level but which the Company now does not wish to do as preliminary diamond drilling has indicated that any ore that might be found there would be in small and scattered lenses. The Field Team is in agreement that this footage might better be used elsewhere. We had suggested that some of it be employed for crosscutting to the new ore body and for a limited amount of drifting on that ore body. Mr. Douglas, however, states that the Company now has enough information on the new ore body so that it is willing to go ahead with rather extensive development on its own and therefore he suggested that consideration be given to use of this footage elsewhere. He tentatively proposes exploration of an extension of the cobalt-bearing zone about 1,500 feet north of the present face of the 7400 drift. Self-potential lines have indicated a sharp high in this area and bulldozer trenching done on company account has uncovered some very favorable gossans. He therefore proposes to use some of the 7100-level footage for the exploration of this prospect which is on ground already included in the present contract. Mr. Douglas states that he will wish to discuss this proposal with his New York office before presenting it to us. The Field Team has stated merely that it would be willing to consider a formal proposal from him and present it to the Operating Committee.

Present work has exhausted the allowance for heavy timbering and spiling but because of the probability that a new proposal may be forthcoming it is suggested that this be left pending until we find out specifically what the Company's plans are.

The results of the conference then are to some extent indecisive but as they will have a bearing on future decisions this summary has been prepared for your guidance.

Copies of a so-called "memorandum of understanding" signed by Mr. Douglas and the Executive Officer are attached. It will be noted that this merely summarizes the discussion at the conference and does not bind anybody to anything.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Concurred in by
U. S. Bureau of Mines

Thomas E. Howard

Thomas E. Howard

Enclosure

cc: USBM (2)
USBM (AD)
Turner
Nickelson

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

RECEIVED
FEB 13 1956

So. 157 Howard Street
Spokane 4, Washington

February 6, 1956

Re: Docket No. DMEA-3143 (Cobalt-Copper), Calera Mining Company, Blackbird Mine, Lemhi County, Idaho, Contract No. Idm-E645.

Memorandum of Understanding between DMEA Field Team, Region I, Northwest District, and Management of Calera Mining Company, Blackbird Division, Cobalt, Idaho

At a conference with Mr. E. B. Douglas, Mr. G. B. Deacon, and Mr. W. C. Cole on the morning of February 6, 1956, the Field Team (A. E. Weissenborn, Stephen W. Zoldak, Verne C. Fryklund, Jr., and Howard B. Nickelson) discussed the objections of the company to signing Amendment 4. These objections result from the fact that Annex III, which is a part of Amendment 4, alters the meaning of Article 9 of the original contract. It was agreed that the Field Team would recommend that this annex be deleted.

Mr. Douglas estimates that it may be as much as 3 years before the ore bodies discovered by the DMEA contract are brought into production. However, it is probable that there will be some production of development ore in the near future. The Calera Mining Company is an integrated operation and at the moment it has not been determined how the net revenues will be divided between the refining operation and the mining operation. Until this is determined it will not be possible to fix a precise value on the concentrates delivered to the refinery. The local management estimates that the value of the cobalt contained in the concentrates at the concentrator is about $1.35 per pound and that the copper in the concentrates on the same basis is worth about 33¢ per pound.[1] They also estimate that 75 percent of the cobalt and 90 percent of the copper is recovered from the mine ore. Inasmuch as an accurate control of ore delivered to the mill is maintained through car samples, it is recommended that the royalty be based temporarily on the value of the ore at these figures.

---

[1] These figures are based on a market price of cobalt at $2.60 per pound and copper at 43¢ per pound, and would be subject to revision in the event of any significant price changes.

RECEIVED
FEB 13 1956

It is understood that the above is not binding on either party but is a suggested method of resolving royalty payments.

E. B. Douglas, Manager
Blackbird Division
Calera Mining Company

A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region I
Northwest District

cc: Calera Mining Co. (2)
USBM (2)
USBM (AD)
Turner
Nickelson
DMEA (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
FEB - 3 1956

January 31, 1956

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Copper-Cobalt)
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Douglas:

In reply to your letter of January 27, our interpretation of Annex III is the same as yours, i.e., that it would place the royalty on the gross proceeds of the sale of cobalt metal with no deduction for the cost of refining or of shipping the concentrate from Cobalt to Salt Lake City.

Please return all copies of the amendment including the Operator's copy, to us together with a statement of your objections to the provisions of the amendment. We will then call the attention of our Washington office to this matter.

By Field Team, Region I, NW Dist.

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
FEB - 3 1956

January 31, 1956

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Mr. E. B. Douglas, manager of the Calera Mining Company, Cobalt, Idaho, has informed the Executive Officer by phone that he is unable to sign Amendment 4 to the contract because of the inclusion of Annex III as part of the amendment. Annex III replaces Article 9 of the original contract which deals with the repayment of royalty. Mr. Douglas is sending the amendment to the New York office of the Howe Sound Mining Company and we are writing you at this time because we do not know whether the unsigned amendment will be returned to the Field Team or sent to you directly.

Mr. Douglas contends that Article "c" of Annex III changes the original agreement regarding the method of computing the royalty. He states that under the terms of Article "c" of the Annex, "any cost of treatment processes, sampling or assaying, or transportation, performed or paid for by the Operator or anyone other than the buyer are not deductible in arriving at the gross proceeds royalty. Mr. Douglas contends that the original contract, in contrast, provides (in Article "c" of Annex II) that these charges would be deductible, for it states "in the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depreciation purposes in income tax determination." Mr. Douglas contends that in the one case the royalty would be based on the value of the concentrates delivered to the refinery and in the other case would be based on the price of the cobalt metal sold. And he further contends that inasmuch as the refining of cobalt is a complex and highly expensive process this change would make the DMEA royalties prohibitively high.

Mr. Douglas has been advised that if he finds the amendment unsatisfactory he should not sign it but should return it to DMEA together with a letter outlining his objections to the amendment. If the unsigned amendment is returned to us from the New York office, we will forward it immediately to you. We would appreciate being advised if the unsigned amendment is received by you directly from the New York office.

By Field Team, Region I, NW Dist.

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosure 1 (in dupl.)

cc: USBM (2)
USBM (AD)
Nickelson

P.S. Since dictating the above Mr. Douglas' letter of January 24 has been received (copies enclosed). We have written him explaining the situation as we understand it and have advised him if he does not find the terms satisfactory he should return the amendment to us with a statement of his objections.

AEW

Letter. 1.24.56
Sell copper lines -
[illegible]

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

January 24, 1956

RECEIVED
FEB - 3 1956

Mr. A. E. Weissenborn
Executive Officer, DMEA
Field Team, Reg. I, NW Dist.
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

We have received the original and six copies of Amendment No. 4 to our DMEA Contract Docket No. DMEA-3143 (Cobalt-Copper).

The amendment appears in order with the exception of article 4. This replaces Annex II in the original contract with Annex III and appears to radically alter the basis of royalty payments. As you know, we sell our copper concentrates to a buyer and the term gross proceeds allow for a net of smelter evaluation. But in the case of cobalt we are an integrated company, completing the full cycle to the production of a saleable product. The definition of gross proceeds, in this case, would appear to disallow all cost of manufacture.

Would you provice us with further clarification and an example so that we may be able to assess the actual change.

Yours very truly,

E. B. Douglas, Manager

EBD:abd

cc: HHSharp
ECRoper
VHClarke

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

So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JAN 23 1956

January 19, 1956

Mr. E. B. Douglas, Manager
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Douglas:

Enclosed are the original and six copies of Amendment No. 4 which has been prepared by our Washington office.

Kindly sign all copies, retain that copy marked for the Operator and return the rest to this office. If the amendment does not meet with your approval, please return all copies of the amendment with your comments.

Very truly yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Reg. I, NW Dist.

Enclosure

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson

COPY

400

CALERA MINING COMPANY
730 Fifth Avenue
New York 19, N. Y.

January 17th, 1956

Your No. 400)

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

Re: Exploration Project Contracts
Northfield Mines, Inc.
Docket No. DMEA 2436 - Cobalt & Copper
Contract No. Idm-E334

Calera Mining Company
Docket No. DMEA 3143 - Cobalt & Copper
Contract No. Idm-E645
Lemhi County, Idaho

Dear Mr. Mittendorf:

This morning, we received your letter of January 16th in which you inquired about the delay on our part in completing the Special Agreement on the Queen Claim.

As you point out, we have received signed copies of the Special Agreement from Northfield Mines, Inc. on which we were to affix our signatures and forward to your office. We have, unfortunately, not been able to consummate our agreement with Northfield on the Queen Claim up to date. We have been extremely disappointed that such a simple affair should require such an extended period of time to reach an agreement. I am advised by our attorney in Salmon, Idaho that he has attempted several times to expedite matters with the Northfield representative, but for one reason or another completion has been continuously delayed.

Since the "Special Agreement Concerning Land" requires evidence that we have come to agreement with Northfield Mines, Inc. on the Queen Claim, I have not signed the above and will retain them here until our negotiations have been completed.

We will, of course, continue to press this matter, and I remain

Yours sincerely,

CALERA MINING COMPANY

/s/ Vinton H. Clarke, Vice-Pres.

400

JAN 1 6 1956

3143

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Exploration Project Contracts
Northfield Mines, Inc.
Docket No. DMEA 2436 - Cobalt & Copper
Contract No. Idm-E334

Calera Mining Company
Docket No. DMEA 3143 - Cobalt & Copper
Contract No. Idm-E645
Lemhi County, Idaho

Dear Mr. Clarke:

By letter of August 29, 1955, we transmitted to Northfield Mines, Inc., the original and eight copies of a "Special Agreement Concerning Land" (the Queen claim). We requested that Northfield sign the document and forward it to Calera Mining Company for signature and subsequent return to this office, for signature in behalf of the Government.

Northfield Mines reports that the agreement was signed and forwarded to you, but we have not heard from you regarding the matter. Please advise us any reason you may have for not signing, or notify us if the agreement has become misplaced or lost in the mail.

Sincerely yours,

G. O. Mittenden

Administrator

WSMartin/foc
1-13-56
cc to: Docket
Code 400
Adm. Read. File
FT. REG. 1 - NW Dist.
Messrs. HWDavis, USBM
THKiilsgaard, USGS

Dear Mr. Clarke:

By letter of August 29, 1955, we transmitted to ~~the~~ Northfield Mines, Inc., the original and eight copies of a "Special Agreement Concerning Land" (the Queen claim). ~~with the~~ We request that ~~after~~ Northfield ~~Mines Inc~~ signed the document ~~that~~ and ~~it be~~ forwarded it to Calera Mining Company for signature and subsequent return to this office for signature in behalf of the Government.

~~We understand that~~ Northfield Mines reports that ~~has signed~~ the agreement was signed and forwarded it to you, but ~~Inasmuch as~~ we have not heard from you regarding the matter. ~~we shall appreciate your advising us of~~ Please advise us any reason ~~for delay in~~ signing ~~the agreement~~, or ~~your~~ notifying us if the agreement has become misplaced or lost in the mail.

you may have for not

Mr. Victor V. Clarke, V.P.
Calera Mining Company
730 Fifth Avenue
New York 19, N.Y.

DOCKET
SURNAME
Chapman
Hamilton
Davis
Kiilsgaard
Selfridge
Johnson

400

JAN 10 1956

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I, Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-8645

Dear Mr. Weissenborn:

Enclosed are the original and five copies of a proposed Amendment No. 4 to the above referenced contract, signed by the Administrator for the Government, together with Annex III. Two extra copies are enclosed for the use of the Field Team.

If the terms and conditions of this proposed amendment are satisfactory to you and the Operator, all six copies should be signed by the Operator and the usual distribution made.

If any part of the proposed amendment does not have your approval or that of the Operator and cannot be altered within your delegated authority, the original and all copies are to be returned to this office, together with the proposed changes for consideration.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geohan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

TLChapman:foc 1/3/56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. I - NW Dist.
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS

P. S. D. D. hole 65 reported by A. L. Service 12/20/55 as assaying 2.17% Co and 4.61% Cu over 52½ feet noted. From log submitted with Operator's November report we compute Cu at 3.76%. Please comment.

COPY

230 Park Avenue

New York 17, N. Y.

January 9th, 1956

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

Re: Exploration Project Contracts
Northfield Mines, Inc.
Docket No. DMEA 2436 Co and Cu
Contract No. Idm-E334
Calera Mining Company
Docket No. DMEA 3143 - Co and Cu
Contract No. Idm-E645
Lemhi County, Idaho

Dear Mr. Mittendorf:

This will acknowledge receipt of yours of the 6th inst. in reference to a "Special Agreement Concerning Land" (The Queen Claim).

The mentioned agreement and all copies were executed by Northfield Mines, Inc. and forwarded to Calera Mining Company under date of September 13, 1955.

Yours sincerely,

/s/ William C. Schmidt

William C. Schmidt

WCS/lm

400

JAN 6 1956

Mr. William C. Schmidt
Northfield Mines, Inc.
230 Park Avenue
New York 17, New York

Re: Exploration Project Contracts
Northfield Mines, Inc.
Docket No. DMEA 2436-Cobalt & Copper
Contract No. Idm-8334

Calera Mining Company
Docket No. DMEA 3143 - Cobalt & Copper
Contract No. Idm-8645
Lemhi County, Idaho

Dear Mr. Schmidt:

Reference is made to our letter of August 29, 1955, with which we enclosed the original and eight copies of a "Special Agreement Concerning Land" (the Queen Claim).

It was requested that you sign and forward the original and all copies to the Calera Mining Company, 731 Fifth Avenue, New York 19, New York, for signature. All copies were then to be returned to us for signature, but have not yet been received here. It will be appreciated if you will advise us at your early convenience whether this same agreement has been signed by you and forwarded to the Calera Mining Company.

Sincerely yours,

[illegible]

Administrator

TLChapman:foc
1-5-56
cc to: Docket
Code 400
Adm. Read. File
FT. REG. 1 - NW Dist.
Messrs. Davis, USBM
Killsgaard, USGS

DOCKET
Surname: Chapman
Martin

400

December 19, 1955

MEMORANDUM

To: Associate Solicitor, Div. of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of Amendment No. 4
Docket No. DMEA-3143, Cobalt-Copper
Calera Mining Co.
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm E645

Transmitted herewith is a rough draft of an Amendment No. 4 to the above-captioned contract for your use in preparing the final draft.

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

Attachment

cc: Docket
Code 400

TLChapman/ls

6 THE WALL STREET JOURNAL,
Friday, December 9, 1955

CEIVED
1 6 1955

Cobalt Reported Extracted From Cobalt-Copper Ore

NEW YORK—Cobalt is being taken successfully from cobalt-copper ore after more than a year of experimentation, it was announced by Chemical Construction Co. and Calera Mining Co.

Chemical is a subsidiary of American Cyanamid Co. and Calera is a subsidiary of Howe Sound Co.

The cobalt-copper ore is mined at Calera's Blackbird mine in Idaho and is treated at Calera's new refinery in Utah. Chemical Construction, which built the refinery, took over its management in February, 1954, after the plant ran into operational difficulties when it was finished.

These troubles, the announcement said, have been overcome, and management and the operation of the plant have been returned to Calera. The refinery uses a new chemical process of Chemco to separate non-ferrous metals from their ores.

Calera

Dm E 645

Dm Ea 3143

612

12/13/55

RECEIVED
DEC 14 1955

RECEIVED
DEC 14 1 20 PM '55

NDXXXXXX-071K

YWA069 WAF SP 13 I- GS- G

SPOKANE WN 12-14-55 1020A

GEO C SELFRIDGE CHAIRMAN OPERATING COMM DMEA

WA

REOUR LET OCTOBER 14 DOCKET DMEA 3143 CALERA MINING CO. AMENDMENT TO EXTEND CONTRACT FOR 1 YEAR REQUIRED IMMEDIATELY. TIME EXPIRED DEC. 9 RECENT INFORMATION SUGGESTS AN IMPORTANT DISCOVERY.

A E WEISSENBORN FIELD TEAM REG 1 NORTHWEST DISTRICT

14 3143 1 9

MAH 1022A

Would suit us better to leave Cabera in default, but not insist on having the default remedied, until some concrete plan is agreed on, and then put it all into one amendment.

N.B. last ¶ WSM
10/18/55

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~XXWASHINGTON 25, D.C.X~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 17 1955

October 14, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

In his letters of July 18 and September 13, 1955, (copies already forwarded to you) the Operator has requested a year's extension of his contract and a revision of the exploration project. We have delayed requesting an amendment for an extension in hopes that a revision of the exploration, if it is warranted, could be included in the same amendment. It does not seem at all likely that we will be able to make recommendations before December as to revising the exploration and we now suggest that an amendment be prepared extending the completion date an additional year.

Underground work has been very slow because of the great amount of heavy timbering and spiling that is necessary. This has slowed the work much more than had been anticipated.

There has been a change on the Operator's geological staff; this, combined with new surface work -- toward the Idaho Metallurgical ground -- has prevented the Operator from presenting any concrete proposals as to changes in the exploration.

By Field Team, Region I, NW District

Thomas E Howard
for: Wing G. Agnew, Act. Exec. Officer
U. S. Bureau of Mines

Verne C. Fryklund
Verne C. Fryklund, Jr., Acting Member
U. S. Geological Survey

cc: USBM (2)
USBM (AD)
Nickelson

C
O
P
Y

12/14

TELETYPE

YWA069 WAF SP 13 I-GS-G

SPOKANE WN 12-14-55 1020A

GEORGE C SELFRIDGE CHAIRMAN OPERATING COMM DMEA

REOUR LET OCTOBER 14 DOCKET DMEA 3143 CALERA MINING CO.

AMENDMENT TO EXTEND CONTRACT FOR 1 YEAR REUQIRED IMMEDIATELY.

TIME EXPIRED DEC. 9 RECENT INFORMATION SUGGESTS AN IMPORTANT DISCOVERY.

A. E. WEISSENBORN FIELD TEAM REGION 1 N. W. DISTRICT

14 3143 1 9

MAH 1022A

10 to 30 1 4.8 to 2 80 co

10/14/55

Mr. Martin:

This came down with the carbon copies. I phoned M & F and learned they put the original in the official docket, sent one copy to 800, and one copy to us. I told them that it should at least have come to us with the regular incoming mail, as it might have simply been filed when we got just the carbon along with our regular flimsies for filing; but that ordinarily the whole file should have come thru you en route to the Administrator. I think the new girl may have routed it and did not realize the significance of the Legal memo requiring action by the division.

ls

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

October 12, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA
By 257

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division and Contract Administration and Audit Division. See attached memorandum from the Legal Division. The official docket is also attached.

Calera Mining Company, DMEA-3143, Idm-E645, Amendment No. 2.

Attachments

P. S. Also attached is Amendment No. 3 to the above-mentioned contract which has been reviewed and approved by the three divisions noted above.

Rubin

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

OCT 11 1955

orandum

The Administrator, DMEA
Attention: Chief, Iron and Ferro-Alloys Division

From: Acting Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-3143, (cobalt-copper) Calera Mining Company, Contract No. Idm-E645

We have reviewed Amendment No. 2 to the subject contract, and find it to be in unsatisfactory legal form. The amendment changes an "agreed unit cost" under a mixed cost contract. The second paragraph of Footnote 1 incorrectly refers to "actual cost per foot" when the provision properly should be "allowable cost per foot," and also refers to a "maximum cost of $7.00 per foot of timber" when the provision properly should refer to the "allowable cost of $7.00 per foot for normal timbering and/or rock bolting." Accordingly, this provision should be changed by an amendment of the contract to read as follows:

"1/ If it is necessary to replace a rock bolted section with normal timbering, only the difference between the allowable cost per foot of rock bolting and the allowable cost of $7.00 per foot of normal timbering and/or rock bolting shall be an allowable cost."

/s/ J. L. Hofflund
J. L. Hofflund
Acting Associate Solicitor, Division of Mineral Resources

H.C.Rubin/fvh/10-11-55
Copy to:

DMEA Docket
Solicitor's Docket
W. S. Martin
H. P. Dwyer
H. C. Rubin
Chron.

10/10/55

2436 + 3143

Mr. Martin:

Is follow-up in order? We sent Special Agreement Re Land to Northfield on Aug. 29 to sign and transmit to Calera to sign and return to us. ~~North~~ Nothing has been heard from either Northfield or Calera.

We have heard thru Calera (Clarke) that Northfield has this and that it is in slow motion toward Calera

Almea 3143

COPIED FROM THE MINING RECORD - Thursday
October 6, 1955

IDAHO HAS TOP COBALT PRODUCER

Wallace, Idaho ---- Calera Mining Company's Blackbird mine back in the mountains of Lemhi county northwest of Challis is now the nation's largest producer of strategic cobalt and Idaho's biggest copper producer, according to E. B. Douglas, manager of the Howe Sound subsidiary operation, says The Miner.

About 700 tons of cobalt-copper ore are now being mined and milled daily with 350 men employed, but this could be increased if additional miners were available, he said. The mill can handle 1,000 tons per day, and the company could use about 50 more miners right now. However, there are no housing facilities available except for single men, he added. Last summer production averaged about 600 tons a day with 300 men.

Douglas said cobalt concentrates are shipped to Howe Sound's new cobalt refinery near Salt Lake City, which is now making regular cobalt shipments to government stockpiles.

RECEIVED
OCT 11 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

September 19, 1955

Mr. F. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. MEA-3143 (cobalt)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-X645

Dear Mr. Douglas:

Thank you for your letter of September 13. We will be glad to consider your proposal.

I might add that at first glance it seems that the Chelan 14 claim would have to be added to the contract ground. We may call on you for further data.

Sincerely yours,

Verne C. Bryklund, Jr.
Acting Exec. Officer, DMEA
Field Team, Region I, NW List.

cc: DMEA (2)
[illegible] (2)
Nickelson

Wash (2)

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

September 13, 1955

RECEIVED
SEP 23 1955

Mr. A. E. Weissenborn, Executive Officer
D.M.E.A. Field Team - Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. D.M.E.A. - 3143
Blackbird Mine
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Weissenborn:

Please refer to my letter of July 18, and your reply of August 3, regarding a one-year extension of the above referred to contract and the alloting of the 2,000 feet originally set up for the 7100 Level to the 7400 Level.

We are enclosing herewith, a plan showing the proposed extension of the 7400 Level drift beyond the present objectives. Of the 2,000 feet originally planned for the 7100 Level, 1,500 feet would be used as a continuation of the Northwest drift and 500 feet would be used to extend the hanging wall drift.

In our opinion, this additional work is warranted for the following reasons:

(1) Self potential surveys conducted by this company show a large anomaly on the projection of the ore as found by the D.M.E.A. work to-date.

(2) Surface trenching completed recently along the ore projection shows surface mineralization and an oxidized zone.

(3) The general trend of the mineralization has been continuous for several thousand feet and we believe it will continue for the additional distance requested.

(4) Geochemical surveys conducted largely by the U.S.G.S., show a wide halo of cobalt and copper soil along the projection of the proposed drifts.

If you require further information, or would prefer for the undersigned to discuss the project with you personally, please advise a date which is convenient to you.

Yours very truly,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas

E. B. Douglas, Manager

RECEIVED
SEP 13 1955
U.S.G.S.
SPOKANE, WASH.

Enclosure

cc: Mr. V. H. Clarke
Mr. C. J. Whitley

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP - 3 1955

August 31, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Attached are the Government, Docket, and Division copies of Amendment No. 2 to the contract with attached justification.

Distribution of this amendment is being made in the usual manner.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

Attachment

cc: Finance Office w/encl.
USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
SEP - 2 1955

August 29, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Attached are the Government, Docket, and Division copies of Amendment No. 3 to Contract No. Idm-E493 with attached justification.

Distribution of this amendment is being made in the usual manner.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Attachment
cc: Finance Office w/encl.
USBM (2)
Nickelson

AUG 2 9 1955

Mr. William [illegible] Schmidt
Northfield Mines, Inc.
230 Park Avenue
New York 17, New York

Re: Exploration Project Contracts
Northfield Mines, Inc.
Docket No. DMEA 2436 - Cobalt and Copper
Contract No. Idm-[illegible]
and
Calera Mining Company
Docket No. DMEA 3143 - Cobalt and Copper
Contract No. Idm-[illegible]
Lemhi County, Idaho

Dear Mr. Schmidt:

Enclosed are the original and eight copies of a "Special Agreement Concerning Land" (the Queen claim), included in the referenced contract of Northfield Mines, Inc.

It is requested that you sign all copies and forward them to Calera Mining Company, 731 Fifth Avenue, New York 19, New York, for signature. All copies are then to be returned to us for signature of the Administrator for the Government and distribution.

We will require a copy of the document transferring Northfield's interest in the Queen claim to Calera Mining Company.

Sincerely yours,

C. O. Mittendorf

Administrator

Cc to: Docket
Code 400
Adm. Read. File
FT. REG. 1 - NW DIST
Messrs. H. W. Davis, USBM
T. H. Kiilsgaard, USGS
Calera Mining Co., NYC

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~

1201 N. Division St.
Spokane 2, Washington
August 25, 1955

RECEIVED
AUG 29 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

This letter is in reply to your teletype of August 17.

The situation at the Blackbird mine is geologically somewhat unusual and what would appear to be excessively close drilling for exploration purposes in most mines appears to have some justification here. The ore usually occurs in relatively small pods in a zone that has been extensively faulted. Past experience has rather thoroughly demonstrated that what appeared to be a relatively barren vein actually contained enough small cobalt pods to constitute ore.

We regret that we failed to properly phrase our letter to the Operator, and we have written an amendment to the contract to authorize only 800 feet of diamond drilling at approximately 25-foot intervals.

The Operator has informed us by telephone that diamond drilling in the month of July has discovered two pods of ore, each about 130 feet long and 10 feet wide, containing about 1 percent cobalt. These two pods appear to be the most substantial discoveries of cobalt so far during the contract.

By Field Team, Region I, NW District

Wing G. Agnew

Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

James J. Quinlan

James J. Quinlan, Acting Member
U. S. Geological Survey

cc: USGS (2)

Talbert

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

AUG 2 1955

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

AIR MAIL

Re: Calera Mining Company
Contract No. Idm-E645
Docket No. DMEA-3143

Dear Mr. Turner:

Reference is made to your Interim Audit Report dated June 17, 1955, covering the referenced project contract.

Further use and study of this report has indicated the need of an explanation on one important point. A summary of the actual costs shown in the Appendix A to the report and the several schedules attached thereto aggregates $151,466.67; however the Operator's statement of actual costs (referred to in the third paragraph of the Appendix A) indicates $141,958.70 as the total.

Your report does not include a reconciliation and I have been unable to pin-point this $9,507.97 difference. Probably part of the amount is the depreciation of $8,330.00, but partially offsetting that amount is your disallowance of $841.61 for supervision plus the accounting costs of $1,996.44 indicated by the Operator. Furthermore it is not understood why your costs do not include the accounting costs.

Please furnish such reconciliation and explanation as may be indicated.

Incidentally I have noted two typographical errors in the report. Please correct the available field copies. In the penultimate paragraph on page 3 of the Report the reference to "section I" should be "section III" and on page VI of the Appendix A the total for materials and supplies should be $26,386.54 rather than $25,386.54.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/wb
August 22, 1955

Copy to: Docket
Admr. Reading File
Mr. Chambers

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

So. 157 Howard Street
Spokane 4, Washington

RECEIVED

August 22, 1955

Mr. E. B. Douglas, Manager
Blackbird Division
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Douglas:

Enclosed are the original and six copies of Amendment No. 3 to your contract. This amendment will permit 800 feet of drilling at 25-foot intervals.

Please sign all copies of the amendment, retain the copy marked for the Operator, and return the remaining copies to this office.

Sincerely yours,

Wing G. Agnew
Acting Executive Officer
DMEA Field Team, Region I
Northwest District

Enclosure

cc: DMEA (2)
USBM (2)
USBM (AD)
Nickelson

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

No. 157 Howard Street
Spokane 4, Washington

August 17, 1955

Mr. E. E. Douglas, Manager
Blackbird Division
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract Idm-2645

Dear Mr. Douglas:

In accordance with your request of July 28, 1955, enclosed is amendment No. 2 to provide for rock bolting. If this meets with your approval, please sign all copies and return all but the Operator's Copy.

Sincerely yours,

Wing G. Agnew
Acting Executive Officer, DMEA
Field Team, Region I, Northwest District

Enclosure (7)
cc: DMEA (2) w/2 cys incoming.
USBM (2)
USBM (AD)
Nickelson

RECEIVED
AUG 22 1955

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

July 28, 1955

Mr. A. E. Weissenborn, Executive Officer
D.M.E.A. Field Team, Region 1
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. D.M.E.A. - 3143
Blackbird Mine
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Weissenborn:

In our drifting and crosscutting under the above referred-to contract, there are instances where rock-bolting would be sufficient to hold ground which would otherwise have to be supported by timber. As our contract makes no provision for rock-bolting, we would like to suggest that an amendment to cover such contingencies be added, thereby affecting a saving.

Recently, we have been investigating rock-bolt practices and at the Anaconda Company, a price of $1.79 cents is paid for the hole and installing the bolt and where head boards are required, an additional 50 cents is allowed — or a total of $2.29 for labor.

Our Warehouse price of bolts, wedges and nuts per 6-foot bolt is $1.70. However, this cost does not include the expected price increase and we anticipate that future purchases will average about $1.75 per bolt. Therefore, the total cost of each bolt is expected to approximate $3.54 for a bolt with plate and $4.04 for a bolt with a head-board.

We will appreciate your consideration of the above proposals.

Very truly yours,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas, Manager

RECEIVED
JUL 3 1955
SPOKANE, WASH.

EBD:sp

cc: Mr. V. H. Clarke

Kiilsgaard
Leehan
Selfridge
Mittendorf

G. C. Selfridge, Chairman,
Operating Committee

Defense Minerals Exploration
Administration
14X4401(01) Revolving Fund,
Defense Production Act, Interior (Allocated
Working Fund to the Office of the Sec'y)

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
TELETYPE

Mr. A. E. Weissenborn
Executive Officer, Northwest District
DMEA Field Team, Region I
South 157 Howard Street
Spokane, Washington

AUG 17 1955

Re Calera contract Idm-E645, docket DMEA-3143. Our opinion wrlet August 3 to operator constitutes open ended amendment to contract. We believe broad approval of holes drilled at 25 foot centers at sole discretion operator to quote properly outline ore findings inadequate establishes undesirable precedent. Formal amendment required which must specify more clearly extent to and conditions under which closer spaced holes are authorized. Necessary to have written justification. Suggest you advise operator accordingly to avoid possible future misunderstanding.

George C. Selfridge

George C. Selfridge (JHB)
Chairman, Operating Committee

COMittendorf/fw
8/17/55
cc: Mails & Files
Admr. Reading File
Mr. Martin
Mr. Kiilsgaard-Rm. 5222
Mr. H.W.Davis, Rm.3519
Operating Committee
Mr. Mittendorf

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

August 15, 1955

RECEIVED
AUG 19 1955

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Douglas:

Enclosed are copies of an interim audit certificate and interim audit report dated June 17, 1955, by C. A. Turner, DMEA auditor, covering the above-captioned exploration project contract, for the period of December 9, 1953, to March 31, 1955, inclusive, for your files.

Sincerely yours,

Verne C. Fryklund, Jr.
for: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures

cc: DMEA(2)
USBM(2)
Turner(2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

AUG 12 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. W. S. Martin

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-3143, Calera Mining Company (cobalt)

I have refrained from approving a letter for the signature of the Operating Committee to the Executive Officer, Region I. I think the letter is correct in stating that the correspondence referred to constitutes an amendment of the subject contract, but I think that all doubt in this respect should be resolved by writing the matter up as a formal amendment and submitting it to the Operator for its signature. The Executive Officer should be so instructed.

J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

400

DOCKET
Surname:
Chairman
Martin
Kilsgaard
~~Weissenborn~~

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3143, Co-Cu
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

Reference is made to copies we received of letter of July 28, 1955, to you from Mr. E. B. Douglas, Manager, Calera Mining Company, concerning the diamond drilling on the 7400 Drift North on the referenced project, and of your reply of August 3.

Your above-mentioned letter to Mr. Douglas is, in effect, an amendment to the subject contract and as such we would appreciate your submitting the same sort of justification that would be required for any other amendment.

According to our available information, the ore bodies at the Blackbird Mine are of such shape and size that in many instances drilling on 100-feet centers could miss significant structures. Apparently, even drilling on centers as close as 25 feet would clearly be exploration and should not be called development as would be the case if the economic mineralization at the property had greater continuity.

Sincerely yours,

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

Approved:

O. M. Bishop (2/B)
Member, Bureau of Mines

/s/ W. P. Williams (2/B)
Member, Geological Survey

cc: Docket
Adm. Read. File
Oper. Comm.
FT, Reg. I-Spokane
Thor Kiilsgaard, USGS
H. W. Davis, USBM
Code 400

WSMartin/ls 8/9/55

DOCKET
Surname:
Martin
Talbert
Gibson
Mitchell

400

AUG 10 1955

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I - Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-2436, Co-Cu
Northfield Mines, Inc.
Stevenson Property
Lemhi County, Idaho
Contract No. Idm-2334

and Docket No. DMEA 3143, Co-Cu
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Weissenborn:

Enclosed is the unsigned extra copy of a proposed 3-party agreement deleting the Queen claim from Annex I of the first-captioned contract and adding the same claim to the land referred to in Article 2 of the second-captioned contract.

To expedite execution, we plan to send the above-mentioned agreement directly to New York for the two operators' signatures. It will be appreciated, therefore, if you will wire us your comments and recommendations and return the copy to us by air mail at your convenience.

This agreement will not be executed for the Government until it has been executed by the two operators. A landlord's subordination agreement was submitted for the Queen and other claims in connection with the execution of the Northfield contract, Northfield holding this and other claims under an option to purchase which requires annual payments until 1958. We assume that Calera will be acquiring less than full ownership of the claim at this time and have provided in the attached agreement that a consent to lien be furnished for the Queen claim under the Calera contract. A form for this purpose will be sent to Calera for execution. We shall also request a copy of the document transferring Northfield's interest in the Queen claim to Calera.

Sincerely yours,
/s/ W. S. Martin
ACTING Chairman, Operating Committee (SAB)

Enclosures

APPROVED:

Robert W. Geehan (SAB)
Member, Bureau of Mines

Thor H. Kiilsgaard (SAB)
Member, Geological Survey

cc: Docket DMEA 2436
Docket DMEA 3143
Code 400
Operating Committee
Adm. Reading File
Thor Kiilsgaard, USGS
M. W. Davis, USBM
Ft. Reg. I-Spokane

R.C.S.

WSMartin/ls
8/9/55

Martin

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

Copy retained 40

dmea docket 3143

1955.

Memorandum

To: The Administrator, DMEA
Attention: Mr. W. S. Martin

From: Acting Assistant Solicitor, Defense Minerals

Subject: Docket No. DMEA-2436, Northfield Mines, Inc.
Contract Idm-2334 (cobalt-copper)
Docket No. DMEA-3143, Calera Mining Company
Contract Idm-2645 (cobalt)

Mr. Martin informally requested that we review the subject dockets to determine whether the Queen claim could be deleted from the Northfield contract and made a part of the Calera contract without subjecting either Calera or Northfield to any liability for royalty under the Northfield contract, but requiring payment of royalty, on production from said claim, under the Calera contract. It was stated that no exploration was made on or has benefited the Queen claim, and it is to the Government's advantage that the transfer of the claim be made.

We have determined that the proposed transfer is appropriate and have worked out the attached three-party agreement to accomplish the desired result.

This agreement should not be executed for the Government until it has been executed by the two operators.

A Landlord's Subordination Agreement was submitted for the Queen and other claims in connection with the execution of the Northfield contract, Northfield holding this and other claims under an option to purchase which requires annual payments until 1958. We assume that Calera will be acquiring less than full ownership of the claim at this time, and have provided in the attached agreement that a Consent to Lien be furnished for the Queen claim under the Calera contract. A form for this purpose is attached.

A copy of the document transferring Northfield's interest in the Queen claim to Calera is required.

HCRubin/emd
Copy to: DMEA Docket (2)
Solicitor's Docket
W. S. Martin (2)
J. L. Hofflund
Attachments
H. C. Rubin chron.

J. L. Hofflund

J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

RECEIVED
AUG - 8 1955

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

August 3, 1955

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143
Blackbird Mine
Lemhi County, Idaho
Contract Ida-8645

Dear Mr. Douglas:

Thank you for your letter of July 18. We will be glad to recommend a one-year extension to the contract. It might simplify things if we considered your request for further work on the 7400 level at the same time.

We regret that the surface, and underground, work in the 7100 level area has not been particularly successful, and it is quite possible that an additional 2000 feet of drifting and crosscutting in the 7400 level area would be more desirable.

Before we make a recommendation we feel that there should be a careful plan as to how and where this work is to be done. At the moment, pending your comments, we would hesitate to simply extend the present crosscut beyond the specified length unless there were a definite target. On the other hand, we can see how 2000 feet of work could be used in the 7400 level area.

We will be glad to consider any detailed program you submit to us.

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2) w/2 cys incoming
USBM (2)
Nickelson

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

July 18, 1955

REFER TO	ACTION	INFO	DATE
Wm			
Clk			
Rick			
USBM			
DMEA			

Mr. A. E. Weissenborn, Executive Officer
D.M.E.A. Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. D.M.E.A. -3143
Blackbird Mine
Lemhi County, Idaho
Contract Idm-E645

RECEIVED
AUG - 8 1955

Dear Mr. Weissenborn:

Under the terms of the above referred to contract, work is to be completed by December of this year. Owing to the exceptionally heavy ground encountered which has required spiling and in many instances, breast-boarding, we are much behind on our schedule and with this letter, wish to make application for extension of time of at least one year to complete the work.

Under the terms of our contract, two thousand feet of crosscutting and drifting were to have been driven toward the hanging wall of the Chicago Ore Body from on the 7100 Level horizon, contingent upon the results of the surface trenching and diamond drilling in that area. Our surface trenching and subsequent diamond drilling showed only sparse mineralization and in our opinion, does not warrant the expenditure for crosscutting and drifting at the 7100 Level horizon. On the other hand, we feel that the 2,000 feet allotted to this portion of the contract can be used to further explore toward the north as an extension of that portion of our project.

The time extension and hanging wall proposals have been discussed with the field representatives of your organization and it is after my discussions with them, that I am initiating this letter at an early date, so as not to have an hiatus in our exploration program.

If there are special forms which should be filled out, or you require further information, we will be pleased to comply.

Yours very truly,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas, Manager

RECEIVED
JUL 22 1955
U.S.B.M.
SPOKANE, WASH.

EBD:sp

cc: Mr. V. H. Clarke
Mr. R. E. Cribbs

Dyer

xxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG - 8 1955

August 3, 1955

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-8645

Dear Mr. Douglas:

Thank you for your letter of July 28, 1955. The word "approximately" is used in the contract in referring to the spacing of diamond drill holes. There is no objection if you feel that closer spacing is desirable in certain areas.

You should attempt to complete the exploration with the allotted 10,500 feet of drilling, and we suggest that in some areas a drilling interval of 150 to 200 feet may well be adequate.

We appreciate your bringing the problem to our attention.

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2) w/2 cys incoming
USBM (2)
USBM (AD)
Nickelson

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

RECEIVED
AUG - 8 1955

July 28, 1955

Mr. A. E. Weissenborn, Executive Officer
D.M.E.A. Field Team, Region 1
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. D.M.E.A.-3143
Blackbird Mine
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Weissenborn:

This letter is in further regard to our telephone conversation earlier today, concerning the underground diamond drilling under terms of the above referred to contract.

During the month now ending, we have two diamond drills working in the 7400 Drift North. This section of the drifting has been through a zone of intense faulting. Because of this and the very irregular occurrences of the ore, we have been forced to drill in some instances on 25-foot centers rather than on the 100-foot interval, as seems to be implied in the contract. In our opinion, to properly outline any continuity of the ore, the 25-foot interval is necessary.

In certain other areas, the 100-foot interval will be sufficient.

We understand, of course, that the present contract calls for 10,500 feet of diamond drilling, and to augment this amount would call for an amendment. This is not our intention at this time -- but we wish to invoice all of our drilling under the contract as deemed necessary to properly outline the ore findings up to the total agreed upon.

We will appreciate your consideration of the above.

RECEIVED
AUG 9 1955

Yours very truly,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas

E. B. Douglas, Manager

EBD:sp

cc: Mr. V. H. Clarke

Talbert

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

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

AIR MAIL

JUL 12 1955

Re: Calcore Mining Company
Contract Idm-8645
Docket No. DMEA-3143

Dear Mr. Turner:

Reference is made to your Interim Audit Report dated June 17, 1955, covering the referenced project contract.

On pages XIV and XV of Appendix A to this Audit Report, the drifting and timbering labor costs are indicated as averaging $25.18 and $13.36 per foot, respectively. Since these amounts appear to be relatively high the desirability of a further analysis of these costs is indicated.

It is noted that on page II of the Appendix you state, "An audit and analysis was made of payroll charges against the exploration project for the months of May 1954, October 1954, and February 1955", and on page III you list the types of labor and both the shift and bonus rates of pay applicable to this contract.

Your work sheets covering these months' detailed analysis probably contain sufficient information to show the types of labor and the number of hours or shifts employed in drifting and timbering during these months. If this is so, it is requested that you have photostats of the applicable work sheets made and forwarded to this office. Also, other information which may be of assistance in determining the reasons for these high labor costs per foot will be appreciated.

It is noted that your schedules of costs on pages XIV and XV of the Appendix A do not include any costs, either parts or labor, specifically indicated as repairs to equipment. Inasmuch as repairs undoubtedly were required, an explanation is requested.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/wb
July 12, 1955

Copy to: Docket
Admr. Reading File
Mr. Selfridge
Mr. Martin
Mr. Chambers

R.C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 15 1955

July 8, 1955

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt)
Calera Mining Company
Blackbird mine
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Selfridge:

An interim audit made by Mr. Charles A. Turner of the work done under contract Idm-E645 at the Calera Mining Company, Cobalt, Idaho, has been approved by the Contract Administration and Audit Division. Included in this audit is an appendix which analyzes the operator's actual cost of the units of work completed. This analysis was made because the Government has the option of converting the contract to a unit-cost contract if it so desires.

Mr. Turner's analysis shows that the cost of diamond drilling to date has been a little under the unit cost allowed under the contract for drilling--a total of $5.88 a foot against $6.972 actually paid. It was not possible to make a breakdown between underground and surface diamond drilling. All of the diamond drilling that remains to be done (approximately 10,300 feet) is underground diamond drilling. The contract costs for the diamond drilling, not counting the cost of reaming and cementing, casing, supervision, etc., amount to $3.50 a foot, whereas the amount allowed by the Government for drilling alone would be $3.38 per foot. The actual cost of the remaining drilling will therefore be considerably in excess of the allowable unit cost under the contract.

The principal other work remaining under the contract is drifting and crosscutting, of which on April 1 approximately 4700 feet remained to be done. Mr. Turner's analyses show that for the 1238 feet of drifting completed under the contract the actual cost of drifting was $46.67 per foot, not counting the cost of timbering. Timbering costs for the

994.3 feet requiring timbering amounted to $26.91 per foot. The total cost of drifting the 1238 feet, including timbering costs, amounted to $68.90 per foot. This is appreciably in excess of the allowed costs of $35.535 for drifting and $26.91 per foot of timbering.

Assaying costs charged were considerably under the amount allowed for assaying--$0.75 compared to $3.00. This probably reflects the fact that the proration of labor, supervision and operating supplies and materials was on an arbitrary basis, and it is believed that the true costs are much greater than the company has charged against the contract. Although assaying charges amount to a substantial sum, this is a relatively small part of the total cost of the contract.

On review of the figures, it is the opinion of the Field Team that it is to the Government's advantage to continue with the unit cost contract rather than exercising the option of converting to an actual cost contract.

Of the 1238 feet of drift and crosscut that has been driven, 994.3 feet required timbering. Of this, 313.5 feet required heavy timbering and 297 feet required spiling. Remaining in the contract as of April 1 are 4762 feet of drifting and crosscutting. Provision is made for 4,005 feet of timbering, of which 436 feet is for heavy timbering and 203 feet for spiling. It is impossible to predict the type of ground that may be encountered as the drifting and crosscutting advance, but it is possible that the contract may have to be amended to provide for a greater footage for heavy timbering and spiling, unless the company is to bear this expense itself.

By Field Team, Reg. I, NW District

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USBM(2)
USBM(AD)
Turner
Nickelson

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

JUN 27 1955

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Calera Mining Company
Contract Idm-F645
Docket No. DMEA-3143

Dear Mr. Turner:

Receipt is acknowledged of your Interim Audit Certificate and Report covering the above-cited Exploration Project Contract.

The Report is accepted and may be distributed in the usual manner.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

WBorovies/wb
June 27, 1955

Copy to: Docket
Admr. Reading File
Mr. Chambers

R.L.B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
1201 N. Division St.
Spokane 2, Washington
June 10, 1955

RECEIVED
JUN 13 1955

Mr. E. B. Douglas
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA 3143 (cobalt-copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-8645

Dear Mr. Douglas:

This letter is in reference to your verbal request to Mr. A. L. Service, Bureau of Mines Engineer, to change the starting point of the 7400 crosscut to a point about 100 feet northwesterly of its original position. It is understood that the length and bearing of the crosscut will remain the same.

This is your authority to make the change.

By Field Team, Region I, NW District

Thomas E. Howard, Acting Exec. Officer
U. S. Bureau of Mines

Verne C. Fryklund, Jr., Acting Member
U. S. Geological Survey

cc: DMEA (2)
USGS (2)
USBM (AD)

DMEA

DOMESTIC SERVICE	
Check the class of service desired; otherwise this message will be sent as a full rate telegram	
FULL RATE TELEGRAM	
DAY LETTER	
NIGHT LETTER	

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WESTERN UNION

W. P. MARSHALL, PRESIDENT

1206 10-51

INTERNATIONAL SERVICE	
Check the class of service desired; otherwise the message will be sent at the full rate	
FULL RATE	
LETTER TELEGRAM	
SHIP RADIOGRAM	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED

Send the following message, subject to the terms on back hereof, which are hereby agreed to

Received: 2:00 p.m.

PR. BU185 PD - COBALT IDA 28 203PMM 1955 APR 28 PM 1 24

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
MAY 5 - 1955

A. E. WEISSENBORN EXECUTIVE OFFICER DMEA
SOUTH 157 HOWARD ST SPOKANE WASH

FELT SUGGEST MAY 9 OR 10 AS PREFERABLE FOR TURNERS VISIT.

CALERA MINING CO E. B. DOUGLAS

COPY

Re: Docket DMEA 3143
Calera Mining Co.
Blackbird Mine
Lemhi County, Idaho
E645

COPY

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it repeated, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated message rate is charged in addition. Unless otherwise indicated on its face, this is an unrepeated message and paid for as such, in consideration whereof it is agreed between the sender of the message and the Telegraph Company as follows:

1. The Telegraph Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the unrepeated-message rate beyond the sum of five hundred dollars; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five thousand dollars, unless specially valued; nor in any case for delays arising from unavoidable interruption in the working of its lines.

2. In any event the Telegraph Company shall not be liable for damages for mistakes or delays in the transmission or delivery, or for the non-delivery, of any message, whether caused by the negligence of its servants or otherwise, beyond the actual loss, not exceeding in any event the sum of five thousand dollars, at which amount the sender of each message represents that the message is valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and unless the repeated-message rate is paid or agreed to be paid and an additional charge equal to one-tenth of one per cent of the amount by which such valuation shall exceed five thousand dollars.

3. The Telegraph Company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its destination.

4. Except as otherwise indicated in connection with the listing of individual places in the filed tariffs of the Telegraph Company, the amount paid for the transmission of a domestic telegram or an incoming cable or radio message covers its delivery within the following limits: In cities or towns of 5,000 or more inhabitants where the Telegraph Company has an office which, as shown by the filed tariffs of the Telegraph Company, is not operated through the agency of a railroad company, within two miles of any open main or branch office of the Telegraph Company; in cities or towns of 5,000 or more inhabitants where, as shown by the filed tariffs of the Telegraph Company, the telegraph service is performed through the agency of a railroad company, within one mile of the telegraph office; in cities or towns of less than 5,000 inhabitants in which an office of the Telegraph Company is located, within one-half mile of the telegraph office. Beyond the limits above specified the Telegraph Company does not undertake to make delivery but will endeavor to arrange for delivery as the agent of the sender, with the understanding that the sender authorizes the collection of any additional charge from the addressee and agrees to pay such additional charge if it is not collected from the addressee. There will be no additional charge for deliveries made by telephone within the corporate limits of any city or town in which an office of the Telegraph Company is located.

5. No responsibility attaches to the Telegraph Company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the Telegraph Company's messengers, he acts for that purpose as the agent of the sender.

6. The Telegraph Company will not be liable for damages or statutory penalties when the claim is not presented in writing to the Telegraph Company, (a) within ninety days after the message is filed with the Telegraph Company for transmission in the case of a message between points within the United States (except in the case of an intrastate message in Texas) or between a point in the United States on the one hand and a point in Alaska, Canada, Mexico, or St. Pierre-Miquelon Islands on the other hand, or between a point in the United States and a ship at sea or in the air, (b) within 95 days after the cause of action, if any, shall have accrued in the case of an intrastate message in Texas, and (c) within 180 days after the message is filed with the Telegraph Company for transmission in the case of a message between a point in the United States and a foreign or overseas point other than the points specified above in this paragraph; provided, however, that this condition shall not apply to claims for damages or overcharges within the purview of Section 415 of he Communications Act of 1934, as amended.

7. It is agreed that in any action by the Telegraph Company to recover the tolls for any message or messages the prompt and correct transmission and delivery thereof shall be presumed, subject to rebuttal by competent evidence.

8. Special terms governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such respective classes in addition to all the foregoing terms.

9. No employee of the Telegraph Company is authorized to vary the foregoing.

5-52

CLASSES OF SERVICE

DOMESTIC SERVICES

FULL RATE TELEGRAM

A full rate expedited service.

DAY LETTER (DL)

A deferred service at lower than the full rate

NIGHT LETTER (NL)

Accepted up to 2 A. M. for delivery not earlier than the following morning at rates substantially lower than the full rate telegram or day letter rates.

INTERNATIONAL SERVICES

FULL RATE (FR)

The standard fast service at full rates. May be written in any language that can be expressed in Roman letters, or in secret language. A minimum charge for 5 words applies.

LETTER TELEGRAM (LT)

Overnight plain language messages. Minimum charge for 22 words applies

SHIP RADIOGRAM

A service to and from ships at sea. Plain or secret language may be used. Minimum charge for 5 words applies.

X

[illegible], 1/55

[illegible]

[illegible]

[illegible]

[illegible]

Distribution:
Docket
[illegible]
[illegible]
[illegible] (2)
[illegible] (2)
[illegible]rner (2)

Re: Docket MSHA 3143
Calera Mining Co.
Bluebird Mine
Lemhi County, Idaho
MSHA

xxxxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

April 25, 1955

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt-copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Ed:

I have your letter of April 15 forwarding the costs on the Blackbird project. Mr. Charles Turner, our auditor, tells me that he will plan to be in Cobalt on the 2d or 3d of May; however, since it would be very desirable to have your accountant there at the same time, this date can be changed if Mr. Duncan will not be able to be there at that time.

Because of the slow mail service between here and Cobalt perhaps it would be well if you would wire me whether or not this date is satisfactory.

Sincerely,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

cc: DMEA (2)
USBM (2)
J. L. Chambers w/cy incoming
C. A. Turner (3)

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

April 15, 1955

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 25 1955

Mr. A. E. Weissenborn, Exec. Officer
(U. S. Geological Survey)
United States Department of the Interior
So. 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMSA-3143 (cobalt-copper)
Blackbird Mine
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Weissenborn:

This is in reply to your letter of April 8 in which you request a summary of the cost of work performed under the above-mentioned contract. In accordance with your request, we are enclosing two copies of our cost summary of work completed to March 31, 1955. This summary covers our costs, with the following reservations:

1. Assaying is charged to the contract at the average cost per determination for all determinations made at the assay office. This is much less than actual cost of making cobalt determinations;

2. No charge has been made to the contract for the use of miners' lamps;

3. On March 31, 1955, underground diamond drilling was just started. The established rate is $3.3832 per foot. The lowest contract rate available is $4.00 per foot. On 10,500 feet to be drilled, this will accrue an extra cost to the Company of at least $6,500.00

Mr. Haddon, who has been our Chief Accountant, has resigned and is being replaced by Mr. George Deacon. Mr. Deacon is being transferred from our Brittania property and is arranging the necessary immigration papers. As he may be called away from the property because of this situation, I will appreciate your advising me, in advance, of Mr. Turner's visit so that if at all possible, arrangements can be made to have Mr. Deacon here at that time.

Yours very truly,

CALERA MINING COMPANY
Blackbird Division

E. B. Douglas, Manager

EBD:pc

CALERA MINING COMPANY - BLACKBIRD DIVISION
D.M.E.A. PROJECT DOCKET NO. DMEA - 3143
SINCE INCEPTION TO MARCH 31, 1955

RECEIVED
APR 25 1957

	Expense
7400 Drift	
Rock Breaking	
Miners & Muckers	$ 11,949.39
Bonus	5,219.64
Explosives	2,678.77
Nipping and Hoisting	2,339.79
Drill Expense	761.36
Steel and Bits	1,147.37
Air	1,162.67
Air and Water Lines	4,541.98
Supervision	4,676.60
Ventilation	1,268.03
Mucking Supplies	1,068.24
Other Labor & Supplies	1,831.01
	$ 38,044.85
Waste Disposal	$ 5,044.82
Timbering	
Labor	$ 7,227.06
Supplies	8,053.90
Framing	5,217.60
	$ 20,498.56
TOTAL DRIFT	$ 63,588.23
Advanced Feet - DMEA - 1238 feet	
Trenching - 864 Hours	
Labor	$ 4,088.49
Machines	3,830.56
	$ 7,919.05
Diamond Drilling Feet - 9344	
Stage 1	$ 53,266.11
Stage 2	136.40
Sampling & Assaying (1)	1,582.39
Sampling & Assaying (2)	244.28
	$ 55,229.18
Geology	$ 5,659.03
Engineering	2,182.58
Accounting	1,996.44
	$ 9,838.05
Other Costs	
Old Age Pension	$ 877.14
Unemployment Insurance	981.17
Workmen's Compensation	2,425.63
Holiday - Statutory	479.14
Vacation Pay	621.11
	$ 5,384.19
TOTAL COST	$141,958.70

C
O
P
Y

[illegible]
So. 157 Howard Street
Spokane 4, Washington

April 3, 1955

Mr. L. S. Douglas
Calera Mining Company
Cobalt, Idaho

Re: Docket No. [illegible]A-1143 (cobalt-copper)
Black Bird Mine
Lemhi County, Idaho
Contract Ida-565

Dear Mr. Douglas:

According to the provisions of the contract for the exploration of the Black Bird mine, the Government will contribute to the cost of the work on an agreed unit-cost basis in lieu of actual cost for a period of one year from the date of this contract. After this period the Government may, at its option, continue with the unit cost or convert the contract to an actual-cost basis for the work remaining to be done.

Since the effective date of the contract is December 7, 1953, the date on which this conversion could have been made was December 7, 1954; however because drifting had not progressed as rapidly as had been expected, the Field Team deemed it advisable to delay this review of the costs until more drifting had been done, in order that a fairer appraisal of the drifting costs might be made. We now feel that enough drifting has been done in order to give a very good idea of the drifting costs.

Will you, therefore, at your earliest convenience prepare a statement of the actual costs of all of the units of work done under the contract through March 31, 1955. After this statement has been received and digested here, then we would like to arrange to have our auditor, Charles A. Turner, visit your property and make an audit of the account.

[illegible]y Field Team, Region 1, [illegible] District

[illegible] Weissenborn, Exec. Officer
[illegible] Geological Survey)

[illegible] G. Agnew, Manager
[illegible] Bureau of Mines)

[illegible]

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

MAR 2 4 1955

Mr. Charles A. Turner
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Idm-E645, Docket DMEA-3143
Calera Mining Company

Dear Mr. Turner:

Reference is made to my letter of November 22, 1954, in regard to an audit of the above-cited project.

It appears to this office that the Calera Mining Company contract might well be audited at this time. Will you please discuss the matter with Mr. Weissenborn, and unless you or he have reason to put some other project ahead of this one for audit, I would like to see it appear on your April program.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
March 24, 1955

Copy to: Docket
Admr. Reading File
Mr. Chambers

R.C.B.

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

March 22, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division

From: Hazel Berry, Operating Committee
By LSY

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division, Contract Administration and Audit Division, and by the Legal Division. The official docket is also attached.

CALERA MINING CO., DMEA-3143, Idm-E645, Amendment No. 1

Attachment 1

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

1201 N. Division St.
Spokane 2, Washington
March 22, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA 3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

This is in answer to your letter of February 23 concerning the referenced docket.

In his January 17, 1955 inspection report A. L. Service, Bureau of Mines inspecting engineer, erroneously reported the drift cross section as about 9'x11' in the clear when he meant 9'x11' in rock section. The drift section inside timbers is actually 6'x8'.

We understand that the work is currently on a 3-shift basis.

By Field Team, Region I, NW District

A. E. Weissenborn

A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: USGS (2)

400

DOCKET
Surname

Rutledge
martin
Selfridge
Johnson
Weissenborn

FEB 28 1955

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I-Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143, Cobalt-Copper
Salem Mining Company
Blackbird mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Weissenborn:

Reference is made to the subject docket and the operator's difficulties in spiling through heavy ground as reported in the narrative attached to the December 1954 report.

It seems probable that the operator would encounter less difficulty in driving the drift if the work were carried out on a round-the-clock schedule seven days a week. In addition, a drift 9' X 11' in the clear, and of unspecified size outside the timber, may be more difficult to hold than an exploratory drift of more reasonable size in this type of ground. Your comments would be appreciated.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

Approved:

J. H. Hedges (JB)

Member, Bureau of Mines

Thor H. Kiilsgaard (JB)

Member, Geological Survey

cc: Docket
FT, Reg. I-Spokane
Code 400
Adm. Read. File
Oper. Committee
H. W. Davis, USBM
T. Kiilsgaard, USGS
~~XXXXXXXXXXXXXXXX~~

FARutledge/ls
2/24/55

R.C.S.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

February 21, 1955

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Selfridge:

Attached are the original and two copies of Amendment No. 1 to the cited contract with attached justification.

Distribution of this amendment is being made in the usual manner.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Attachment

cc: Finance Office w/encl.
USBM (2)
Nickelson

MAR 15 1955

GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

February 11, 1955

Mr. E. B. Douglas, Manager
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket DMEA-3143 (cobalt-copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2645

Dear Mr. Douglas:

Reference is made to your letter of January 13, 1955, requesting a change in the above-cited contract to permit underground drilling off the 7100 level.

Enclosed are the original and six copies of Amendment No. 1. If satisfactory to you, please sign all copies, keep the one marked "Operator's Copy", and return the rest to this office.

If unsatisfactory for any reason, please return all copies to this office with your comments.

Yours sincerely,

John S. Vhay
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures

cc: DMEA (2) w/cy incoming
USBM (2)
Nickelson

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

January 13, 1955

Mr. A. E. Weissenborn, Executive Officer
Defense Minerals Exploration Administration
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. D.M.E.A. - 3143 (Cobalt) (Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

DEPARTMENT OF THE INTERIOR
FEB 14 1955

Dear Mr. Weissenborn:

This is in reply to your letter of December 31, 1954, regarding our request to Mr. Verdo Johnson of the Bureau of Mines, that we be permitted to do some underground diamond drilling from our 7100 Level before reaching a decision as to starting the crosscut to the northeast as called for in the contract.

Originally, we anticipated drilling the subject ground from the surface, but surface trenching has indicated that the possible ore zone can be reached from present openings on the 7100 Level with less expense. All of the monies allotted to Stage I for surface diamond drilling and assaying, were not used. According to our figures, we have $2,247.06, yet to be expended for surface diamond drilling and $2,718.00, for assaying. We propose that this particular underground diamond drilling and necessary assaying be done in lieu of the surface drilling remaining to be done. We feel certain that the remaining work can be completed within the amount of monies remaining for this category of work.

We are enclosing five copies of prints, showing the proposed drilling program.

Your favorable consideration will be appreciated.

Yours Very Truly,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas, Manager

EBD:sp

cc: Mr. V. H. Clarke
Mr. Wing G. Agnew

RECEIVED
JAN 17 1955
U. S. G. S.
SPOKANE

Enclosures

Defense Minerals Administration
RECEIVED
JAN 6 1955

xxxxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

December 31, 1954

Mr. E. B. Douglas
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt-copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-1045

Dear Mr. Douglas:

It has come to our attention, through an inspection report by Verdo Johnson of the Bureau of Mines, that the Calera Mining Company, under the cited contract, wishes to do some underground drilling on the 7100 level before starting the crosscut to the northeast called for in the contract. As this represents a change in the exploration described in the contract it will necessitate an amendment to the contract before the drilling is started. Therefore, if you do desire to do this, please send this office a description of the work which you want to do together with a justification for the change. This request should be submitted in five copies. We will then write up an appraisal of your request and send it to Washington for their approval and for the amendment which will have to be written in Washington.

By Field Team, Region II

A. E. Weissenborn, Executive Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

cc: DMEA (2)
UERM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
No. 157 Howard Street
Spokane 4, Washington

July 13, 1954

Mr. [illegible] B. Douglas
Calera Mining Company
Cobalt, Idaho

Re: Project No. DMEA 5143 (cobalt-copper)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-2049

Dear Mr. Douglas:

After talking the problem of the drift work on the cited contract over with Mr. Vinton Clarke, we agreed that the proposed change of direction of the drift, as shown on the map which he left with us, is desirable. This letter, therefore, authorizes you to make the change. According to the terms of the contract, any work done south of DMEA Plane 1, as shown on the map, must be done on company account.

Yours sincerely,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: DMEA (2)
USBM (2)
Mickelson

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

1201 N. Division St.
Spokane 2, Washington
February 10, 1954

Mr. E. B. Douglas, Manager
Black Bird Division
Calera Mining Company
Cobalt, Idaho

Re: Docket No. DMEA 3143 (cobalt-copper)
Contract Idm-E645
Blackbird Mine
Lemhi County, Idaho

Dear Mr. Douglas:

This is in reply to your letter of February 5, 1954.

The subject was discussed very hurriedly with Mr. Johnson of the Bureau of Mines before his departure on a field trip and, knowing that you would like an immediate answer, this letter is your authority to drive the DMEA heading roughly parallel to the fault zone and to diamond drill at 100-foot intervals to orient yourself as the heading is advanced.

Upon further study of the contract we may find it necessary to amend the contract to permit this work. We will advise you on this after Mr. Johnson's return.

By Field Team, Region II

A. E. Weissenborn, Exec. Officer
(U. S. Geological Survey)

Wing G. Agnew, Acting Member
(U. S. Bureau of Mines)

cc: DMEA, Wash. (2)
USGS (2)

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

February 5, 1954

Mr. A. E. Weissenhorn
Executive Officer, Region II
D.M.E.A. Field Team
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenhorn:

Enclosed herewith is a sketch showing the position of our 7400 Level, D.M.E.A. heading as of today. You will note the heading is not following the precise bearing that is mentioned in our contract. The reason we have not turned onto the suggested line is because of the very badly crushed zone diamond drilling, etc. has indicated lies adjacent to a north trending fault. The ore at our 7400 Level horizon as delimited to date appears possibly to have some relation to this major north trending fault.

For your approval, we would like to suggest that we be permitted to continue to drive the heading roughly parallel to the fault zone and to diamond drill at 100 foot intervals to orient ourselves as the heading is advanced.

Mr. Johnson of the Spokane office, U. S. Bureau of Mines was here this week and, if you care to contact him, I'm sure he can give you a more detailed explanation of our particular problem.

Yours very truly,

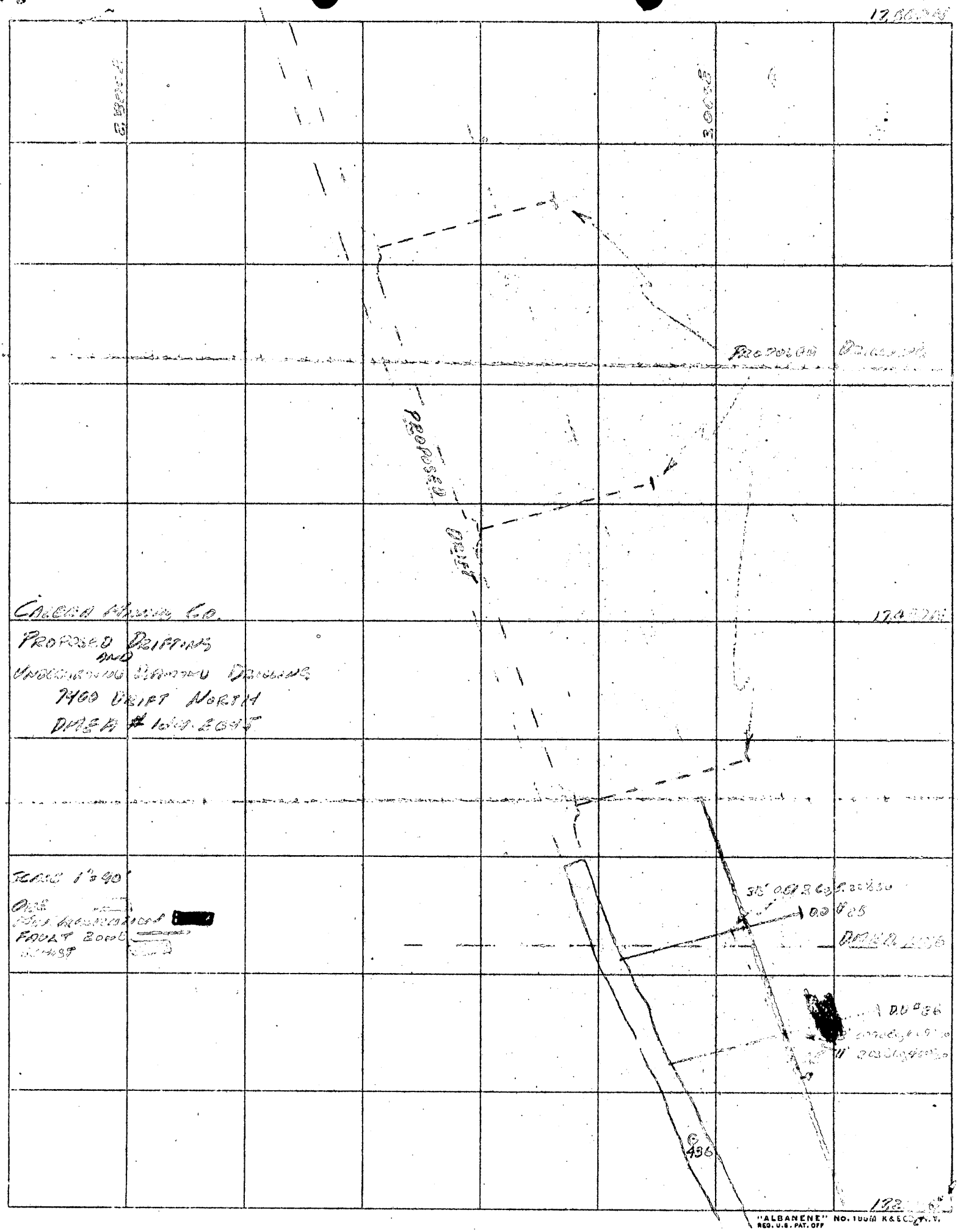
CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas

E. B. Douglas, Manager

EBD:mag

Encl.



"ALBANENE" NO. 1000 K&E CO. N.Y.
REG. U.S. PAT. OFF

Copied from E&MJ Metal & Mineral Markets Jan. 28, 1954

The new cobalt refining plant at Garfield, Utah, owned by Calera Mining Co., a subsidiary of Howe Sound Co., will be managed and operated by Chemical Construction Co., a subsidiary of American Cyanamid Co., according to an announcement by the two companies. The terms of the agreement between the two companies provide that the arrangement last two years and that it begin Feb. 15, 1954.

The plant has been in production on a partial scale since late 1952. The object of this contract is to enable Chemico, which designed and constructed the plant, to place the operation on a successful commercial basis.

The cobalt concentrate is being supplied by Calera from its mill at the Blackbird Mine, in Idaho, and will be processed by Chemico for Calera on a toll basis.

The plant is the first to embody Chemico's revolutionary process for recovering cobalt metal from ore concentrates, using chemical techniques designed to be less costly than conventional smelting and refining methods.

How Sound is preparing and shortly will mail to its stockholders a letter outlining the agreement.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 28 1954

January 25, 1954

Mr. E. B. Douglas
Calera Mining Company
Blackbird Division
Cobalt, Idaho

Re: Docket No. DMEA-3143 (cobalt-copper)
Calera Mining Company
Lemhi County, Idaho
Contract Idm-E645

Dear Mr. Douglas:

In reply to your letter of January 20, 1954, requesting an engineer to establish a starting point in the 7300 Drift North on February 1, 1954, we will not be able to send an engineer to Cobalt on this date. However, Mr. Johnson, U. S. Bureau of Mines, will make his routine inspection of this area during the second week in February and will visit you at that time.

It is suggested that your engineers establish the coordinate point at 17290N, 3025E and use this as a starting point. Or, if you prefer, establish a point at the face of the drift as of February 1, 1954, if it will facilitate your accounting system, provided it is at or north of the coordinate point 17290N, 3025E.

Either point will be satisfactory as a starting point to the Government because the contract is on a unit-cost basis.

It is hoped the above suggestions will clarify your problem. It will not be necessary to delay the progress of the drift.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: DMEA (2)
USBM (2)
Nickelson

400

Chapman
Martin
Chamberlin
Selfridge
[illegible]

12-24

DEC 28 1953

Mr. A. L. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-3645

Dear Mr. Weissenborn:

We are enclosing three copies of the above-referenced exploration contract, two copies of which have been signed by the Administrator for the Government and by Mr. Vinton H. Clarke, Vice President of the Calera Mining Company, for the Operator.

A copy of each of Mr. Clarke's letters of December 15 and 17, 1953, to this office, is enclosed for your information.

Sincerely yours,

George C. Selfridge (JHB)

Chairman, Operating Committee

Enclosures

Concur in:

J. H. Hedges (JHB)
Member, Bureau of Mines

T. P. Thayer (JHB)
Member, Geological Survey

copy to: Docket
Code 400
FT, Reg. 2
Oper. Comm.
Adm. Read. File
H. W. Davis, USBM
Phillip Guild, USGS

TLChapman/ls
12/18/53

R.C.G. 12-28-53

FILE COPY
SURNAME:

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

DEC 28 1953

Martin
AEKane
Bolin
Hofflund
Chamberlin
Kaye
Hedges
Selfridge

Mr. Vinton H. Clarke, Vice-President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA-3143 (Cobalt-Copper)
Blackbird Mine
Lemhi County, Idaho
Contract No. Idm-E645

Dear Mr. Clarke:

Enclosed for your convenience is an extra copy of the subject contract No. Idm-E645, embodying the following changes made after our discussions of your letters of December 15 and 17, 1953:

(1) The time within which the Operator shall commence work has been changed from 15 days to 70 days from December 9, 1953, the date of the contract.

(2) The period of years fixed for payment of royalty and during which the Operator is obliged to maintain his interest in the land referred to in the contract has been reduced from 20 years to 12 years.

(3) The underground work on the 7400 level in Stage II is now authorized to be done either concurrently with the work of Stage I or prior thereto.

As was pointed out in your conversations here, the royalty computations of your memorandum of December 17 should be based on net amounts realized from the sale of the cobalt metal, i.e., without deducting the refining cost. Such a change in your method of computation only affects to a small extent the conclusion reached in your memorandum that repayment of the Government's contribution could be expected within the term of the contract provisions. The effect is solely to increase by a slight percentage the amount repayable per ton mined, and consequently to advance the dates by which payment could be expected, and hence to reinforce your above conclusion.

Sincerely yours,

FRANK E. JOHNSON
(by ESF)
ACTING Administrator

Enclosure

A. E. Kane
J. L. Hofflund
Chron.
Pending
Op. Comm.
Field Team Reg. II (2)
W. S. Martin
Draft by WSMartin
AEKane/ema 12-18-53
cc: Mails & Files
Adm. R. File
C. O. Mittendorf

R.C.G.
12-24

C A L E R A M I N I N G C O M P A N Y
730 Fifth Avenue
New York 19, N. Y.

Department of the Interior
Defense Minerals Administration
RECEIVED
DEC 17 1953

Washington, D. C.
December 17, 1953

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird mine
Lemhi County, Idaho

Dear Mr. Mittendorf:

Referring to my letter dated December 15, 1953, and further supplementing the material contained for the purposes of illustrating that a 10-year period of time is all that will be required in our contract, I would like to respectfully submit the following information.

Referring in particular to the third paragraph of my letter designated as item "1.", I would like to submit data indicating the probability of return to the Government of exploration funds advanced under the proposed contract. Three possible schedules of production are shown.

The first schedule assumes that the Calera Mining Company will produce from its known reserves of 1,700,000 tons at the rate of 600 tons per day during 1954 and 1,000 tons per day during the following year. This schedule indicates that production from ore found by the exploration program should begin in 1957 at the rate of 300 tons per day. We believe that this schedule is the one which we would wish to follow under normal conditions of production.

Schedule No. 2 is drawn up to show what would happen if we produced to the maximum amount possible from our presently known ore reserves until ore becomes scarce and it then becomes absolutely necessary to draw from ore in areas covered by the exploration program. This schedule indicates that in 1959 we would be drawing from the exploration area at the rate of 500 tons per day or 155,000 tons per year.

Schedule No. 3 shows a production of 600 tons per day from our presently known ore reserves, this tonnage to be maintained constantly from year to year until we are again required to draw from outside areas in order to maintain a smooth production schedule. It

indicates that we would be required to draw from outside areas in 1961 at a rate of 300 tons per day. We believe that this schedule No. 3 is one which illustrates the lowest possible production we can possibly use that could show us a small profit. We of course would wish to operate the plant at full production of 1,000 tons per day at all times.

These three schedules are outlined in full below:

SCHEDULE NO. 1

Production from presently known ore reserves

Year	Production Per Day	Production Per Year	DMEA Production
1954	600 tons	186,000 tons	
1955	1,000 tons	310,000 tons	
1956	1,000 tons	310,000 tons	
1957	700 tons	217,000 tons	93,000 tons
1958	500 tons	155,000 tons	155,000 tons
1959	500 tons	155,000 tons	155,000 tons

SCHEDULE NO. 2

Production from presently known ore reserves

Year	Production Per Day	Production Per Year	DMEA Production
1954	600 tons	186,000 tons	
1955	1,000 tons	310,000 tons	
1956	1,000 tons	310,000 tons	
1957	1,000 tons	310,000 tons	
1958	1,000 tons	310,000 tons	
1959	500 tons	155,000 tons	155,000 tons
1960	500 tons	155,000 tons	155,000 tons

SCHEDULE NO. 3

Production from presently known ore reserves

Year	Production Per Day	Production Per Year	DMEA Production
1954	600 tons	186,000 tons	
1955	600 tons	186,000 tons	
1956	600 tons	186,000 tons	
1957	600 tons	186,000 tons	
1958	600 tons	186,000 tons	
1959	600 tons	186,000 tons	
1960	600 tons	186,000 tons	
1961	300 tons	93,000 tons	93,000 tons
1962	300 tons	93,000 tons	93,000 tons
1963	300 tons	93,000 tons	93,000 tons

We calculate that the gross value of our ore is $28.34 per ton. This value is arrived at by using the following data:

Grade of ore:	0.65 percent cobalt	
	1.30 percent copper	
	0.015 ounces gold	
Recoveries:	Mill	- 80 percent cobalt
	Refinery	- 90 percent cobalt
	Mill	- 92 percent copper

Market price - cobalt: $2.60 per pound
Market price - copper: $0.245 per pound

The gross value per ton of ore then becomes $24.34 for the cobalt content, to which is added $4.00 per ton for the net smelter value of copper, producing the $28.34 figure mentioned above.

We estimate that the refining cost on a 1,000-ton mine production basis will amount to $0.60 per pound of recovered cobalt, the equivalent of $5.62 per ton of ore. Subtracting this $5.62 figure from the gross value of $28.34 results in a net smelter value per ton of ore mined of $22.70. This net smelter value will require the use of the maximum 5 percent Government royalty factor. The royalty to be paid on this basis will amount to $1.135 per ton of ore. With mine operation on a 600-ton per day basis, we estimate the refining cost to be $0.70 per pound of recovered cobalt. This latter figure results in a 5 percent royalty of $1.09 per ton of ore mined.

Using the above figure of $1.135 per ton and applying it to mine production from DMEA ground indicates that in schedule No. 1 the Government's complete contribution will be repaid very early in the third year, or in other words probably in January 1959. This is the beginning of the sixth year after date of the DMEA contract.

Schedule No. 2 would indicate that the DMEA contribution would be repaid during the second year of production from the exploration area, or in other words the seventh year after date of DMEA contract.

Schedule No. 3 would indicate that the DMEA contribution would be repaid in the third year of production from the exploration area, or in other words before the tenth year has been completed after date of DMEA contract.

May we say that the cost figures and schedules set up above are estimates which we have been able to prepare at this time to the best of our ability. We believe that they indicate in all probability the Government's contribution will be repaid well within the 10-year contract period.

We respectfully request consideration of this substantiating material and, of course, stand ready to supply any additional information required.

Sincerely yours,

Vinton H. Clarke
Vice President

CALERA MINING COMPANY

730 FIFTH AVENUE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 17 1953

NEW YORK 19, N. Y. December 15 1953

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

RE: DOCKET NO. DMEA-3143
COBALT-COPPER

Dear Mr. Mittendorf:

We have received 6 copies of a contract which you propose for exploration work on our Calera Mining Company property located at Cobalt, Idaho.

Very frankly I was astounded to note that the 10 year provision of the contract has been increased to 20 years. I know, of course, that the government now has the right to alter this time period either upwards or downwards, but did not believe that an application such as ours would have any unusual features which could make an increase desirable or necessary to protect the government's interest. My first reaction was that such a requirement by the government in our particular application is very unfair if our proposal is compared with others already approved. I know that you are operating under a different set of standards than in the past and must be extremely vigilant in protecting the government's interests. This, of course, is the way it should be. We believe, however, completely apart from any comparison with others, that the above mentioned time period in our case should not be over 10 years for the following reasons:

1. The net smelter value of any ore found by the exploration work will be such that the 5% maximum royalty will govern and repayment of the loan will be made in a short period of time, particularly considering the fact that our present ore reserves are only good for 5½ years. As you well know, efficient mining practice would demand that we develop and mine any new ore found much before our present reserves are exhausted. We have no facilities for mining at depth and any production from lower levels of extensions of our presently known ore is a long way off and will require considerable investment. It appears that any ore found from exploration work will be mined to the point of full return to the government of exploration loan funds well before the end of a ten year period.

2. Geological estimates of our geologists, as well as U.S.G.S. technical men are such as to make the chance for success about as positive as any new mining venture possibly could be. We do not believe this proposition could by any stretch of the imagination be classified as a wildcat venture which may require extra time to further insure the government return of its money. If this is considered to be a good bet and I believe all concerned feel that way, then it appears to us that you are unfair to require us to offer extra insurance.

3. We have selected, and I know the very competent U.S.G.S. field men agree, the most favorable ground available for exploration. However, should our work be less successful than expected and should we in later years find something which lies within the claims designated by the government, even though such discovery may be a long distance from the present program and have no geological connection, is it fair to require us to pay royalties on it? This may appear to be a one-sided viewpoint and for that reason let me say that we earnestly hope and rather expect to be able to return full payment to the government on ore discovered by our program of exploration. However, we and others have been attracted to the D.M.E.A. proposition on the basis of the terms first laid out and we believe it still is in the best interests of the government to encourage exploration by making the terms equitable. In our estimation, the life of the contract above the 10 year period detracts considerably from its advantages.

4. The most serious objection we have to the 20 year feature is simply that 20 years is an awfully long time. Any agreement proposed at this time then takes on a much greater degree of importance since we have no idea just what the conditions will be at the end of this long period, nor how our present contract will be interpreted at that time. Certain features of the contract which involve wording to explain the downward extension of planes and our rights and the government's rights thereof, and which when we are considering a 10 year period are not too important, do become extremely important in the light of any extension to 20 years. For instance, I know just what is meant by the paragraph beginning "All minerals mined or produced from presently developed ore bodies" on the second page of Annex I, since I have had the benefit of discussing the subject with men of high integrity and ability within your department and we are in agreement on the interpretation. However, this very paragraph may easily be construed in a legal interpretation to be something entirely different and to our detriment. Other points in the contract not now considered to be questionable may at some distant time in the future become controversial. Probably none of us will be on the scene some 15 to 20 years from now to help out in the way of interpretation.

5. The Cobalt camp is complete, thoroughly integrated and is in actual operation. No lengthy period of mine development, road building, industrial construction is involved as is the case where exploration is undertaken in new areas or at lightly developed camps.

I have examined the contract quite thoroughly and although there are several items which do not appear to us to be clear and some definitely to our disadvantage, there is only one part which we would recommend changing if the life of the contract were changed to 10 years. I refer to Exhibit A page 3, 2nd paragraph, under title "Agreed Unit Costs" wherein the government has the right to convert from a unit cost basis to an actual cost basis, should it so elect after completion of the first year of the contract. We believe that we should also have this right since the cost figures contained in the contract are considerably lower than our original estimates and we feel we are placing ourselves in an uncertain position by accepting them.

In summation, may I say that I would appreciate very much your full consideration of the foregoing and your sympathetic understanding of our position on this matter. It has been a pleasure to personally discuss this project on several occasions with your people and I would look forward to meeting with them again if you so desire, in order that we can consummate this agreement at the earliest possible date.

Sincerely yours
CALERA MINING COMPANY

Vinton H. Clarke
Vice President

VHC:ac

FILE COPY
SURNAME:

Chapman
Martin
Selfridge
Kefauver

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

DEC 9 - 1953

Mr. Vincent H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMTA 3143, Cobalt-Copper
Calera Mining Company
Blackbird Mining District
Lemhi County, Idaho

Dear Mr. Clarke:

Enclosed are the original and five copies of a proposed contract for an exploration program at the subject property, signed by the Administrator for the Government, together with Exhibit "A" (7 pages), Annex I (2 pages), Annex II (1 page), Annex III (1 page), Maps 1, 2, 3, and 4, as well as 9 cross sections.

If the contract is satisfactory to you, please execute the original and five copies and return to us all but the one marked "Operator's copy." If any part thereof does not have your approval, the original and all copies are to be returned to this office, together with your objections and proposed changes for consideration.

The cost as specified in your amended application has been reduced about $41,000.00 because we reduced the estimates of timbering costs and number of samples necessary.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosures

cc: Docket
Code 400
FT, Region 2
Adm. Read. File
Oper. Committee
H. W. Davis, USBM
Phillip Guild, USGS

TLChapman/ls 12/8/53

R.G.S.
12-9-53

FILE COPY
400 SURNAME:

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

Save in docket
Not used

Chapman
Martin
Tyler
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Overmeier
Hedges
Schaber

Mr. Vincent H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3143 - Cobalt, Copper
Calera Mining Company
Blackbird Mining District
Lemhi County, Idaho

Dear Mr. Clarke:

Enclosed are the original and five copies of a proposed contract for an exploration program at the subject property, signed by the Administrator for the Government, together with Exhibit "A" (7 pages), Annex I (8 pages), Annex II (1 page), Annex III (1 page), Maps 1, 2, 3, and 4, as well as 9 cross sections.

If the contract is satisfactory to you please execute the original and five copies and return to us all but the one marked "Operator's copy." If any part thereof does not have your approval, the original and all copies are to be returned to this office, together with your objections and proposed changes for consideration.

The cost as specified in your amended application has been reduced about $41,000.00, because our estimates of timbering costs, and number of samples necessary, were lower than those used previously.

Sincerely yours,

Administrator

TLChapman:fec 12-7-53
cc: Docket
Code 400
FT. Region 2
Admr. Reading File
Operating Comm.
H. W. Davis, USBM
Phillip Guild, USGS

Enclosures

FILE COPY
SURNAME:

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

140

December 9, 1953

Memorandum

To: The Administrator
Through: W. S. Martin

From: Chief Counsel

Subject: Calera Mining Company, Docket No. DMEA-3143 (Cobalt-Copper)

There is enclosed in satisfactory legal form a contract covering the above-described project.

This contract has been changed from that originally submitted to provide that the Operator's obligation to bring the project to completion will continue only as long as the units of work provided for in the contract are sufficient to accomplish the work required and as long as the accumulated costs of the work, whether unit costs or actual costs, do not exceed the total estimated. It should be pointed out that if more units of work are necessary than those estimated in the contract to reach the required goal, the Operator can refuse to perform any further. He may come in and ask for an amendment providing additional funds for the additional necessary units, but he is not obligated to ask for this amendment.

Albert E. Kane

for J. L. Hofflund
Chief Counsel

Attachments

AEKane/emd
Copy to: Docket
W. S. Martin
J. L. Hofflund
A. E. Kane
chron.

R.C.A. 12-9-53

FILE COPY
SURNAME:

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

Martin/ls
Martin
Selfridge
Mitchenson

3143

143923.970 - Working Fund - DMA
December 3, 1953

A. S. Weissenborn, DMA Executive Officer, Region 2, Spokane, Washington

Reurtt December 2.

Howe Sound, Colorado Mine, Docket DMA 3143 - Contract being prepared in Washington after discussions with officials of operator's New York office. We doubt, therefore, that local officials will question you.

Trout Mining Division, American Machine and Metals Company, Docket DMA 3076 - Operator returned contract unsigned and new contract believed to be more satisfactory is being prepared in Washington.

Taylor-Knapp amended contract, Docket DMA 42 - Operator returned contract unsigned and new contract believed to be more satisfactory is being prepared in Washington.

George C. Selfridge
Chairman, Operating Committee

cc: Docket
Confirmation - FT, Reg. 2
Code 400
Oper. Comm.
Adm. Asst. File
Audits Divn., Bur. Mines

GSMartin/ls

R.C.A. 12-3-53

Defense Minerals Administration
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DEC 3 1953

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GENERAL SERVICES ADMIN.
PUBLIC BLDGS. SERVICE
GHD - COMMUNICATIONS

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WSM

34 WA SP /I-GS-G/

SPOKANE WASH 12-2-53 450P

GEORGE C SELFRIDGE

CHAIRMAN OPERATING COMMITTEE, DMEA, DEPT OF THE INTERIOR, WA

PLEASE ADVISE ON STATUS OF FOLLOWING DMEA APPLICATIONS - HOWE SOUND-HOLDEN MINE, DOCKET DMEA-3124., HOW SOUND-CALERA MIN DOCKET DMEA-3143., TROUT MINING DIVISION, AMERICAN MACHINE AND METALS COMPANY, DOCKET DMEA-3076. ALSO ON STATUS OF AMENDED TAYLOR-KNAPP CONTRACT IDM-E9. NRTHWEST MINING ASSOCIATION TO HOLD ANNUAL CONVENTION IN SPOKANE DECEMBR 4 AND 5. ANTICIPATE OFFICIALS FROM REFERENCED PROPERTIES TO ATTEND AND THAT THEY WILL HAVE QUESTIONS CONCERNING CURRENT STATUS. WIRE REPLY APPRECIATED.

THOR H KIILSGAARD, FOR

A E WEISSENBORN, EXEC OFFICER, DMEA FIELD TEAM REGION II

CCN FIRST WD LINE FIVE NORTHWEST, RPT NORTHWEST

DMEA-3124 DMEA-3143 DMEA-3076 IDM-E9 4 5

EC 457P

40

FILE COPY
SURNAME:

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

N.S. in R.R.

November 30, 1953

Memorandum

To: The Administrator
Through: Mr. W. S. Martin

From: Chief Counsel

Subject: Calera Mining Company, Docket No. DMEA-3143 (Cobalt-Copper)

Attached in satisfactory legal form for execution is a contract covering the above-described project. This unit-cost contract provides that after a year it may be converted by the Government into an actual-cost contract.

If the contract becomes an actual-cost contract, there is a monthly depreciation allowance of $595 for the use of all of the equipment but no depreciation allowance or rate is fixed for each particular item. Consequently, if any one item is not used, there will be no exact method of determining by how much the total monthly depreciation allowance should be reduced.

Albert E. Kane

for J. L. Hofflund
Chief Counsel

Attachments

AEKane:ep 11-30-53

Copy to: Docket
Mr. Martin
Mr. Hofflund
Mr. Kane
Chron.

CALE[illegible] MINING COMPANY

730 FIFTH AVENUE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 25 1953

NEW YORK 19, N. Y. November 24 1953

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

WSM

RE: DOCKET NO. DMEA-3143 COBALT-COPPER
CALERA MINING CO., BLACKBIRD MINING DISTRICT
LEMHI COUNTY, IDAHO

Dear Mr. Mittendorf:

This will acknowledge your letter of November 23rd in which you advise that you will prepare a contract regarding the above and send it on to us for our consideration. We will look forward to receiving same in the near future.

We were particularly pleased to note that your Mr. Chapman was received courteously at our plant in Cobalt and apparently he received all the information that he desired. Mr. E. B. Douglas, Manager at the plant, will be happy to know that his efforts were appreciated. He has reported that he enjoyed Mr. Chapman's visit very much.

Yours sincerely

Vinton H. Clarke
Vice President

VHC:ac

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Chief Counsel, DMEA

November 24, 1953

Chapman
Martin

Iron and Ferro-Alloys Division, DMEA

Review and preparation of Exploration Project Contract
Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird mine
Lemhi County, Idaho

Transmitted herewith is the rough draft of a proposed exploration project contract for your use in preparing the contract in final form.

Chief, Iron and Ferro-Alloys Division

Attachment

cc: Mails & Files
Code 400
Adm. Read. File

ls

FILE COPY
SURNAME:

Martin
Chapman
Fledge
Fe Jeffries

400

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

NOV 23 1953

Mr. Vincent H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3142, Cobalt-Copper
Calera Mining Company
Blackbird Mining District
Lemhi County, Idaho

Dear Mr. Clarke:

Reference is made to your letter of October 14, 1953, concurring with, or objecting to, the several items noted in our letter of October 12, 1953. Reference is also made to our conversations during your visit to this office on November 19, 1953.

In order to expedite action on your application, we believe our best plan is to prepare immediately and send to you a contract for your consideration and possible approval. You can expect to hear from us at an early date.

We also wish to thank you and your mine management for the complete cooperation, courtesy, and consideration shown to our engineer, Mr. Tom Chapman, during his recent visit made to the Calera mine and the surrounding area, to familiarize us with the operations and operational costs of the district.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

cc: Docket
Code 400
FT, Region 2
Adm. Read. File
H. W. Davis, USBM
Phillip Guild, USGS
TLChapman/WSMartin/ls 11/20/53

R.C.B.

FILE COPY
SURNAME:

400
Chapman
Mentzer
Crane

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

Reversed

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird Mining District
Lemhi County, Idaho

Dear Mr. Clarke:

Reference is made to your letter of October 14, 1953, concurring with, or objecting to the several items noted in our letter of October 12, 1953.

Item #1. We confirm that our inclusion of the Anaconda and Panther claims is only for that portion overlapping the Copper Gold and Chelan No. 5 claims.

Item #2. We agree with you in regard to the Queen Claim, if it should be acquired by you, that only ore found by the exploration work or any ore removed through the exploratory drifts or cross-cuts of the DMEA program shall be subject to royalty.

Item #3. After due consideration we are agreeable to allow the boundary lines and planes to stand as in your application.

One of our engineers has just returned from a trip to the Calera Mine and the surrounding area where he met with every courtesy and consideration on the part of your staff there. We are expediting the completion of our work on the proposed contract.

Sincerely yours,

Administrator

cc: Docket
Code 400
FT. Reg. 2
Admr. Reading File
H. W. Davis, USBM
Phillip Guild, USGS

TLChapman/foc
11-13-53

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

November 20, 1953

Memorandum

To: Mr. W. S. Martin, Chief
Iron and Ferro Alloys Division

WSM

From: George C. Selfridge
Special Assistant to the Administrator

Subject: Land Description of Proposed Contract
Docket No. DMEA-3143 (Cobalt, Nickel)
Calera Mining Company
Blackbird Mine
Lemhi County, Idaho

The land description of Article 2 should include a list of the claims the production from which will be subject to the Government's percentage royalty in case a Certification of Discovery or Development is issued. In addition, the description should include the ground which will be excluded from royalty payments. This may be described along the lines suggested below:

> All ores produced from the above-mentioned claims, and of the Queen claim should any interest therein be acquired by the Calera Mining Company, shall be subject to royalty payments in accordance with the provisions of Article 6, with the exception of ores produced from the presently developed ore bodies with their extensions to depth occurring below the planes Nos. 1, 2, 3, and 4, the traces of which on the 7100 and 7400 Levels are shown on Map No. 4. These planes shall not exempt the production from any other ore bodies to royalty payments.

It would probably be best to further describe the planes by direction and dip as did the Field Team Report.

George C. Selfridge.

George C. Selfridge

Chapman's costs
at Calais.
Memo 11/18/53

Docket 3143
Calera
Chapman
Martin

November 18, 1953

MEMORANDUM

To: Administrator, DMEA

From: T. L. Chapman, Mining Engineer
Iron and Ferro-Alloys Division

Subject: Information on various properties visited between October 18, 1953, and November 7, 1953, in Lemhi County, Idaho, Granite and Silver Bow Counties, Montana, and Salt Lake City, Utah

Left Washington, D. C., by train on October 18, 1953, at 5:30 p.m., and arrived Spokane, Washington, on October 20, at 10:45 p.m.

On October 21, conferred with various DMEA Team members, of the U. S. Geological Survey and the U. S. Bureau of Mines, concerning various contracts in operation and pending on DMEA projects.

On October 22, left Spokane at 1:00 p.m., accompanied by Mr. Nicholson of the Geological Survey, in a Government owned car, and arrived at Missoula, Montana, at 7:00 p.m. On October 23 we were joined by Mr. Johnson of the Bureau of Mines and proceeded to the Calera Mine at Cobalt, Idaho. Here we met Mr. Douglas, Manager of Calera Mines, and after a short conference Mr. Douglas and the Mine Superintendent accompanied us around the mine to the various operations.

Again on October 28 we made a short trip to the mine and through the various surface operations. Then we conferred with Mr. Douglas on mining costs and he opened up their books for our inspection.

The inspection of the underground workings shows that, while as a whole the ground was not heavy, for safety timbering was required in 70 to 80 percent of the drifting and crosscutting. At some fault areas the ground is somewhat heavy and requires close timbering. The one small heading in operation on the 7100 level was passing through a fault zone and little drilling was being done and sets were placed close together. Sills were being used which I believe are inadvisable as they will probably hump up on the middle and cause track trouble.

In a 9' X 9' tunnel on the 6850 level a jumbo set-up was being used with two drifters (two machine men and a helper). They were breaking 5½- to 6-foot rounds with 28 holes. In all drifting the burn-cut was used exclusively.

R. C. G.
1-20-54

Northfield Mines, Inc.

On October 24, 1953, accompanied by Mr. Nicholson and Mr. Johnson, an inspection was made of the camp and workings of the Northfield Mines. There was no one at the property at the time of our visit.

The ground in this area was somewhat heavier than that of the Calera Mine, but with proper supervision and good workmen should present no real difficulties. Apparently one of the main difficulties was in making openings larger than necessary. Smaller drifts and crosscuts would serve the purpose just as well as the larger one and would suffice for an operation up to 1,000 tons per day.

Some work has been done on a turn-off for the proposed crosscut in the amended contract. This work while well done is oversize and, due to this, extra heavy timber is being used. After passing out of this shear zone, the going should be better.

Peeled timber is being used, while unpeeled timber would do just as well. Timber is contracted peeled, framed and delivered at the mine at $10.00 per set. The posts are 9 feet long and the caps are 8 feet; the timber is 12 to 14 inches in diameter; 7½ foot posts and 6½-foot caps, 8 to 10 inches in diameter and unpeeled, would serve just as well or better. The framing is unnecessary. This type of timber should be delivered for $6.00 to $7.00 per set. Pole lagging is being used as a general rule. Lumber costs $80.00 per thousand delivered at the mine.

Pressure appears to be mainly from the sides. With proper lagging the side pressures could be easily relieved and it appears that after the ground is open for awhile the pressures and swelling stop.

We believe with good supervision and good workmen the costs as submitted in the amended contract can be met.

On our return to Cobalt we met Mr. Milo Mann, who was in charge of the operation and had just returned from Eureka, Nevada. He advised that they were closing down for the winter and that all rental machinery was being removed. The closing down for the winter had been cleared with the Government.

In regular drifting and crosscutting off the main haulage level (6850 level) jackleg machines were being used. All drilling was done with tungsten carbide bits, either detachable or integral with the steel. Alloyed steel was being used and steel breakage coincided with the life of the bit, which averaged about 350 feet of hole.

Regular drifts for 5' X 7' in the clear of timbering, require from 22 to 24 holes according to the standards of the district. The large number of holes used is due to the ease of putting in holes with the present machines and tungsten carbide bits. The ground could be easily broken with about 15 holes. As all holes are fully loaded with powder, the result is that 30 to 50 percent more powder is used than should be necessary. The operator has been using electric blasting but is changing back to fuse and caps. With 22 to 24 holes, the cost of electric caps is about $1.00 per foot, or about $5.00 to the round, and with fuse and caps it is about $0.75 per round. It is claimed that with electric blasting there are fewer missed holes, which may be true. With fuse and cap blasting, a number of the misses are probably due to holes being cut off on account of the excessive number of holes.

One of the main bottlenecks in the operation is the labor problem. First-class miners are difficult to obtain, but the writer believes with a good instructor or shift boss the men could be easily taught to handle the work in this area. The Union leaders discourage men from making too high a footage.

All drifting and crosscutting is carried on by contract, except where ground needs timbering or spiling, which is done on a daily wage basis. The average rate amounts to about $9.00 per foot. Men on this work usually make about $20.00 per day or $5.00 above the regular scale of $15.04 per day for miners. In addition to this are holiday pay, vacation pay, and other fringe benefits.

At the time of this visit the Unions were asking another pay raise and negotiations were being carried on. The Company was not inclined to give a raise as they were following the Coeur d'Alene scale.

Due to the troubles at the Garfield, Utah, refinery, the mine is now operating at about 20 percent of capacity. The following men were employed:

24 staff men
41 men underground
10 men in the shops (½ to mine)
26 men on surface (½ to mine). This appears high for mine.
12 men on transportation (hauling out concentrates and bringing in supplies)

Total 113 men

For the present operation the staff force is high. Also other key men are being retained on the payroll. As a result the costs on the present operation are high.

The cost for 358 feet of drifting on the 7100 level in the past 4 months is as follows:

	Cost	Cost per foot
Labor	$3,061.91	$8.55
Labor bonus	957.12	2.67
Explosives	984.09	2.75
Nipper and hoistman	968.97	2.71
Drill repairs	331.15	.93
Steel and bits	438.60	1.23
Air	607.80	1.70
Air and water pipe	195.58	.54
Other	82.65	.23
Sub-total	7,627.87	21.31
Traming	$ 558.56	$1.56
General (Mine)	5,246.36	14.65
Sub-total	5,804.92	16.21
Timbering		
Labor	$1,000.25	$2.79
Supplies	983.74	2.75
Framing and handling	549.30	1.53
Sub-total	2,533.29	7.07
Total	$15,966.08 . . .	$44.59

All timber used is peeled round for drift sets. The peeling costs about 4 cents per running foot. This peeling could be eliminated with no deleterous results. With a few scabs the framing could be eliminated and smaller timber could be used (8-inch timber unframed would be as strong as 10-inch framed). Framing is done with skill saws and hand tools.

The lack of footage is one of the main reasons for high costs. A 6- to 7-foot round could be easily obtained. At present mucking time is 1½ to 2 hours and the same for drilling. Hence the round can be completed in 4 hours or less. If longer steel were furnished, longer rounds could be drilled. The miner would make more money, but the ultimate costs would be decidely less.

The high general costs of $14.65 per foot are mainly due to the property being operated on a 20 percent of capacity basis. I believe these costs would be cut in half by a full time operation.

Supply costs are as follows:

Lumber	$60.00	M
Round timber, peeled. Average	.20	per running foot
Powder	18.45	cwt.
Fuse	1.01	per 100 feet
Caps 6X	1.70	per hundred
Electric caps. Average	.22	each
Rail	160.00	per ton (45# & 24# used in mine)
Rail spikes	13.00	cwt.
Rail bolts	18.00	cwt.
Pipe		
3/4"	.11	per foot
1"	.17	" "
1½"	.30	" "
2"	.38	" "
3"	.88	" "
4"	1.35	" "
2" unions	1.34	each
2" couplings	.40	each
2" tees	.86	each
2" plug cocks	5.91	each
2" gate valves	10.80	each
2" check valves	10.34	each
1" air hose	49.40	for 50-ft. length with connections
½" air hose	16.00	for 50-ft. length with couplings
Nails and spikes	12.00	cwt.
Drift picks, 4#	1.93	each
Pick handles	.80	each
Hammer, 4#	1.90	each
Hammer handles	.70	each
Mine axes	3.17	each
Mine saws	4.70	each

The handling of the labor situation is the vital point in the possible lowering of costs. I believe this can be done with the proper supervision.

Costs will be mainly relative to the footage obtained. An increase of 1-foot-per-day should be easily obtained. The miners would make a relatively high wage, but the decrease in overhead costs would be high.

Under the present operation the cost of a bald drift should not exceed $35.00 per foot. On a full operation basis the cost should be around $32.00 per foot.

Apparently one of the main difficulties, and a common one in present day operations, is that the high cost machines such as mucking machines, trammers, etc., are idle during too high a percentage of the time.

The equipment and set-up of this operation is first class in every way.

Montana Coal and Iron Company
Black Pine Mine

On October 25, 1953, accompanied by Mr. Nicholson and Mr. Johnson, an inspection was made of the Black Pine Mine. The work was being carried out by the sub-contractor with a crew of two men in the upper level headings and one man was being used to prepare the lower level for operation.

Five to five and one-half feet were being broken per round, using column-mounted drifters. The drifts were carried about 5' X 7' in the clear and timbered where necessary. A mucking machine was used but all tramming was done by hand. Seven holes were used to break the ground in the drifts along the veins and up to 12 holes in crosscutting. The miners used a V cut and apparently were good at breaking ground, taking advantage of all cracks and slips. The average for powder was about 5 pounds per foot.

While about 60 percent of the ground was timbered, it was mainly necessary for safety and except for some fault zones the ground was not heavy.

The work was being carried out in a miner-like fashion and it is doubtful if the ground breaking and footage could be improved very much.

A consulting geologist available to inspect the work about once a week could be used to advantage to check on the numerous faults that cut the veins.

It is quite probable that when the lower tunnel is in about 500 feet a Mancha Mule will be requested. In an operation of this type a horse or mule will be just as efficient and much cheaper.

Herb St. Clair is contracting the work and is part owner of the property.

The Bradley Mining Company
Ima Mine

On October 27, 1953, accompanied by Mr. Nicholson, the Ima Mine was inspected. Mr. Charles Hathhorn is Manager at the property and assisted us in every way in inspecting the workings and opened up his books for the cost accounting.

All mine work is being carried out in a good workmanlike manner. Drilling is being carried out with column mounted drifters and the average round broken is 5½ feet. The ground is hard and 22 to 24 holes are used per round with a 3 to 5 finger burn cut. Nine to ten pounds of powder per foot are used with fuse and 6X blasting caps.

Timbering is required for about 33 percent of the drifts and crosscuts. The ground except at some fault intersections is not heavy and most of the timbering is for safety from falling rock. About 10" unpeeled round timber is used and is framed in their mill with a standard framing set. The cost for framing is about 80 cents per set. The timber laid down at the mine costs 15 cents per running foot. Sawed lumber costs $60.00 per thousand board feet.

Tungsten carbide bits are used for drilling with standard carbon steel. The bits average about 300 feet of hole and the steel stands up to about the same footage. They get results from carbon steel about equal to the alloy steels used by other operators. It is claimed this is due to the fact that they have an extra good man on handling this type of steel. The average bit costs $12.50 and hollow carbon steel costs 18 cents per pound.

Twenty pound rail is used in regular drifts and 30 pound rail on the main haulage level. In much of the older work 12 and 16 pound rail was used. Rail costs $157.00 per ton in carload lots; track spikes $14.00 per cwt.; and track bolts $20.00 per cwt.

General costs

Powder	$19.00 cwt.
Fuse	1.12 per hundred feet
Caps 6X	1.87 per hundred
Electric caps, average	.22 each
Pipe	
1/2"	10.75 per hundred feet
3/4"	13.09 " " "
2"	42.72 " " "
3"	90.00 " " "
4"	137.00 " " "
3" iron cocks	19.50 each

All work is carried out on a day's-pay basis and a 6-day week. No contracts are let and no bonuses are paid. The daily wage is as follows:

Miners	$14.68 per shift
Helpers	13.76 " "
Muckers	12.93 " "
Motormen	14.68 " "
Shiftbosses	525.00 per month
Engineers	452.00 per month

The following costs for 301.5 feet of drifting are taken from the Operator's Monthly Report for September 1953, on Contract No. Idm-E427, Docket No. DMEA 2635:

	Cost	Cost per foot
Labor	$3,119.59	$10.35
Supervision	811.96	2.69
Explosives	1,080.95	3.58
Timber	20.70	0.07
Pipe	81.61	0.27
Track	251.52	0.83
Drill steel & bits	689.25	2.29
Other supplies	702.67	2.33
Depreciation	1,052.85	3.49
Payroll taxes, FICA	71.56	0.24
Liability Insurance	60.14	0.20
Workmens Compensation	253.41	0.84
Total operating cost	$8,196.20	$27.18

The charge of $3,507.50 for "New Buildings and Improvements" for 3,000 feet of drifting and crosscutting amounts to $1.17 per foot, or a total of $28.35 per foot for the operation. This operation indicates that under similar conditions a good operator can handle labor situations and other difficulties and keep the costs down to a reasonable figure.

No major suggestions can be made to improve the conditions at Ima. The cost of explosives and drill steel and bits are high and might be cut.

The cost allowance in the above contract is $32.0325 per foot for 3,000 feet of drifting and crosscutting.

Taylor-Knapp
<u>True Fissure and Durango Mines</u>

On October 28, 1953, at 4:00 p.m., accompanied by Mr. Quinlan of the U. S. Geological Survey, I arrived in Philipsburg, Granite County, Montana. Mr. Don Johnson, Manager of the Taylor-Knapp operations, was contacted and arrangements were made to visit the True Fissure workings on the morning of October 29. Mr. Zoldok of the U. S. Bureau of Mines joined us on the evening of the 28th.

On October 30, Mr. Johnson accompanied by Mr. Quinlan, Mr. Zoldok, and myself, went through the workings of the True Fissure Mine. Outside of being somewhat rough and sloppy on the bottoms, the mine was in fair condition. Only one heading was being driven at the time. A

Jacking drill was being used and a 5-foot round was being put in with one piece of steel. The ground was easily drilled and a 22 hole round could be drilled in 2 hours or less. The ground breaks good and clean, a burn cut being used. Tungsten Carbide bits are used integral with alloy steel. The bits average 500 feet of hole or better.

The lack of footage is the main reason for high costs. Using a longer piece of steel, a longer round could be readily broken and mucked out. Miners are paid $9.50 per foot for drilling and mucking out a round. If timbering is necessary, the men work on day's pay. From 10 to 20 percent of the openings need timber. In DMEA work performed in the past there was only one short area of heavy ground encountered. This necessitated retimbering and the swelling has stopped.

The DMEA work in the past has been carried out inefficiently. The main reason is due to the labor situation. The Philipsburg District has become pretty much a leasing area and the resident miners do not do well on day's pay. As leasers they do well enough by working short hours and as a whole it is difficult to get them to put in a full shift at day's pay or on contract. With the closing down and curtailing of the lead-zinc districts, it is possible there may be more miners available for this area. In the past the labor cost has been about $23.00 per foot. With better footage which is possible this should not exceed $18.00 per foot.

The other reason for high costs is inefficient use of high cost machinery, such as trammers and mucking machines. The ground as a whole is easy breaking, but easy drilling has caused the use of an excessive number of holes and hence a high cost for drill steel, bits and explosives.

As a whole our allowance for timbering has been low at $5.00 per foot and with efficient work will run around $7.00 per foot.

With good supervision there is no reason that the cost of a bald drift should exceed the $32.20 per foot as presented in the contract, now in the hands of the applicant. If objections are made to the timbering costs, an allowance to $7.00 per foot should be made with a small increase in the feet of timbering allowed.

The standard wage for miners is $14.71 per shift or $15.74 on a 6-day week basis. In addition are the fringe benefits of holiday pay and vacation pay, and taxes.

The average cost of timber is $47.50 per thousand board feet for sawed or round unpeeled.

The cost of tungsten carbide bits integral with alloy steel is as follows:

1-7/16" bit, 6' steel	$23.70
1-15/32" bit, 4' steel	22.05
1-1/2" bit, 2-1/2' steel	20.55
Detachable bits (tungsten carbide)	
1-3/4"	15.60
1-1/2"	13.85
1-3/8"	12.10

Rail	$160.00 per ton
1" pipe	.2237 per foot
2" pipe	.47 per foot
Vent tube: 8"	69.35 per hundred feet
12"	90.25 per hundred feet
Ingersoll Jackleg machine	575.00

American Machine and Metals, Inc.
Trout Mining Division

On October 30, 1953, Mr. Quinlan, Mr. Zoldok, and I, accompanied by Mr. Roy McCloud, Manager of the Trout Mining Division, visited the operating properties of this company at Philipsburg.

The operations are carried out entirely on a leasing basis and for this reason it is difficult to arrive at costs of the various operations.

The work is carried out in usual leasing style. The drifts are rather dirty and sloppy and rather small when vent pipe, etc., is installed.

Two drifts were being driven by leasers at the time of the visit. These drifts on different levels were in the same type of rock, a garnetized limestone. The ground is hard and does not require any timbering. Stoping machines were being used for drifting with detachable carbide bits. Fifteen holes were drilled per round with V cuts and an average break of 3 feet per round. On one level a mucking machine was used and on the other level the work was done by hand mucking, with the time of mucking being nearly the same in each heading. The average for the carbide bits was only 98 feet per bit. The bits broke at the bit shoulder and the carbide inserts held up well. This is probably due to the use of the stoping machines which, due to their unsupported weight, throw heavy side pressures on the steel and bits. There is little doubt that with a Jackleg or mounted drifter a 5-foot round could be drilled with a good efficiency from the bits.

About 30 percent of the ground is timbered. Sawed lumber costs $55.00 per thousand board feet, and round timber unpeeled costs $36.00 per thousand board feet.

Timber is framed, which is unnecessary when drifts are not in ore but necessary when in ore so that square setting can be carried above the drift sets in the stopes. The mine has a regular framing setup.

The Mullin Mine was visited, which is the property covered by the company in its application for RFC assistance. No equipment or buildings are on the property and it will have to be entirely equipped for the operation.

The shaft collar is in bad condition and as far as could be seen the rehabilitation work would be somewhat difficult. It appears that the rehabilitation cost of the applicant of $68.88, less depreciation costs of head frame, power line and buildings, is justified.

It will be necessary to erect a head frame, a building for hoist, compressor and shop (about 16' X 24'), and 2,000 feet of power line with transformers. This is not included in contract as written.

Mr. McCloud still maintains that it takes two men one day to frame a set of timber for a 2-compartment shaft. This work should be easily done by two men in 4 hours or one man in 8 hours.

Making a disallowance for depreciation on installations, it is probable that the costs will run close to those presented by Mr. McWabb ($112.48), or those of Mr. Zoldok ($114.44).

Making a disallowance for depreciation, it is probable that the drifting costs should be about the same as that presented to Taylor-Knapp of $32.00 for a bald drift. Allowance for timbering should be increased from $5.00 per foot to $7.00 per foot.

The answer to the problems at the operations of The Trout Mining Division of the American Machine and Metals Company depends on how well the management and supervisory staff can handle labor.

Irving and Nelson
Plutus Mine

On October 31, 1953, accompanied by Mr. Zoldok, we drove to Butte from Philipsburg and met Mr. McNabb of the U. S. Bureau of Mines. Mr. McNabb accompanied me to the Plutus Mine where we met Mr. Nelson who supervises the operation. The surface setup at the mine is good, and no money has been wasted.

The underground workings are clean and being carried out in a workmanlike manner. The drifts and crosscuts are oversize, being 8' high and 9' wide in the clear. All the openings to date have necessitated timbering. The ground is rather soft and sluffs badly, though with the exception of fault zones it is not heavy. A considerable saving could be made by driving smaller openings.

They were just starting DMEA work and expected to drive two headings, one east and one west. This work will not be too fast as they save ore while drifting, which at times necessitates shooting out the waste and then stripping the ore. In this way the operators will probably pay their share of the operation.

Jacklegs are used in all the drifting and crosscutting. Usually more holes are drilled than are necessary. The crosscut to the Norwich Mine [GSA Contract GS-10P(D)-3] is a good example of difference in miners. Working two shifts, one miner puts in 20 six-foot holes and breaks about 5 feet. The other miner puts in 17 holes and breaks over 6 feet. This is good proof that as a general rule more holes are used than are necessary. As a burn cut is used, one hole is not shot. With a 5' X 7' drift it would not require more than 12 holes to break the ground. In drifts the ground probably could be broken with 8 or 9 holes.

In order to obtain the better miners in the area, $1.00 per day is paid above the Butte scale, making the wage $17.80 per day on a 6-day week.

The labor costs for crosscut, with miners on contract for breaking the ground and day's pay for timbering, are as follows per shift: (All ground is timbered and the average is 3½ feet per shift.)

	Per Shift	
2 miners	$43.24	
Trammer, trackman, etc.	17.80	
½ hoistman and topman	16.77	
Total		$77.81
Taxes		9.72
Supervision		9.75
Total labor cost for 3½ feet crosscut		$97.28
Cost per foot for labor and supervision		$27.79

With two headings under the DMEA contract and two headings (one on vein and crosscut on 86A contract), the overhead costs will be cut from one-half to three-fourths.

Costs for supplies for a 6-foot round are as follows:

Powder	$8.85		
Fuse and caps	2.68	Explosives per foot	$1.82
Steel and bits	5.76	Cost per foot	.96
Power (Hoist, compressor)	7.50	" " "	1.25
Pipe, second-hand 2"	2.50	" " "	.42
Track, 30#	4.00	" " "	.67
Ties	.60	" " "	.10
Hose	1.28	" " "	.21
Repairs Shovel, etc.	5.00	" " "	.83
Timber	23.55	" " "	3.93
Service cost timber	2.35	" " "	.39
Miscellaneous supplies	6.50	" " "	1.08
Total supplies	$69.97	" " "	$11.66

Total cost labor and supplies for single heading operating through shaft. $39.45

Posts and caps are bought framed; $1.85 each, 12" round, unpeeled.
Girts cost $1.00 each.
Sawed lumber $60.00 per thousand board feet.

Mr. Nelson handles the operation for the partnership and Mr. Irving the business end. Mr. Nelson is a good operator on the job. Mr. Irving is good at handling the business end of the operation.

Except for reducing size of openings, there is little that could be done to improve operations.

- - -

Entrained from Butte, Montana, the evening of November 2 and arrived in Salt Lake at 9:00 a.m. November 3. During November 3 and 4 I conferred with members of the DMEA Team of the U. S. Geological Survey and the U. S. Bureau of Mines and Mr. Ed Snyder of the Combined Metals.

A difficult thing to explain was why such companies as the U. S. Smelting with a good sized operation had higher costs than a number of the small operators.

After a lengthy interview with Mr. Ed Snyder of the Combined Metals the fact seemed to be that a large part of the trouble depends on management and supervision. The tendency is to follow along with the labor and little effort is made to correct this tendency.

The inability to handle men seems to be the main drawback; that it can be done is proved by the management at Ima. It appears that the management and supervisory crews like to follow the tendency of the laborer and take it somewhat easy.

Many thanks are due to the U. S. Geological Survey and the U. S. Bureau of Mines members of the DMEA Teams and to the management of the various mines visited for their complete cooperation and assistance in arriving at costs and methods of operation.

Entrained at Salt Lake at 6:20 a.m. November 5, and arrived in Washington on November 7 at 8:40 a.m.

As the operation of the projects is in the hands of the operator, it is difficult to say how the operations may be improved. One possible answer is for the Government to set unit costs at which they will enter into contracts and then it will be up to the operator to try to meet these costs.

Thos. L. Chapman
Mining Engineer

Martin
F.G. Johnson

Memo 3143

October 30, 1953

Mr. Thomas L. Chapman, Mining Engineer
Iron and Ferro-Alloys Division, DMEA
% Trout Mining Division
American Machine and Metals, Inc.
Philipsburg, Montana

Dear Tom:

We enjoyed your letter very much and believe that it was very wise to get the Calera trip completed first. Butte may be an easier place to leave from when your trip is over. Mr. Knapp has returned from abroad and hopes to see you while you are in Philipsburg. I told him you would spend as much time there as was necessary.

Just in case they may come in handy in your conferences with Calera and the Field Team, we are enclosing copies of the following:

1. Our letter of October 12, 1953, to Mr. Clarke.

2. Mr. Clarke's reply of October 14, 1953.

3. Map showing "Proposed Exploration by Calera Mining Company" with trace of Planes 1, 2, and 3 on the 7400 level added.

4. Sections by Calera with the trace of the respective boundary planes added.

The boundary planes are shown as changing to the vertical at the 6750 level. We believe this is proper as it allows the company a minimum of 500 feet extension down dip of the known ore bodies. It is hoped that this will be agreeable to the company.

Everyone here sends regards to you.

Sincerely yours,

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

FARutledge:foc
10-30-53
cc: Docket
Code 400
Admr. Reading File

Enclosures

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

Spokane, Washington
October 22,1953

Mr.W.S.Martin, Chief
Iron and Ferro-Alloys Division, DMEA
Room 3538, New Interior Building
Washington 25, D.C.

WSM

Dear Bill:

Arrived in Spokane Tuesday night on schedule. I spent yesterday (Wednesday) with the boys of the Geological Survey, and the Bureau of Mines.

We had a tentative itinerary fixed up to leave this morning for Philipsburg, but find that Mr.Manning of the Trout will not be in until about November 1st. So we are re-arranging our program as follows:

Leave here about noon for Cobalt, spend the balance of this week and next week in that area, then come back to Philipsburg and spend the following week in that District.

Mr.Johnson of the Bureau of Mines and Mr.Nicholson of the Geological Survey are taking me to Calara. Then Mr. Quinlan of The Geological Survey and Mr.McNabb of the Bureau of Mines will meet me in Philipsburg. Everyone is being very co-operative. Mr.Weissenborn was called to Denver on a special meeting.

Sincerely yours,

Thos. L. Chapman

Thos.L.Chapman

Docket

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 20 1953

CALERA MINING COMPANY

730 FIFTH AVENUE

NEW YORK 19, N. Y. October 19 1953

WSM

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

Re: Docket No. DMEA 3143 - COBALT-COPPER

Dear Mr. Mittendorf:

I am advised by Mr. E. B. Douglas, Manager of Calera Mining Company, Cobalt, Idaho, that in his wired information regarding claim detail requested by you, that an error in the transmittal of my wire to them caused them to give you detail on claim Chelan #9 instead of Chelan #5.

The following will give you the correct information on claim CHELAN NO. 5 as you requested in your letter dated October 12th:

Claim CHELAN NO. 5 was recorded in Lemhi County, Idaho on August 17, 1950, Book 3 Mining Claims Page 520.

Yours sincerely

Vinton H. Clarke
Vice President

VHC:a.c
cc:EBDouglas

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

FX-1201

SYMBOLS

DL=Day Letter

NL=Night Letter

LT=Int'l Letter Telegram

VLT=Int'l Victory Ltr.

The filing time shown in letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

OA465 PRD166

PR•BUA301 NL PD=SALMON IDA 14= 1953 OCT 14 PM 9 38

C O MITTENDORF DIRECTOR D M E A=

UNITED STATES DEPT OF INTERIOR 19 AND E ST

NORTHWEST WASHDC=

PLEASE REFER DOCKET NUMBER 3143 STOP PANTHER ANACONDA AND COPPER GOLD CLAIMS MINERAL SURVEY NUMBER 2557 PATEN NUMBER 269008 SERIAL NUMBER 09213 DATE MAY 23 1912 STOP UNPATTENED CLAIMS CHELAN NUMBER 9 RECORDED LEMHI COUNTY IDAHO JUNE 7 1946 IN BOOK TWO OF MINING CLAIMS PAID 265 REGISTRATION NUMBER 63711=

CALERA MINING CO E B DOUGLAS=

5

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CALERA MINING COMPANY

730 FIFTH AVENUE

Department of the Interior
Defense Minerals Administration
RECEIVED
OCT 15 1953

NEW YORK 19, N. Y. October 14 1953

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

WSM

Re: Docket No. DMEA 3143 - Cobalt-Copper

Dear Mr. Mittendorf:

Many thanks for your letter under date of October 12th in which you suggested certain changes in our application for the purpose of protecting the Government's interest in the outcome of the proposed exploration program.

In particular reference to Item #1, I believe that we would have no objection to the inclusion of the Copper Gold and Chelan No. 5 claims although it would appear that this would extend the boundaries of the area under exploration to over 1200 feet beyond the possible ore occurrence as indicated by surface outcroppings. Our original line gave a clearance of something like over 600 feet. I presume that your reference to the Panther and Anaconda claims is only in regard to those portions of such claims which overlap the Copper Gold and Chelan No. 5. I have no information available in this office to indicate whether such portions have prior rights over the Copper Gold and Chelan No. 5 but if this is the case, the inclusion of the afore-mentioned portions is agreeable to us.

add claims

Item #2 refers to the Queen Claim and your request for royalty rights should we acquire this claim within the life of the contract. We would be quite agreeable to this provision should it also be made clear that any ore mined within this claim must be that found by the exploration work. As you will note on the maps accompanying our application, our lowest level has been driven very close to the Queen Claim. We have already located some ore indications in this immediate area and it is quite possible that part of this ore may extend into the Queen Claim. We believe that in the wording of the contract there should be a clear difference between ore-bodies located by exploration work and those located by ourselves in regular development of presently known ore-bodies.

add Queen claim

Referring to your Item #3, we feel that such a change of dip from that indicated by our boundary lines to the vertical below the 6750 would be quite dangerous and very probably misleading. Such a change would mean that approximately 500 feet below this elevation the boundary line would pass through our presently known ore-body. It would similarly pass through and exclude any ore discovered by the exploration program. This particular reference is to the line indicated by the 55° dip to the northeast. On the north end of our presently known ore-body such a change of dip to the vertical would mean that the boundary line would pass into

our presently known ore-body directly at the 6750 elevation and would include our presently known ore-body within the area to be benefitted by the exploration program. For this reason we believe that the boundary lines be maintained as indicated in our application. I believe this would maintain a definite cut-off between the presently known ore-body and future exploration.

Item #4 allows you to benefit by royalty payments from the extension of ore-bodies located by the exploration program through the boundary or cut-off planes. This is certainly fair enough.

We do not have available in this office the information regarding patent numbers, etc. on the Copper Gold, etc. claims that you request. However, I will obtain it as soon as possible. I assume that your general procedure is to prepare a contract draft that we can examine. I believe that any differences of opinion can be rather easily cleared up at this time and I will look forward to receiving it at an early date.

Yours sincerely

Vinton H. Clarke
Vice President

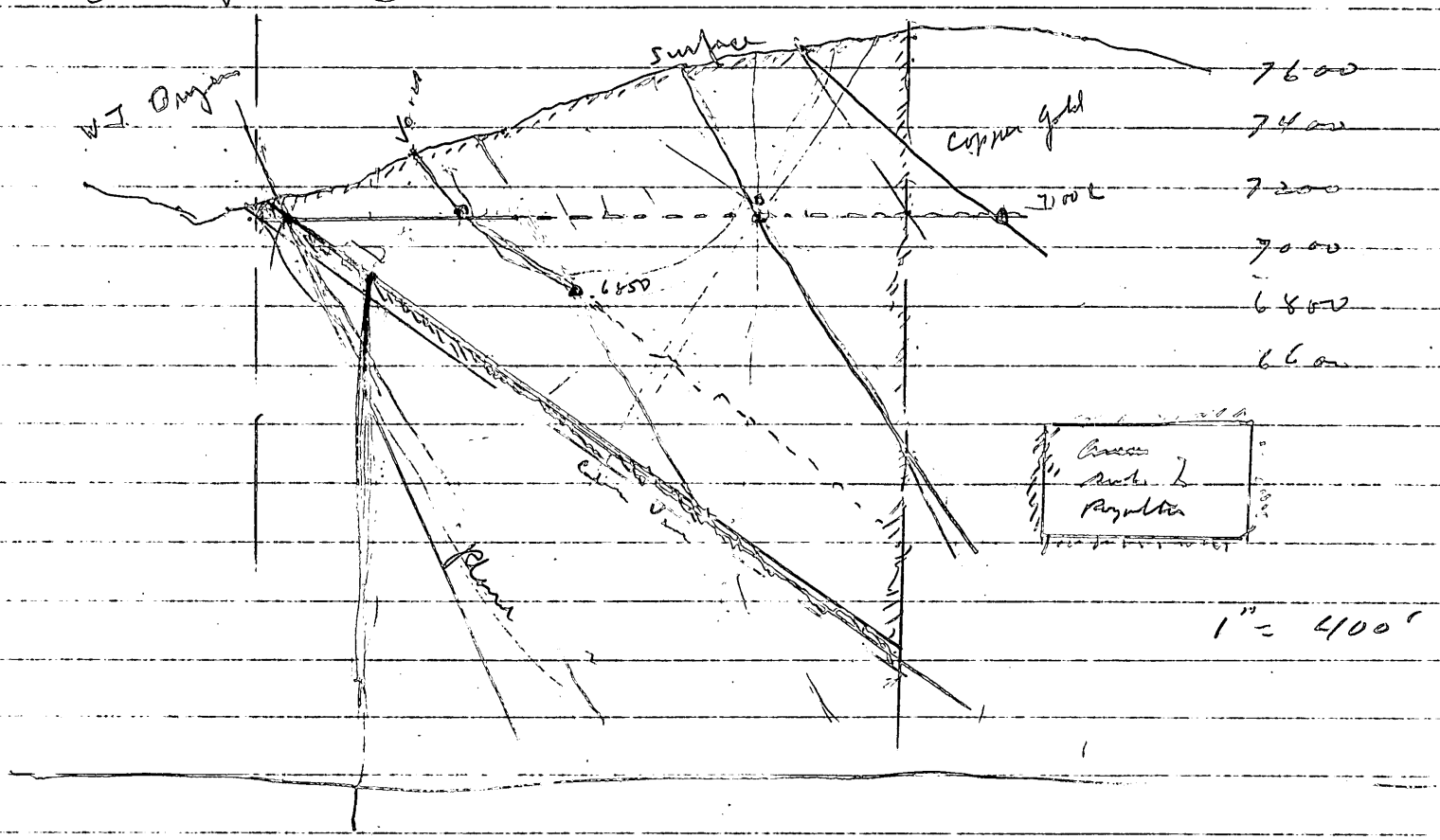
VHC:AC

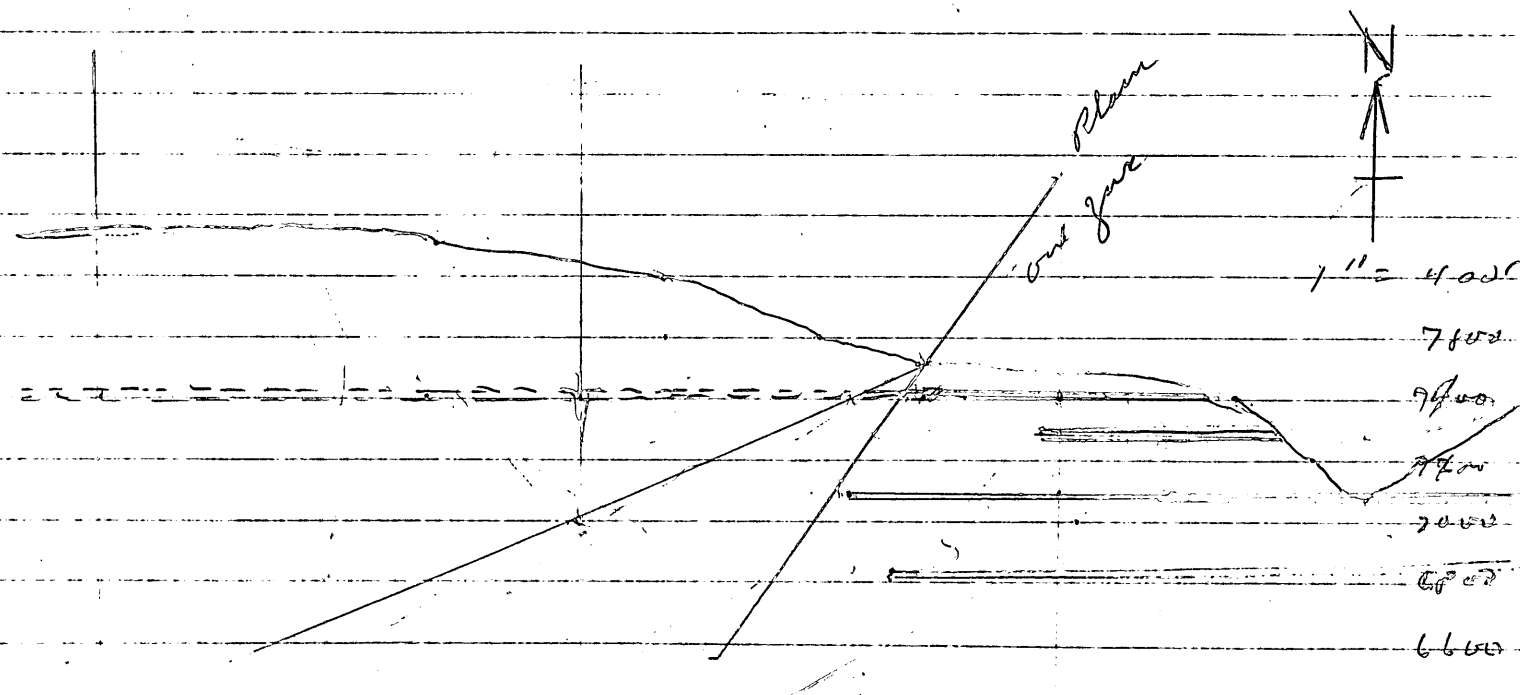
cc:EBDouglas

P.S. Claim information being wired to you direct from plant at Cobalt, Idaho.

Calera Mining Co. (Black Gold Mine) N

DMEA - 3143





FILE COPY
SURNAME

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

400 Chapman
Martin
H. Johnson

OCT 12 1953

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Clarke:

In reviewing your application for exploration assistance on the subject property we believe that to protect the Government's interest changes should be made as follows:

1. The Copper Gold and Chelan No. 5 claims, and the Panther and Anaconda if these two claims have prior rights over the Copper Gold, should be included in the proposed contract.

2. If at any time within the life of the contract the Queen claim or mineral rights should be acquired by the Calera Mining Company, then any ore mined from within the area of this claim should be subject to the royalty provisions of the proposed contract.

3. The boundary or cut-off planes are to apply to known ore bodies only and should be extended on their designated dips to the 6750 level only, and below this level the planes should be vertical on their downward course.

4. Any new ore or ore-bodies discovered by the work designated in the contract should be subject to royalty payments, even if these ore bodies on their course or dip should extend through the boundary or cut-off planes.

It will also be appreciated if you will send the patent numbers of the Copper Gold, Panther and Anaconda claims, and the book and page number of the Chelan No. 5 claim as recorded at Salmon, Idaho, if available in your office.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

TIChapman:foc 10-9-53
cc: Docket Admr. Reading File
Code 400 H. W. Davis, USBM
FT. Reg. 2 Philip Guild, USGS.

R.C.J. 10-12-53

Calumet — Jones geologist

1^{50} Truck — 8^{00}

1^{58} Lt. [illegible] — 1^{82} caps · 1^{25} ft. modified fuse — holes

3^{10} " Powder, etc — 3^{60} caps

$2''+2''+1''$ $\frac{30}{77}$ pipe — $3''$ .87 & $2''$ .42 = 1^{29} couplings

Running ±½ shift [illegible] / [illegible]

Why hang on equipment in exploration?

Installing underground [illegible]

[illegible] underground [illegible] timbered [illegible]

37.085 [illegible] — 47.51

	Hoisting	D.D. underground	Timbering N	H	S
Calumet	45^{87}	37.085	3.38	6.33	6.33	20^{00}
Northfield	32^{50}	5^{00}	5^{00}	5^{00}	5^{00}	20^{00}

37.085
6.33
20.00
[illegible]

Above data rec'd fm DGS 10-14-53

Dmea 3143

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT - 9 1953

RECEIVED
OCT 8 5 54 PM '53
GENERAL SERVICES ADMIN.
PUBLIC BLDGS. SERVICE
BMD - COMMUNICATIONS

WSM

NSS WA CP /I-SS-G/

SPOKANE WASH 10-8-53 232

MR GEORGE T SELFRIDGE CHAIRMAN

OPERATING COMMITTEE DMEA DEPT INTERIOR WA

REUNTEL OCTOBER 8, 1953 DOCKET DMEA 3143 SALMON MINING COMPANY

SENDING AIRMAIL DUPLICATE COPY OF DOUGLAS- LETTER OF AUGUST 27TH..

THIS WAS INCLUDED WITH FIELD TEAM MEMORANDUM OF SEPTEMBER 24TH.

A M WHITCOMBE ENGR OFFICER DMEA FIELD TEAM REG II USGS SP

8 1953 DMEA 3143 27TH 24TH

AS 232

No reply necessary

FILE COPY
SURNAME:

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

Martin
Selfridge
Weissenborn

Defense Minerals Exploration
Administration

W. S. Martin
3538

5285

14 X 3923.970 - Working Fund - DMEA
October 8, 1953

A. E. Weissenborn, DMEA Executive Officer, Spokane 4, Washington

Reurlet September 4, Docket DMEA 3143, Calera Mining Company. Please airmail copy of E. B. Douglas letter of August 27, with attached addendum, as we require survey or book and page numbers of various claims.

George C. Selfridge (fw)

G. C. Selfridge,
Chairman, Operating Committee

CC: DOCKET
FT. REG. 2
CODE 400
OPER. COMM.
AUDITS DIVN., BUR. MINES
H.W.DAVIS, USBM
PHILLIP GUILD, USGS
ADM. READ. FILE

WSMartin/ls
10/8/53

R.C.G.
10-8-53

Docket

Defense Minerals Exploration Administration
RECEIVED
OCT 1 - 1953

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

October 8, 1953

Air Mail

WSM

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Selfridge:

Reference is made to your teletype and our reply of this date requesting a copy of Douglas' letter of August 27 and addendum in connection with subject docket.

We are enclosing herewith two ozalid copies of the Douglas letter and addendum in accordance with your request. However, this was included with Field Team Memorandum of September 4, 1953.

Sincerely yours,

Mary L. Smelser

Mary L. Smelser
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures
cc: USBM(2)
Fieldman

Copy retained 400

Map - Map No. 2 -
Aug. 26, 1953, in
map pocket

Ltr Aug. 27, 1953 -
from Calera -
states that maps, be
kept Confidential

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

Docket

DEPARTMENT OF THE INTERIOR
Dennis Chavez Building
RECEIVED
OCT 1 2 1953

August 27, 1953

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenborn:

During our discussion on August 18, 1953 regarding this Company's application for a D.M.E.A. loan, you suggested that certain additional information would expedite the handling of our application. Accordingly, we are enclosing the following:

(1) Claim Map of Calera Mining Company's holdings in areas affected by proposed exploration programs.

(2) Revised generalized plan showing boundary lines beyond which new ore findings are subject to Government lien.

(3) Addendum to question 3-a of Calera Mining Company's Application for Aid pursuant to D.M.E.A. Order No. 1.

In regard to the claim map which we are furnishing, we wish to point out that this map shows only that portion of the Company's locations which may benefit by the proposed exploration, including our holdings which are adjacent to Northfield Mines, Incorporated. This map is confidential, but may be used by the proper Government officials in resolving the question of possessary rights of certain ground in the Little Deer Creek drainage.

In regard to the revised generalized plan which we are enclosing, we wish to call to your attention that we have changed the south end of the boundary line behond which new ore findings are subject to Government lien. The line as drawn in your office at the time of my visit would have included known ore comprising our Block No. 102.

In regard to the property rights of the additional claims which you felt should be included with our application, we are submitting the data on a separate sheet which may be used as an addendum to our application of August 7, 1953.

I will be pleased to return to Spokane at your convenience if you have questions further pertaining to our application or on the material enclosed, as we wish to expedite our application.

Sincerely yours,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas, Manager

EBD:ac

Enclosures

cc: Mr. V. H. Clarke

Docket

IN REPLY REFER TO:

mdl

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 29 1953

September 28, 1953

WSM

Memorandum

To: W. S. Martin, DMEA

From: T. P. Thayer, USGS

Subject: DMEA-3143, Cobalt-copper-nickel
Calera Mining Company
Blackbird district
Lemhi County, Idaho

The Blackbird district, in which this work would be done, is the principal cobalt-producing area, and has the best potentialities of any in the U. S. Because of this, the U. S. G. S. did rather extensive geochemical prospecting, with very encouraging results. Aside from the possible immediate economic results, the project also cannot help but contribute to long term knowledge on geochemical prospecting.

The project appears to be well planned with definite objectives, and I concur in the Field Team recommendation.

The Field Team's statement on defining ground not to be covered by royalty repayments seems reasonable and enforceable.

T. P. Thayer

T. P. Thayer

Copy retained 400

400

FILE COPY
SURNAME:

Chapman
Martin

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

September 25, 1953

MEMORANDUM

To: Chief Counsel, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Short Form Contract - Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird District
Lemhi County, Idaho

A rough draft of the above-noted contract, together with Maps No. 1, No. 2, No. 3, and No. 4, 9 section maps of diamond drill holes, Annex No. I and No. II, is transmitted with the subject docket for your use in preparing the contract in final form.

In Annex No. I some of the patented claim numbers are omitted and can be supplied in the field. A letter with these numbers was supposedly received, but is now unavailable.

Also attached for your information are detailed costs of the various items, showing how the unit costs were derived.

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

Attachments

cc: Docket
Code 400

TLChapman/ls

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

WSM

September 12, 1953

Mr. Ernest W. Ellis, Acting Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-3142 (Cobalt-Copper)
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Ellis:

In reply to your letter of September 3, 1953, concerning the above-referenced application, you mention that you have no map showing the relative location of properties of Calera Mining Co. and Northfield Mines, Inc.

Until recently, the only map we had showing this was one which was obtained from Calera by Jack Vhay, one of our fieldmen. Much of the information was given to Vhay in confidence by Calera, and we were unable to forward it to you. However, in our recent Field Team memorandum giving cover to our comments on the Calera application, we enclosed a map showing Calera's version of the property situation. This map must still be considered confidential, but Calera has released it to us for whatever use the Government may need to make of it.

not attached when letter received 40?

As you may note from a copy of a recent letter from Mr. Mitchell, which was sent to you, a lawsuit may be pending. Actually, it would appear to us that it would be a good opportunity for a little trading of claims, but we do not feel that it is up to us to take the initiative in such a matter.

Sincerely yours,

Thor H. Kiilsgaard

Thor H. Kiilsgaard
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: USBM(2)
Nickelson

Copy retained

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

Docket
DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
SEP 1953

September 4, 1953

10/8/53

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

From: Field Team, Region II

Subject: Docket DMEA 3142 (cobalt-copper-nickel), Application of Calera Mining Company for exploration in the Blackbird district, Lemhi County, Idaho.

Attached are memoranda from A. E. Weissenborn of the U. S. Geological Survey and V. Z. Johnson of the U. S. Bureau of Mines, concerning the above application. It is recommended that a contract be negotiated with the Calera mining company, using the unit costs suggested by Mr. Johnson.

The Howe Sound Mining Company, through its subsidiary, Calera Mining Company, owns or controls a great deal of mineral ground in the Blackbird area, not all of which would be benefited by the proposed exploration. In the original application, the Brown Bear, St. Louis and Lemhi patented claims, and the Chelan, Chelan No. 1, Chelan No. 2, Chelan No. 3, and Old Gold unpatented claims were included, together with the McKinley, Iowa, Dandy No. 2, Buckeye and Indian Quartz patented claim. After a conference with Mr. E. B. Douglas, Manager of the Calera Mining Company, it was suggested that, in addition to the above, the Blacktail, Blacktail No. 2, Catherine, Anna, Dandy, Idaho and Uncle Sam patented claims and the Chelan 85, Chelan 4, Chelan 7, Chelan 57, and Jaycee unpatented claims should also be included, as they would be benefited by the proposed exploration. In an addendum attached to Mr. Douglas's letter of August 27, these claims, together with their survey number, or book and page number, are included. Also, included is a claim map submitted by Mr. Douglas, which shows the ground controlled by the Calera Mining Company and the ground controlled by other interests. Most of this other ground, which is colored green, is controlled by Northfield Mines, Ltd., although some belongs to other persons. We wish to call to your attention that Mr. Douglas has stated that "This map is confidential but may be used by the proper Government officials in resolving the question of possessory rights of certain grounds in the Little Deer Creek Drainage." The map is of interest in not only showing the relation of the proposed exploration by Calera Mining Company with respect to its holdings, but it also

ON-SITE EXAM.

cleared OC 9-18-53

illustrates the situation with respect to the Merle 3 and 5 claims and the Chelan 77 claims with respect to the Northfield Mining Company, about which there has been considerable discussion. The uncolored areas adjacent to the Merle 2, 4, and 5 claims are claimed by both Calera and Northfield. The Field Team believes that the amended list of claims is sufficient to protect the Government's interest in any ore that might be found as a result of the exploration, and includes all ground that might be reasonably regarded as benefited by the exploration. To make the map easy to read the claims in the amended list have been colored in blue on one copy of the attached claim map. If, in the opinion of the Operating Committee, additional claims are required to protect the Government's interest, we feel certain there would be no difficulty in having them included in the list.

As pointed out in Weissenborn's memorandum, certain ore bodies on the property have already been thoroughly explored and, as they will not be benefited by the DMEA exploration, they should be excluded from royalty payments. We have proposed a relatively simple method of doing this, which we believe is fair to both parties to the contract. Because of the plunge and the dip of the ore bodies, the exclusion can best be done by a system of inclined planes parallel to the dip or the plunge, as has been described in Weissenborn's memorandum and sketched in on the map entitled "Proposed Exploration, Calera Mining Company, Blackbird Division", four copies of which are attached. This method may at first seem rather complex, but we believe that it is actually relatively straightforward.

In a letter dated August 27, Mr. Ellis, Acting Chairman of the Operating Committee, has asked a number of questions. These are answered to the best of our ability below:

1. The surface overlying the 7400 drift and its proposed extension on the St. Louis and Blacktail claims has been tested by soil sampling and has yielded some very high anomalies. Subsequent shallow test pitting on some of the anomalies has uncovered gossan and some rich specimens of cobaltite. These localities are shown in red on the attached map showing the proposed exploration. According to Mr. Douglas, no drilling has been done as yet in this area. Mr. Douglas's original plan did not show any drilling or bulldozing on the Blacktail claims, although he had in mind doing some, as has now been shown on the revised plan of the proposed exploration.

2. Drifting and crosscutting costs.--Following a conference with Field Team members, Mr. Douglas has revised his costs and we now believe that they are reasonable. These are discussed in detail in Johnson's memorandum, which also shows the size of the drift and crosscuts.

3. and 4. This information is given in Johnson's memorandum.

It is hoped that sufficient information has now been supplied so that favorable action can be taken with regard to the granting of a contract.

By Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Chairman
(U. S. Geological Survey)

M. E. Volin

M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosures

cc: USBM (2)
Geologist

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

SEP 14 1953

August 22, 1953

Memorandum

To: DMEA Field Team, Region II

From: A. E. Weissenborn

Subject: Calera Mining Company application for exploration in the Blackbird district, Docket No. DMEA-3143 (cobalt-copper-nickel).

The proposal of the Calera Mining Company for exploration in the Blackbird district was reviewed with Mr. E. B. Douglas, manager, and Mr. Richard Cribbs, geologist, of the Calera Mining Company. Mr. Johnson of the Bureau of Mines was also present. This memorandum will be concerned with only the general and geological aspects of the project. No special field examination was made for this application as Mr. J. S. Vhay of the Geological Survey, who has mapped in the Blackbird district intermittently since 1942, was present during the discussions. Detailed discussion of the mining costs was held later with Mr. Johnson and will be the subject of a separate memorandum.

The exploration work proposed by the Calera Mining Company is based on Vhay's geological mapping plus the results of a geochemical study of soil samples made by H. E. Hawkes and F. C. Canney in 1951 and 1952, supplemented by additional work done by the company. All this work has indicated mineralized zones both parallel to, and possibly on the extension of the known ore bodies. Analysis of soil samples has given extremely encouraging anomalies over these indicated mineralized zones, the anomalies in some places exceeding the anomalies over known ore bodies in the Calera mine. In appraising this proposal, reference should be made to U.S.G.S. Strategic Minerals Investigations, Preliminary Report 3-219, "Cobalt-Copper Deposits of the Blackbird District, Lemhi County, Idaho," by J. S. Vhay, March 1948, and to "Preliminary Report of Geochemical Investigations in the Blackbird District," by H. E. Hawkes and F. C. Canney of the U. S. Geological Survey, unpublished as of this date.

The company's proposal is divided into two parts. One part provides for exploration, north and northwest of the presently known Brown Bear ore bodies, of two possible northwest striking mineralized zones by surface trenching, diamond drilling and underground work extending out from the northwest end of the 7400-foot level. The second

cleared 9-18-53

part of the proposal would explore a northwest trending zone about 800 feet northeast of, and apparently approximately parallel to, the Chicago ore body, again using some surface trenching and diamond drilling, to be followed by underground work on the 7100-foot level.

The first part of the proposal, which might be called the Brown Bear project, would explore:

a) The northwest extension, beyond the north-south Brown Bear zone, of the northwest-trending Chicago ore zone. This is indicated on Vhay's map, gave strong anomalies during the geochemical prospecting, and is further confirmed by a bulldozer trench dug by the company which showed cobaltite, gossan and secondary copper minerals in at least three spots. The attitude, grade, width and continuity of this zone, however, is not known, but can be determined best by underground work following a few diamond drill holes on the surface.

b) A northwest trending zone roughly 800 northeast of a), which is strongly indicated by geochemical anomalies on several northeast traverses and by one or more old prospect pits. Geochemical prospecting suggests that this zone may continue for a thousand feet or more northwest; this area will eventually be explored by the company, but they prudently desire first to "take a bite" near their present workings. Vhay believed that either the garnet schist or the biotite schist is equally favorable as a host rock for the cobalt deposits and that the fault between the two rock types (see map accompanying the application) may have had some effect on the mineralization.

The second part of the proposal (which might be called the Northeast Chicago project) would explore a northwest trending zone which was mapped by Vhay in a few outcrops and in trenches dug by the Bureau of Mines in 1943-44, and which was further confirmed by geochemical anomalies. The crosscut is planned to go somewhat farther than the projected location of this zone, because geochemical anomalies indicated a possible mineralized zone (parallel?) even farther northeast.

The purpose of the trenching is to guide the surface drilling, the results of which should give some control for the location of the drifts. It must be pointed out that most of the trenching will be on or near the flat upland surface, and will have to be rather deep as the soil zone is from 10 to 20 feet deep.

Review of the application indicated that the exploration would benefit ground additional to that included in the proposal, and it was decided that the Anna, Idaho, Blacktail, Blacktail #2, Catherine, Dandy, Jaycee, Chelan No. 4, Chelan No. 7, and Chelan No. 57 should be added to those included in the application. Mr. Douglas has sent us the book and page number of these claims, and also a claim map showing the company property and the area to be included in the application.

Inasmuch as we are dealing here with an operating property having known ore bodies it will be necessary to separate these known ore bodies from those discovered or benefited by the DMEA exploration,

so that royalties may be obtained from any newly discovered ore. Fortunately this separation can be made fairly easily, as there is a break between the Chicago ore body and the parallel mineralized zone 800 feet to the northeast, and there is believed to be a gap between the Brown Bear ore bodies and the mineralized zones to be explored north and northwest of them. The average dip of the Chicago ore zone is 55° northeast, and that of the north-south striking Brown Bear ore bodies is about vertical; the ore bodies in both zones plunge between 30 and 38 degrees north. This is shown by the raises in the longitudinal section submitted with the application, as the raises follow approximately the plunge of the ore bodies. Because of this plunge the Brown Bear ore bodies are known to go down (northerly) below some of the ground to be explored, and these ore bodies will not be benefited in any way by the exploration; any discoveries made by this exploration will therefore plunge down even farther north of the known ore bodies. Because of the known extension of developed ore down the dip and down the plunge, it is necessary to separate the ground to be explored from that already developed by a set of four northerly dipping planes, which are described in detail below. All the ground south and southwest of these planes includes the developed ore and its down-plunge extensions; all the ground north and northeast of these planes will include the ground which will be benefited by the proposed exploration. Royalties should therefore be obtained by the Government from any ore obtained from this ground. There is one small patch of ground east of the Dandy No. 2 claim, which is not owned by the Calera Company, and which might be benefited by discoveries made in the northeast Chicago project (part 2 of the company's proposal). I do not think this should unduly concern us; it might be wise, from the Government's point of view, to include in the contract the proposition that if the Calera Company should acquire this ground (The Queen claim), any ore in it that can be related to discoveries under the DMEA contract, will be subject to the same royalty provisions as the rest of the ground included in the application.

ANNEX II

Detailed description of the four northerly dipping planes which separate known ore, to the south and southwest, from the ground to be benefited by the exploration, to the north and northeast, follows:

Plane #1. Strikes E-W, dips 38° N; intersects the 7400-foot level at coordinate 17290N (coordinates are shown on the company map) and the 7100-foot level at coordinate 17670N; is bounded on the west by vertical planes through the southwest side of the Blacktail claim or the southwest side of the Blacktail #2 if this is included in the contract; is bounded on the east by its intersection with plane #2 at coordinates 17290N, 3340E on the 7400-foot level, and coordinates 17670N, 3360E on the 7100-foot level.

Plane #2. Strikes N. 30° W., dips 55° NE; goes from its intersection with plane #1, at coordinates 17290N, 3340E on the 7400-foot level, and 17670N, 3360E on the 7100-foot level, S. 30° E. to its intersection with plane #3, at coordinates 14910N, 4720E on the 7400-foot level, and 15100N, 4850E on the 7100-foot level.

Plane #3. Strikes N. 77° W., dips 55° NE; goes from its intersection with plane #2 at coordinates 14910N, 4720E. on the 7400-foot level, and 15100N, 4850E on the 7100-foot level, S. 77° E. to the intersection with plane #4, at coordinates 14640N, 5900E on the 7400-foot level, and 14860N, 5890E on the 7100-foot level.

Plane #4. Strikes N. 25° W., dips 75° NE; goes from its intersection with plane #3, at coordinates 14640N, 5900E on the 7400-foot level, and 14860N, 5890E on the 7100-foot level, S. 25° E. to its intersection with a vertical plane through the east side of the Idaho claim.

These four planes are shown approximately on the map by their intersection with the 7400- and 7100-foot levels. The four planes so defined extend down the dip to any depths attained by mining during the period when royalties are due; the coordinates of their intersections with the 7400- and 7100-foot levels are merely given to locate them in space with respect to present mine workings.

Provision has been made for a rather large amount for assaying costs. This is, in our opinion, quite essential. Some of the ore is exceedingly fine grained and in many places it is almost impossible to tell by visual examination whether the material traversed is ore or not. The Calera Mining Company does extensive assaying during development and mining, and we feel very strongly that close assay control is essential to exploration both in drill holes and in the crosscuts and drifts. Without this assay information we are likely to have only some holes in the ground.

In a letter dated April 12 addressed to Mr. Adams, Chief of the Operations Control & Statistics Division, Mr. Vinton H. Clarke, vice-president of the Calera Mining Company, raises the question of the percentage participation which would be equitable, due to the fact that we are dealing with several metals. Interestingly enough, Mr. Douglas points out that appreciable quantities of nickel are now being recovered in the Salt Lake refinery from the Calera ore and that if percentage allowances for nickel, copper and cobalt are averaged arithmetically they come out close to the 82 percent suggested by Mr. Clarke. Mr. Douglas was informed of the DMEA's decision with respect to this problem in connection with the Northfield and Black Pine contracts and was told that this was a matter which would have to be worked out between Mr. Clarke and the DMEA office in Washington.

In summary, I believe that the exploration proposed is very worthwhile, that it has an excellent chance of making a significant increase to the nation's cobalt reserves, that it can legitimately be classed as exploration, and I recommend it highly. It was pointed out to Mr. Douglas that the costs which he had in his application were somewhat higher than were usually allowed in DMEA exploration under

similar conditions. This matter was discussed at considerable length in a separate interview with the Bureau of Mines engineers. As a result of this discussion, Mr. Douglas, I am informed, has submitted revised costs which will be the subject of a separate memorandum by Bureau of Mines personnel.

Distribution:
DMEA (Orig. & 3)
USBM (2)
USGS(SRO)
Docket

August 27, 1953

Mr. Tom Howard, Assistant to Director
Mining Division, Region II
United States Bureau of Mines
1201 North Division Street
Spokane 2, Washington

Dear Mr. Howard:

Pursuant to my discussion with you and Mr. Johnson on August 18, 1953 regarding the cost of drifting and crosscutting as set forth in this Company's Application for Aid, August 7, 1953, we are pleased to submit the enclosed revised cost estimate.

Our original calculation was based on a drift and crosscut section of 6 x 8½ feet, while these revised figures are for a 5 x 7 foot section, which we understand is allowable under your regulations.

Since our meeting of August 18, 1953, Mr. Al Nichols, of Nichols and Thompson Diamond Drilling Company, called at this office, and you will note that subsequent to our discussion, we have amended our surface diamond drilling costs to include 1,700 feet of reaming and cementing, which we believe will be necessary in this locality.

Our Accounting Department concurs with your suggestion that a unit price (short form) basis is by far the better way to handle the proposed contract. Otherwise, an entirely separate list of accounts and books must be kept, which will entail much extra office work. Therefore, we will be pleased if you will consider our estimates on the fixed price basis. In setting forth these costs, we have endeavored to detail them so that all figures can be readily checked by you. In spite of our best efforts, you may have further questions. In this case, I will

CALERA MINING COMPANY

BLACKBIRD DIVISION

COBALT, IDAHO

August 27, 1953

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 4, Washington

Dear Mr. Weissenborn:

During our discussion on August 18, 1953 regarding this Company's application for a D.M.E.A. loan, you suggested that certain additional information would expedite the handling of our application. Accordingly, we are enclosing the following:

(1) Claim Map of Calera Mining Company's holdings in areas affected by proposed exploration programs.

(2) Revised generalized plan showing boundary lines beyond which new ore findings are subject to Government lien.

(3) Addendum to Question 3-a of Calera Mining Company's Application for Aid pursuant to D.M.E.A. Order No. 1.

In regard to the claim map which we are furnishing, we wish to point out that this map shows only that portion of the Company's locations which may benefit by the proposed exploration, including our holdings which are adjacent to Northfield Mines, Incorporated. This map is confidential, but may be used by the proper Government officials in resolving the question of possessary rights of certain ground in the Little Deer Creek drainage.

In regard to the revised generalized plan which we are enclosing, we wish to call to your attention that we have changed the south end of the boundary line behind which new ore findings are subject to Government lien. The line as drawn in your office at the time of my visit would have included known ore comprising our Block No. 102.

In regard to the property rights of the additional claims which you felt should be included with our application, we are submitting the data on a separate sheet which may be used as an addendum to our application of August 7, 1953.

I will be pleased to return to Spokane at your convenience if you have questions further pertaining to our application or on the material enclosed, as we wish to expedite our application.

Sincerely yours,

CALERA MINING COMPANY
BLACKBIRD DIVISION

E. B. Douglas, Manager

EBD:ac

Enclosures

cc: Mr. V. H. Clarke

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

1201 N. Division St.
Spokane 2, Washington
September 2, 1953

MEMORANDUM

To: DMEA Field Team, Region II

From: V. Z. Johnson, Mining Engineer, Bureau of Mines

Subject: Review of cost estimate, Calera Mining Co., Blackbird mine, Lemhi County, Idaho, Docket No. DMEA 3143 (cobalt-copper)

Following a discussion on August 18, 1953, of costs submitted with the subject application a detailed study was made by Mr. E. B. Douglas, manager, Calera Mining Co. As a result, a revised cost estimate, copies of which are attached, was submitted on August 31. The new figures are considered realistic and in line with costs for like work on other DMEA projects currently active in Region II.

It is recommended that a "short form" contract based on these revised costs, as tabulated below, be favorably considered.

Agreed Unit Costs

Surface Trenching 864 hours of D6 or D7 bulldozer operation @ $11.45/hr. (includes supervision, surveying, sampling and geologic mapping)	$ 9,890.
Surface Diamond Drilling 8700 feet @ $7.28/ft. (includes core boxes, engineering, geology, etc. and an estimated 1700 ft. of reaming	63,330.
Underground Diamond Drilling 10,500 feet @ $3.23/ft. (includes engineering, geology, core boxes, etc.	33,970.
Drift and Crosscut 5'x7' 6000 feet (untimbered) @ $36.65/ft.	219,900.
Timber Drifts and Crosscuts 6000 feet @ $14.95/ft. ($7.52 Labor 5.94 Supplies 1.49 Taxes & General)	89,700.
Assays 10,500 Samples for Co and Cu @ $3.00/assay	31,500.
Total agreed unit costs	$448,290.

Discussion of Costs

Surface Trenching.

The rate of $11.45/hr. is near that generally charged for a bulldozer of the D6 to D7 size, fully operated; in addition, the applicant proposes to supply the needed engineering and geologic supervision necessary to best direct this phase of the project and map all features of interest.

Surface Diamond Drilling. (AX size)

The agreed unit cost of $7.28/ft. for diamond drilling includes moving in, reaming and cementing, sampling, logging, and core boxes at a location that is heavily wooded on steep terrain.

Underground Diamond Drilling. (AX size)

The agreed unit cost of $3.23/ft. actually covers little more than labor. In addition, the applicant will provide drill stations, geologic supervision, and core boxes.

Drifts and Crosscuts.

The estimated cost of drifting and crosscutting is based on an assumed advance of 15 feet per day or completion of the project in 400 working days, which the applicant states is better progress than is being obtained at present on similar work in the mine. In order to make 15 feet per day the applicant will have to work at least 3 headings and when timber is required a 2 or 3 shift per day operation may be necessary.

The proposed unit price of $36.65/ft. appears reasonable under the circumstances. At present the Defense Minerals Exploration Administration is participating in drifting and crosscutting at $31.20/ft. for untimbered headings on a project (Docket No. DMEA 2502) where the tram has not exceeded 500 feet. The Operator complains that the agreed unit is inadequate.

Applicant proposes driving headings in zones of shearing beyond existing openings where the tram now approaches 600 feet and will total nearly 3000 feet before the project is completed. Ventilation must be given immediate attention and maintained during the project.

There is a probability that both ore and waste will be removed from two or more headings concurrently, and a means of separation must be provided.

It should be noted also that the requirements for sampling and geological services and engineering will be greater for this project than for most DMEA projects in the Region.

Items such as compressor depreciation, snow removal, and boarding house loss have not been included in the estimate submitted by the applicant, although they are current operating costs and with present reduction of forces to about 40 men underground they should be prorated to a proposed project. During winter months the road from Cobalt to Highway 92, a distance of 45 miles, is maintained by the applicant.

There is a tendency to ignore the labor included by this applicant under the heading of Tramming, such as Nippers, Trackman, Dumpman, and Handling Supplies - Surface. These are very real costs and should be considered. As the proposed project will require about half the underground labor force, these services must be prorated.

It is believed the applicant has made reasonable preparations for an efficient operation with the proposed agreed unit cost of $36.65/ft. for untimbered drift and crosscut.

Timbering of Drift and Crosscuts

The attached detail of estimated costs by the applicant would provide $52.80/ft. for timbered openings when Payroll Taxes, Liability Insurance, General, and Equipment Depreciation are included, and the cost of assaying is removed and made a separate item. Therefore, the allowance for timbering of drift and crosscuts would be $14.95/ft. including $7.52/ft. for labor, $5.94/ft. for supplies; and $1.49/ft. for payroll taxes, liability insurance, and general.

The additional labor is distributed as $4.93/ft. for timbermen, helpers and framer, $1.29/ft. extra breaking labor, $1.29/ft. additional tramming and nipping, $0.12/ft. supply handling, etc. These labor provisions appear reasonable and possibly not altogether adequate to maintain support for 3000 to 6000 feet of underground openings in schistose material.

The applicant's detail of timbering supplies includes 3-inch lagging at $4.20/ft. timbered advance. Tight lagging of sides and back is necessary to keep fines from the track and drainage ditches. The use of native poles, slabs or 2-inch lagging leads to considerable replacement in this district. Applicant's 60 board feet of lagging per foot of advance will not be adequate in extremely heavy ground that would require a sheathing cap and/or spiling.

A project on an adjoining property (Docket No. DMEA 2436, Northfield Mines, Inc.) where drift and crosscut faces were within 500 feet of the portal, had allowable costs that totaled about $67.40/ft. while exploring a sheared zone in mica schist. Although there was some inefficiency at the project referred to, it is believed that sufficient

timbering to keep the openings passable during a 2-year period would cost over $70/ft. for segments of drift or crosscut in a sheared zone. Applicant's proposed agreed unit cost of $51.60/ft. for timbered drift and crosscut seems reasonable for the conditions which probably will be encountered. Our experience with Northfield indicates that provision should be made to timber the entire advance.

Assays

The nature of the minerals in the proposed area of examination are not adaptable to visual recognition as ore or waste. The applicant employs several samplers for mine operation, and it appears a large number of samples will be needed to direct and evaluate this project. The number of samples required appears to be 10,500, and $3.00 for an analysis (Co $2; Cu $1) is less than that charged by custom assayers in the Region.

Conclusions

It is believed that the applicant's details of cost are adequate for preparing a proposed contract and that costs are generally reasonable for the units of work.

V. Z. Johnson

Orig. & 3 cys - Wash.
USGS (2)
DMEA
M/D
VZJ/he

DEPARTMENT OF THE INTERIOR
Defense ... Mobilization
SEP 1 1 1953

TRENCHING AND DIAMOND DRILLING

	UNIT PRICE PER FT. OR PER HR.	LABOR	SUPPLIES	TOTAL
SURFACE TRENCHING				
Cat Rental - 864 Hours D-7 fully operated	$ 10.00	$	$	$ 8,640.00
Sampling & Geological Mapping - 350 Hrs.	2.50	875.00		875.00
Surveying & Supervision - 150 Hours	2.50	375.00		375.00
			11.45/hr	$ 9,890.00
SURFACE DIAMOND DRILLING (AX SIZE)				
*Contract Drilling - 8,700 Ft. @ $6.50				$ 56,550.00
*Contract Reaming & Cementing - 1,700 Ft. @ $2.50				4,250.00
Sampling - 440 Hours	2.50	1,100.00		1,100.00
Logging Cores - 440 Hours	2.50	1,100.00		1,100.00
Surveying - 50 Hours	2.50	125.00		125.00
Core Boxes - 25 Each ? 7.26	5.00		125.00	125.00
Sample Sacks - 200 Each ? 8.95	.40		80.00	80.00
Assaying - 2,900 Each ? 1.59	3.00 (Co $2.00; Cu $1.00)			8,700.00
1,700 Sludge	3.00			5,100.00
				$ 77,130.00
UNDERGROUND DIAMOND DRILLING AX SIZE HOLES				
Company Unit Price - 10,500 Ft. @ $3.00				$ 31,500.00
Logging Cores				
Hole Layout, Etc. - 840 Hours @ $2.50 3.22 4.29		2,100.00		2,100.00
Core Boxes - 50 Each @ $5.00 1.29		5,675.00	250.00	[illegible]
Sample Sacks - 300 Each @ $.40			120.00	[illegible]
Assaying - 3,500 Each @ $3.00 (Co $2.00; Cu $1.00)				[illegible]
				$ [illegible]

*Work to be done by outside Contractor.

15'/day

V

DRIFTS & CROSSCUTS 5' x 7' - 6,000 FT. TIMBERED

	LABOR		SUPPLIES		TOTAL
	$ 34,920.00		$		$
	34,920.00				
ROCK BREAKING					
Miner	2,908.00				
Drives			18,960.00	3.16	9,392.00
& Bits	1,892.00	0315	7,500.00	1.26	
ck, Etc.			9,000.00	1.50	
ir and Water Lines			13,800.00	2.30	
Air & Water Hose & Vent Pipe)					
Miscellaneous			9,120.00	1.52	3,000.00 0.50
Drill Repair	1,260.00	0.21	2,340.00	0.39	
Compressed Air	4,728.00	0.786	7,272.00	1.21	12,000.00 2.00
TIMBERING					
Timberman	11,640.00	1.94			
Timber Framer	6,304.00	1.05			
Helpers	11,640.00	1.94			
Timber 7, SIZE TIMBER. COST PER 1,000			35,640.00	5.94	
TRAMMING					
Trammers)	23,280.00	3.86			
Hippers)					
Trackman	3,152.00	0.525			
Dumpman	2,364.00				
Mucking Machine Repair	428.00	0.071	480.00	0.071	
Battery Repair)					
Locomotive Repair)			1,062.00	0.177	
Car Repairs	360.00		284.00		
Hauling Supplies - Surface	2,364.00	0.394			
no TIES.					
GENERAL					
Small Tools			1,200.00	0.20	
Miners' Lamps	788.00	0.131	296.00	0.049	
Electricians	1,576.00	0.263			
Greasing and Oil	2,364.00	0.394	1,200.00	0.20	
Ditch and Cleanup	1,576.00	0.163			
Safety and Sanitation			400.00	0.067	
Supervision (Jigger Boss & Foreman	7,768.00	1.295			
Engineering and Geology	4,000.00	0.666			
Power (Elect. Fans & Mancha)			640.00	0.107	
Fan & Battery Charger Installations & Lines			800.00	0.133	
Assaying 2400 @ $3.00 ($2.00 Co; $1.00 Cu)					7,200.00
	$160,232.00		$109,996.00		$277,426.00

COST /FT. LABOR	$ 26.71
COST /FT. SUPPLIES	18.33
COST /FT. ASSAYING	1.20
TOTAL	$ 46.24
	+ 1.27
	47.51

25 - 5' rounds = 125'
600 / 140 = 4 rounds = 20'
25/20 = 1.25 Weighting

T I M B E R E D

Age 1½ %		$ 2,713.95	$	$
nt Insurance 2½ %		4,704.18		
s Compensation	321	5,384.50 (75% of total money)		12,802.63
PAY ROLL				
RANCE				
Insurance .0226		408.90		
l Welfare Insurance $5.76/emp/mo	1.31	2,167.75		
o Insurance $22/man/year		336.49		
				$ 2,913.14
GENERAL				
Accounting		4,032.00	0.672 +	
Office Stenographers		4,032.00	0.672	
Purchasing, Etc.				
Holiday Pay	6 paid holidays 8 da/man/year vacation	5,631.95	0.938	
Vacation Pay				
Bus Transportation $.23/man shift		2,334.25		
				$ 16,030.20
AMORTIZATION TUNNEL EQUIPMENT				
6,000 Ft. @ $1.27/Ft.		7,620.00		
				$ 7,620.00
				$ 39,365.97

SURFACE TRENCHING	9,890.00
SURFACE DIAMOND DRILLING	77,130.00
UNDERGROUND DIAMOND DRILLING	44,470.00
DRIFTING AND CROSSCUTTING	277,426.00
TAXES AND INSURANCE	15,715.77
GENERAL	16,030.20
AMORTIZATION	7,620.00
	$448,281.97

$52.80

UNTIMBERED

DRIFTS & CROSSCUTS 5' x 7' FOR 6,000 FEET

	LABOR	SUPPLIES	TOTAL
	$ 31,040.00	$	$
	31,040.00		
	2,908.00		
ROCK BREAK			
Mis		18,960.00	
Bits	1,892.00	7,500.00	
Etc.		9,000.00	
nd Water Lines		13,800.00	
& Water Hose & Vent Pipe)			
ecellaneous		9,120.00	
rill Repair	1,260.00	2,340.00	
Compressed Air	4,728.00	7,272.00	= $2.00/ft.
TRAMMING			
Trammers)	15,520.00		
Nippers)			
Trackman	3,152.00		
Dumpman	2,364.00		
Mucking Machine Repair	428.00	480.00	
Battery Repair)			
Locomotive Repair)		1,062.00	
Car Repair	360.00	284.00	
Handling Supplies - Surface	1,576.00		
Ties (Timber Framer)	788.00		
GENERAL			
Small Tools		1,200.00	
Miners' Lamps	788.00	296.00	
Electricians	1,576.00		
Greasing and Oil	2,364.00	1,200.00	
Ditch and Cleanup	1,576.00		
Safety and Sanitation		400.00	
Supervision (Jigger Boss & Foreman)	7,768.00		
Engineering and Geology	4,000.00		
Power (Elect. Fans & Mancha)		640.00	
Fan & Battery Charger Installation		800.00	
Assaying 2400 @ $3.00 ($2.00 Ag; $1.00 Cu)			7,200.00
	$115,128.00	$ 74,354.00	$196,682.00
COST /FT. LABOR	$ 19.19		
COST /FT. SUPPLIES	12.39		
COST / FT. ASSAYING	1.20		
TOTAL	$ 32.78		
	+ 1.27		
	34.05		

UNCLASSIFIED

PAY ROLL TAXES		
Federal Old Age	$ 1,949.27	$
Unemployment Insurance	3,378.57	
Workmen's Compensation	3,858.54	
		$ 9,186.28
LIABILITY INSURANCE		
Liability Insurance	291.24	
Health and Welfare	1,635.56	
Group Life Insurance	260.20	
		$ 2,187.00
GENERAL		
Accounting ½ accountant 16 mo	4,032.00	
Office Stenographers	4,032.00	
Purchasing, Etc.		
Holiday Pay	4,204.66	
Vacation Pay		
Bus Transportation	1,734.25	
		$ 14,003.11
AMORTIZATION TUNNEL EQUIPMENT		
3,000 Ft. @ $1.27/Ft.	7,620.00	
		$ 7,620.00
		$ 32,996.39

SURFACE TRENCHING	9,890.00
SURFACE DRAINED DRAINS	77,120.00
[illegible]	14,470.00
DRIFTING AND CROSSCUTTING	196,682.00
TAXES AND INSURANCE	11,373.28
GENERAL	14,003.11
AMORTIZATION	7,620.00
	$363,160.39

6

DRIFTING SUPPLIES FOR 6,000 FEET, 8' x 7' TIMBERED

DRIFTS	COST/FOOT	BASIS OF FIGURING	COST/DAY	TOTAL COST
EXPLOSIVES				
Powder	$ 1.85	1 Box/5 Ft. @ $9.:	$	$
Caps	.85	24/5 Ft. @ $.1772		
Leadwire	.40	2#/5 Ft. @ $1.00/#		
Bl. Line	.05			
Miscellaneous	.01			
Total Explosives	$ 3.16			$ 18,960.00
TIMBER				
Round Frame Sets	$ 1.64	2 Posts @ $3.10) 5' 3" 1 Cap @ $2.50) Sets		
3 x R Lagging 3"	4.20	60 B.M./Ft. @ $.07		
Blocking & Spikes	.10	Estimates 7 B.M.		
Total Timber	$ 5.94			$ 35,640.00
Track	$ 1.07	$10.70/20 Ft. Lengths		
Splice bars, spikes, & bolts	.10	Splice bars 24¢ each, bolts 15¢, spikes 10¢/#		
Switches & Crossover ($300.00)	.05			
Ties	.28	4" x 6" x 16' each 8 Ft.		
Air Lines	1.53	4" Line & Fittings		
Water Lines	.77	2" Line & Fittings		
Air Hose	.19	1,000 Ft. @ 98¢ & Fittings		
Water Hose	.07	1,000 Ft. @ 32¢ & Fittings		
Vent Pipe	1.25	12-inch - Fabric		
Vent Miscellaneous	.01	9-Gauge Wire		
Total	$ 5.32			$ 31,920.00
Lamp Rental		17 @ $1.09/Month x 16 Months		$ 296.48
Grease and Oil			3.00	1,200.00
Safety Supplies & Sanitation			1.00	400.00
Power Lines			1.00	400.00
Tools			3.00	1,200.00
Electrical (Fan & Battery Charger Installation)				400.00
Power - Air			18.18	7,273.00
Power - Electric Fans & Mancha			1.00	640.00
Drill Steel & Bits			1.25	7,500.00
Rock Drill Supplies				2,340.00
Muck Machine Repairs				480.00
Locomotive & Battery Repairs				1,060.00
Car Repairs				264.00
Total				$ 23,474.48
SUPPLIES/FOOT	$18.33			
		TOTAL		$ 109,294.48

DRIFTS	15 FT/DAY TIMBERED 1 FT/MS UNDERGROUND MH/DAY	DOLLARS /DAY	DOLLARS/ 400 DAYS	15 FT/DAY UNTIMBERED 1.5 FT/MS UNDERGROUND MH/DAY	DOLLARS /DAY	DOLLARS/ 400 DAYS
LABOR						
ROCKBREAKING						
Miners	36	$ 87.30	$ 34,920.00	32	$ 77.60	$ 31,040.00
Muckers (15 men)	36	87.30	34,920.00	32	77.60	31,040.00
Powdermen	3	7.27	2,908.00	3	7.27	2,908.00
Compressor Man	6	11.82	4,728.00	6	11.82	4,728.00
TIMBERING						
Timbermen	12	29.10	11,640.00			
Timber Framer (3 timbermen)	8	15.76	6,304.00	1	1.97	788.00
Helpers	12	29.10	11,640.00			
HAULING						
Trammers - Rock Disposal	24	58.20	23,280.00	16	38.80	15,520.00
Nippers						
Mucking Machine Operator						
Trackmen	4	7.88	3,152.00	4	7.88	3,152.00
Dumpman	3 surface	5.91	2,364.00	3	5.91	2,364.00
Handling Supplies - Surface	3	5.91	2,364.00	2	3.94	1,576.00
GENERAL						
Air and Water Lines						
Shop Labor (Welding, Car Repair)	1 - surface	1.97	788.00	1	1.97	788.00
Lampman	1 surface	1.97	788.00	1	1.97	788.00
Electricians (Battery Maint.)	2 surface	3.94	1,576.00	2	3.94	1,576.00
Cranking	3 surface	5.91	2,364.00	3	5.91	2,364.00
Ditch and Cleanup	2 surface	3.94	1,576.00	2	3.94	1,576.00
Drill Doctor and Steel Shop	4 surface	7.88	3,152.00	4	7.88	3,152.00
SUPERVISION						
Jigger Boss (1 man)	8	16.92	6,768.00	8	16.92	6,768.00
Mine Foreman	1	2.50	1,000.00	1	2.50	1,000.00
TECHNICAL						
Engineering	1 surface	2.50	1,000.00	1	2.50	1,000.00
Geology	3 surface	7.50	3,000.00	3	7.50	3,000.00
	173	$400.58	$ 160,232.00	125	$287.82	$ 115,128.00
DERIVED RATE $2.425/hr.	173 ÷ 15 = 11.53 MH/ Ft.			125 ÷ 15 = 8.33 MH/Ft.		
SURFACE RATE $1.97/hr.	400.58 ÷ 173 = $2.315/MH			287.82 ÷ 125 = $2.30/MH		
	11.53 MH x $2.315 = $25.54/Ft.			8.33 MH x $2.30 = $19.2[illegible]		

EQUIPMENT TO BE USED 5 x 7 DRIFT

THREE HEADINGS OPERATING

1.	1 - 5-Ton Plymouth Locomotive	$ 7,287.05
2.	2 Eimco 12B Mucking Machines	5,674.40
3.	15 C. S. Card - 20 Cu. Ft. Rocker Dump Cars	3,660.00
4.	2 Mancha 1½ Ton Locomotives	6,690.96
5.	4 Batteries for Above	5,566.80
6.	2 Charging Panels	1,821.96
7.	2 A.M.D. Car Transfers	900.00
8.	1 Buffalo Forge Blower 15 H.P. (or Equivalent)	375.00
9.	1 Clarage Blower 7½ H.P. (or Equivalent)	275.00
10.	Starting Equipment for Blowers	175.00
11.	2 Timber Trucks	236.78
12.	4 Jackleg Type Pusher Drills @ $505.00	2,020.00
13.	4 Line Oilers @ $17.54	70.16
14.	1 R48 Stoper @ $670.00	670.00
15.	1 Water Pump - C. P. Co.	153.02
16.	1 Track Jack	50.00
17.	1 Rail Bender	40.00
	TOTAL	$ 35,666.13*

MARKET VALUE ASSUMED TO BE 80% = $ 28,532.90

6,000 Feet Drift @ 15 Ft./Day

400 Work Days @ 25/ Days/Month

16 Months Work

$28,532.90 ÷ 60 = $475.54/Month Depreciation

$475.54 ÷ 375 Ft. = $1.27/Foot

*Compressor Amortization is not included.

FILE COPY
SURNAME:

400

Rutledge
Ellis
Selfridge

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

SEP 3 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143 - Cobalt-Copper
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Weissenborn:

In reviewing the referenced application for exploration assistance and the data contained in Docket No. DMEA 2436, Northfield Mines, we find that we have no map showing the relative location of the two properties.

If such a map is available showing the deposits and the claims held by the two companies, we would appreciate receiving a copy.

Sincerely yours,

Ernest Wm. Ellis
EST

Chairman, Operating Committee

APPROVED:

M. H. Kline EST
Member, Bureau of Mines

A. R. Mitchell Jr. EST
Member, Geological Survey

FARutledge:foc
cc: Docket
Code 400
FT. Reg. 2
Operating Comm.
Adm. Reading File
H. W. Davis, USBM
Philip Guild, USGS

R.C.H.
9-3-53

FILE COPY
SURNAME:

RLC
Rutledge
Selfridge

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

AUG 27 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Weissenborn:

Reference is made to the subject docket. It appears desirable that a field examination be made of this property, and it is suggested that the field report include notes on the following:

(1) The south-west 7400 drift is in an area in which no surface work is proposed. As this is directly northwest of the Brown Bear orebody area, it may have already been drilled, and we would appreciate any data concerning this work.

(2) We recognize that the drifting and crosscutting costs are entirely too high to be approved for an exploration project, and if we write a contract will cut them substantially. We will appreciate any data you can give us concerning the proportion of the estimated costs that is essential to exploration and the proportion that is merely desirable as part of the mine development program.

(3) What is the size of the proposed drifts and crosscuts?

(4) What is the size of the diamond drill holes?

Enclosed find two copies each of memoranda from the Commodity Divisions of the U. S. Geological Survey and the U. S. Bureau of Mines.

Sincerely yours,

Ernest Wm. Ems
857

ACTING Chairman, Operating Committee

cc: DOCKET
FIELD TEAM, REG. II
ADM. READING FILE
CODE 400
H. W. DAVIS, USBM
PHILIP GUILD, USGS
Enclosures

cc: OPERATING COMMITTEE

TLCHAPMAN/ls
8/21/53

APPROVED:

M. H. Kline 857
Member, Bureau of Mines

D. M. Larrabee 857
Member, Geological Survey

HHK
8-27-53

FILE COPY
SURNAME:

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

AUG 27 1953

Mr. Vinton H. Clarke, Vice President
Calera Mining Company
730 Fifth Avenue
New York 19, New York

Re: Docket No. DMEA 3143, Cobalt-Copper
Calera Mining Company
Blackbird property
Lemhi County, Idaho

Dear Mr. Clarke:

Your application for exploration assistance on the subject property has been carefully reviewed and has been referred to Mr. A. T. Weissenborn, Executive Officer, DMEA Field Team, Region II, South 157 Howard Street, Spokane 4, Washington, for a field examination.

The Regional Office will contact you at an early date in regard to the examination of your property. Any assistance you can render the members of the field team in the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: DOCKET
FIELD TEAM, REG. II
ADM. READ. FILE
CODE 400
OPER. COMM.
H. W. DAVIS, USBM
PHILIP GUILD, USGS

TLChapman/ls
8/21/53

8-27-53

IN REPLY REFER TO:

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

August 20, 1953

Memorandum

WSM

To: Mr. W. S. Martin, DMEA

From: Martha Carr, USGS

Subject: Exploration application $492,790 DMEA-3143 Cobalt principally; nickel and copper in smaller quantity.
Calera Mining Company
Blackbird Division
730 Fifth Ave.,
New York 19, N. Y.

Property: Brown Bear, St. Louis, and Lemhi, all patented claims, and parts of the Chelan, Chelan No. 1, Chelan No. 2, Chelan No. 3, and the Old Gold, all unpatented claims. The Brown Bear, St. Louis, and Lemhi claims are in sec. 21, T. 21 N., R. 18 E., Lemhi County, Idaho. The locations of the unpatented claims are recorded in the Books of Mining Claims as noted in the exploration application. The property is known as the Blackbird Mine.

Proposal: The applicant wishes to determine more accurately the potential of promising areas adjacent to his developed sections. This exploratory work would be on claims adjacent to other claims owned by this Company, which are now in production. He plans to explore for cobalt principally, also for nickel and copper in smaller amounts.

The applicant believes that the two areas which offer the greatest possibility of finding additional ore are: first, that area north of his present Brown Bear workings; and second, a parallel zone approximately 800-1,000 feet to the hanging wall, or northeast of his Chicago Ore Body.

In exploring the area north of Brown Bear Ore Body, the applicant proposes four steps, the findings in each successive step of which would determine the procedure of subsequent steps. The proposed steps are:

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(1) Surface trenching at 300-foot intervals along the strike of the favorable zone, as has been indicated by geochemical prospecting.

(2) Surface diamond drilling from the bulldozer trenches according to mineralized exposures.

(3) Extension of the present 7400 Level North Drift 4,000 feet in a northerly direction, the exact location of which would be determined by the surface diamond drilling. The proposed location of the exploration drifts and crosscuts are shown on the applicant's accompanying maps.

(4) Underground diamond drilling at 50 to 100-foot intervals to outline the ore zones, and to determine the grade of same.

In exploring the parallel zone to the hanging wall of the Chicago Ore Body, the applicant feels that the four above-mentioned steps are likewise desirable. This area, like the one to the north, has been shown to be favorable by preliminary trenching, mapping, and geochemical prospecting. The applicant proposes:

(1) Further surface trenching to determine the extent, strike, dip and plunge of the surface exposures.

(2) Surface diamond drilling to further delineate the mineralized zones for projection to the underground project.

(3) Crosscutting from the central crosscut of the Chicago Ore Body on the 7100 level an estimated distance of 1,200 feet, then drifting approximately 800 feet along the ore zone.

(4) Underground diamond drilling would follow the drifting to outline ore pods and to determine grade of ore found.

The work would start within 14 days and be completed within 24 months from the date of an exploration project contract.

Geology: The general area of the applicant's property--the Blackbird district--is underlain by metamorphosed sedimentary rocks of the Yellowjacket formation of the Belt series (pre-Cambrian) which consists principally of quartzite, quartz-biotite granulite, biotite schist and phyllite. The northern part of the district is cut by granitic rocks of the Idaho batholith (Cretaceous), and the Yellowjacket rocks are cut by acid porphyry dikes and metamorphosed basic rocks. Faults have divided the sedimentary rocks into three, roughly north-south blocks. The center block, the Blackbird, appears to have been subjected to greatest metamorphism--with the development of relatively tight folds and widespread schistosity. The rocks of the blocks on either side, the Lookout block to the west and the Haynes-Stellite block to the east, are in more open folds and in general nonschistose, with the exception of the north end of the western block, where schistose rocks are cut by north-dipping thrust faults.

The mineralization, most of which is in the central block, was controlled mainly by the shear zones but in part by the north-plunging folds. The deposits, formed by replacement, are veins and lenses. The most important mineralized zones that cut the Blackbird structural block are those dipping moderately northeast and striking northwest and those dipping steeply and striking north and northeast. North-dipping thrust faults of west to northwest strike and a number of high-angle faults also cut the Blackbird block. The principal ore minerals which are in a gangue of quartz, biotite, tourmaline, ankerite, and muscovite are cobaltite and chalcopyrite. They are associated with pyrite and pyrrhotite. Analyses of cobaltite and cobalt ores from various localities in the Blackbird district in 1943 showed 30.62 percent Co, .49 percent Cu and .22 percent Ni.

All accessible workings in the district have been briefly described in USGS Strategic Minerals Investigations Preliminary Report 3-219, Cobalt-copper deposits of the Blackbird district, Lemhi County, Idaho, by J. S. Vhay, 1948. Information on the district is also contained in USBM R.I. 4012, Blackbird cobalt deposits, Lemhi Co., Idaho, by G. C. Reed and J. A. Herdlick, 1947, and R. I. 4279, Concentration of copper-cobalt ores from the Blackbird district, Lemhi Co., Idaho, by H. R. Wells, W. G. Sandell, H. D. Snedden, and T. F. Mitchell, 1948.

Recommendation: The applicant's property appears to be promising, and it is recommended that the application be referred to the field team for confirmation. Preliminary Report 3-219 states that although the district has had very little production to the present (1948), it is believed that a large tonnage of copper-cobalt ore exists in the district which should permit mining to be continued over a long period. Also R. I. 4012 states that the district has long been recognized as a potential source of cobalt and copper. The applicant has already done considerable exploratory work and has estimated ore reserves, as of May 1, 1952 in developed areas to be 1,764,330 tons, having an average assay of 0.70 percent cobalt and 1.41 percent copper, of which 720,410 tons is positive normal ore, 86,740 tons is positive oxidized ore, 919,620 tons is probable normal ore, and 37,560 tons is probable oxidized ore. The applicant's belief that additional reserves will be established in areas adjacent to those now being developed and his proposals for exploration appear to be well founded. The information he has furnished and that otherwise available would indicate that the project should be considered favorably if the field team concurs.

Martha Carr

Martha Carr

Cobalt

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

August 18, 1953

Memorandum

WSM

To: W. S. Martin, Defense Minerals Exploration Administration

From: H. W. Davis, Bureau of Mines

Subject: Application of Calera Mining Co. for exploration loan of $492,790. DMEA-3143, Blackbird property, Lemhi County, Idaho

The proposed exploration is on claims adjacent to other claims owned by the company which are now being mined. Therefore, the probability of finding additional mineralized ore bodies appears to be good. However, it is recommended that the application be referred to the field team to determine whether or not the areas proposed to be explored offer the best possibilities of finding additional ore.

It is also recommended that the loan for drifting and crosscutting be deferred until it is determined whether the drilling indicates favorable results.

In connection with this application it might be appropriate to consider that the concentrate being produced from the ore being mined contains some nickel, which is not removed by the chemical process now being used for refining. As a consequence, the product now produced at Calera's refinery at Garfield, Utah, contains about 94 percent cobalt and 4.5 percent nickel.

Finally, inasmuch as the ore now being mined contains values in addition to cobalt, any loan should be made on an appropriate matching basis.

H. W. Davis

H. W. Davis

Copy retained 400

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

August 14, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number DMEA-3143

There is listed below the assigned docket number to an application recently received from Region II.

DMEA - Calera Mining Company

ROBERT E. ADAMS

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

P.S. This application was sent to you by applicant.

Mr. Vinton H. Clarke
Calera Mining Company
730 Fifth Avenue
New York 19, New York

August 14, 1953
Subject: EDMEA-3143
Re: Exploration Assistance
Blackbird Mine

My dear Mr. Clarke:

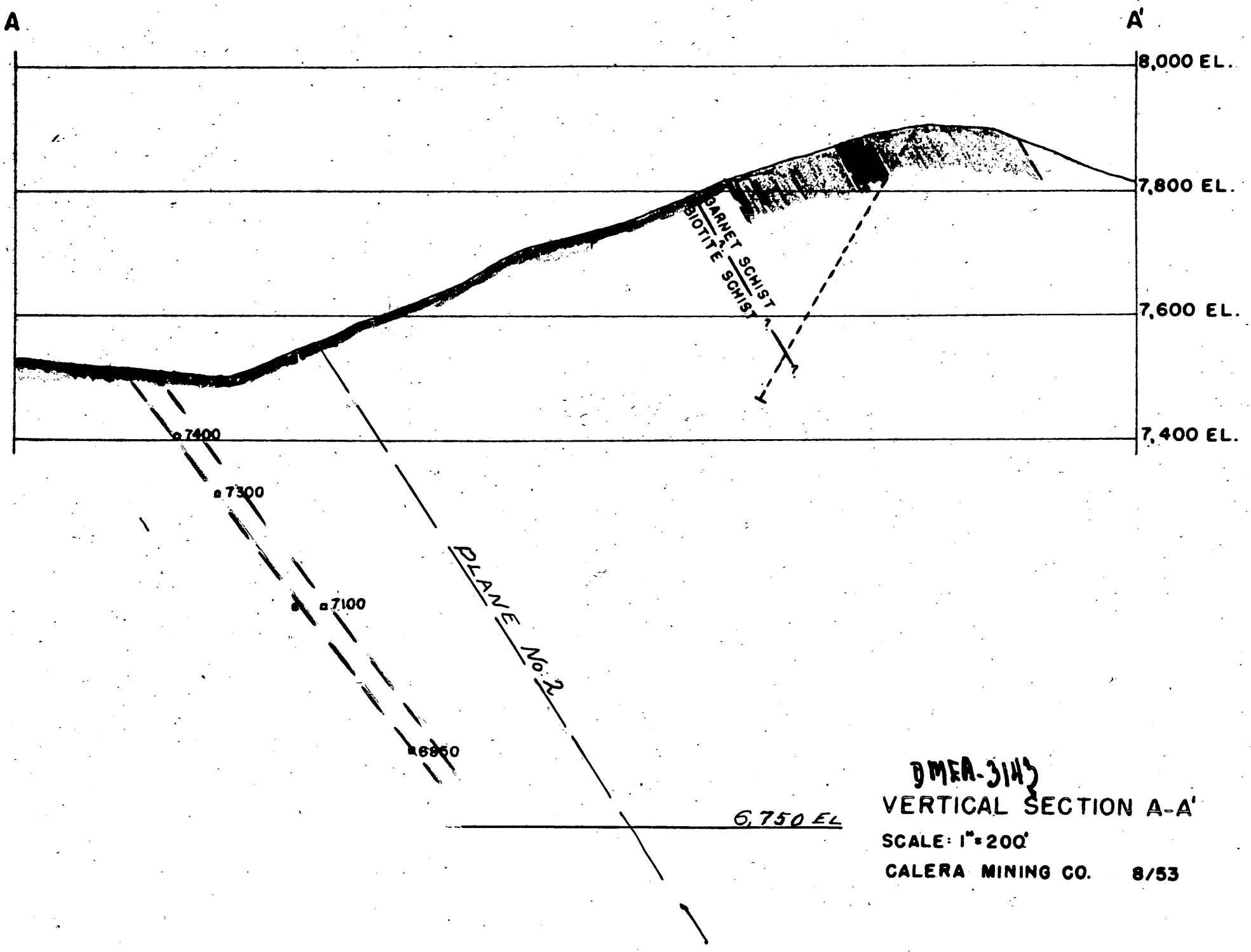
The receipt of your application dated August 12, 1953, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number EDMEA-3143 and referred to the Iron & Ferro-Alloys Division.

Kindly refer to EDMEA-3143 in any future correspondence relating to your application.

Sincerely yours,

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

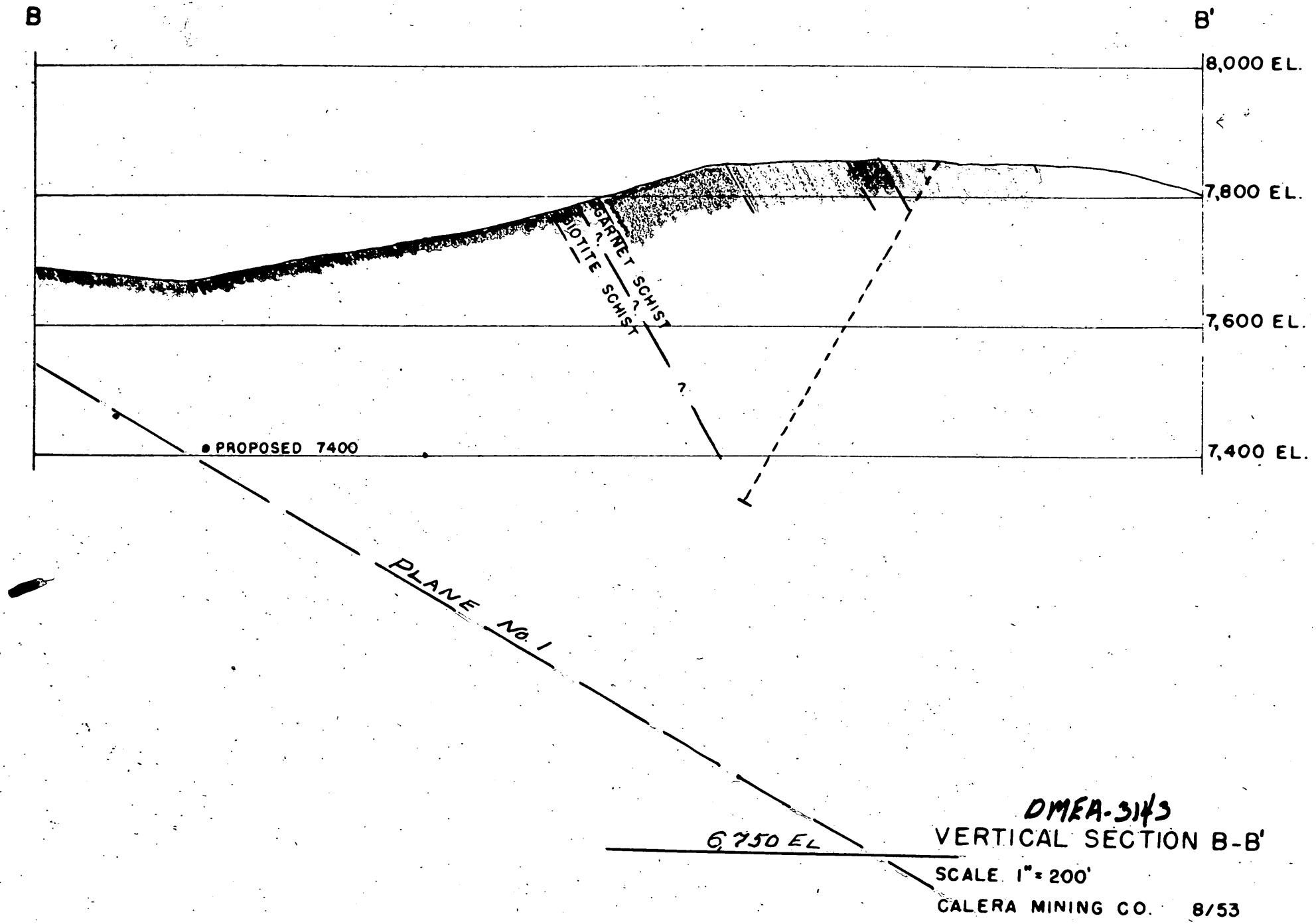


DMEA-3143

VERTICAL SECTION A-A'

SCALE: 1" = 200'

CALERA MINING CO. 8/53

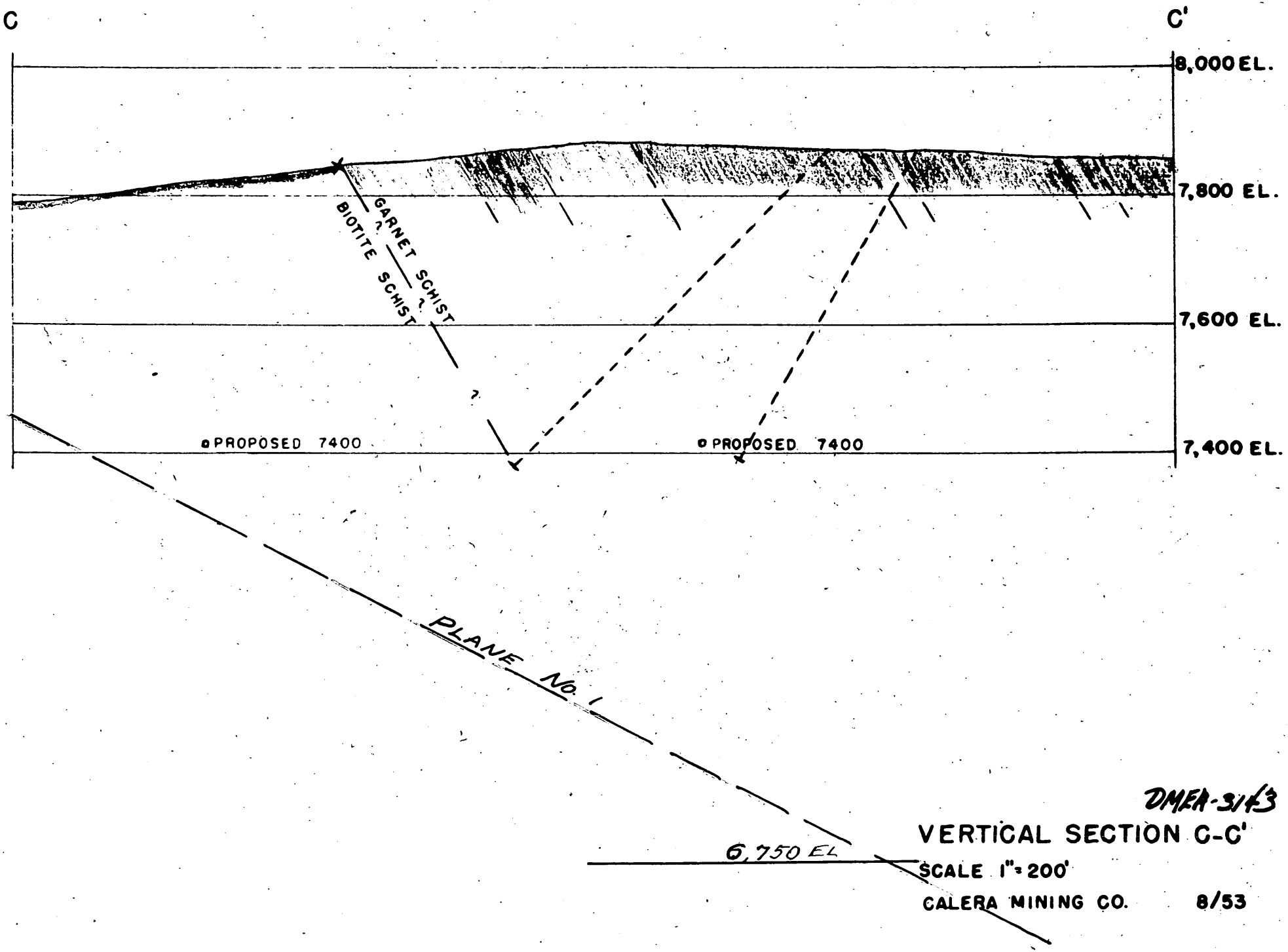


DMEA-3143

VERTICAL SECTION B-B'

SCALE 1" = 200'

CALERA MINING CO. 8/53

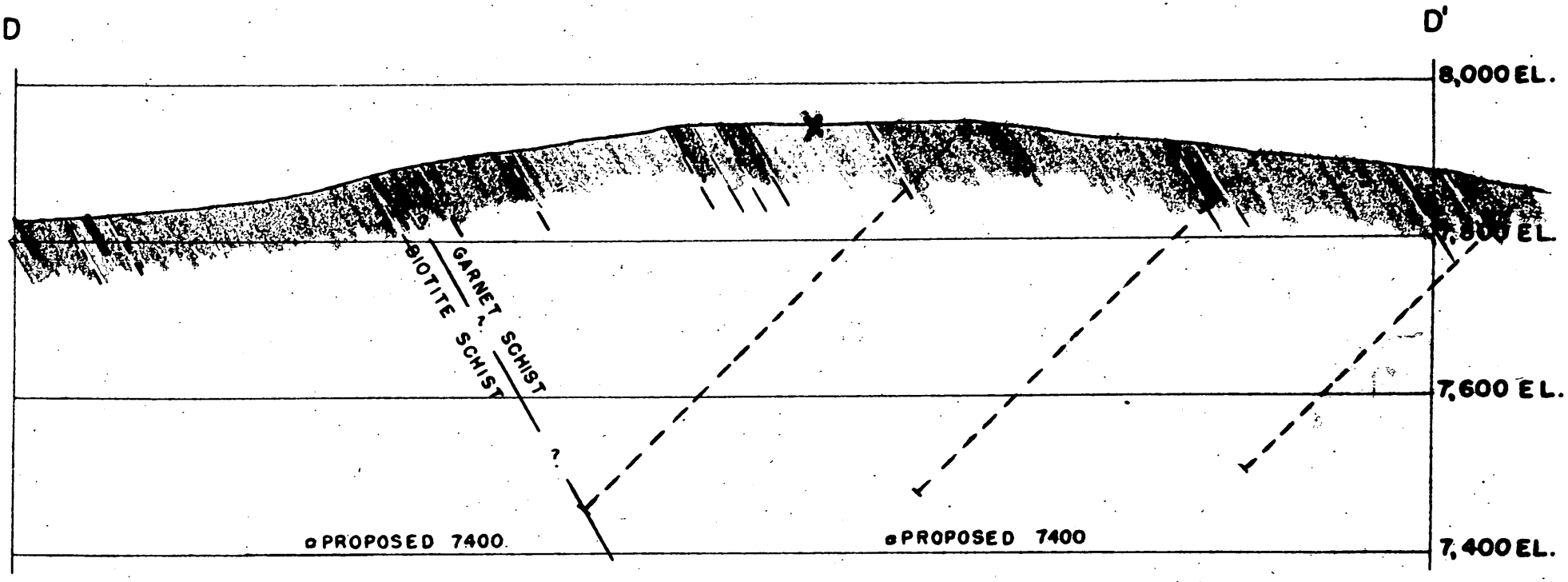


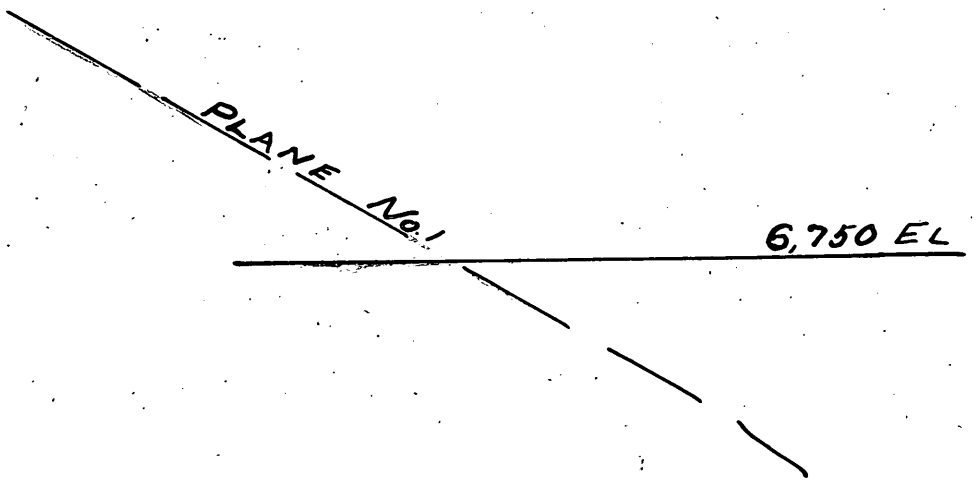
DMEA-3143

VERTICAL SECTION C-C'

SCALE 1" = 200'

CALERA MINING CO. 8/53



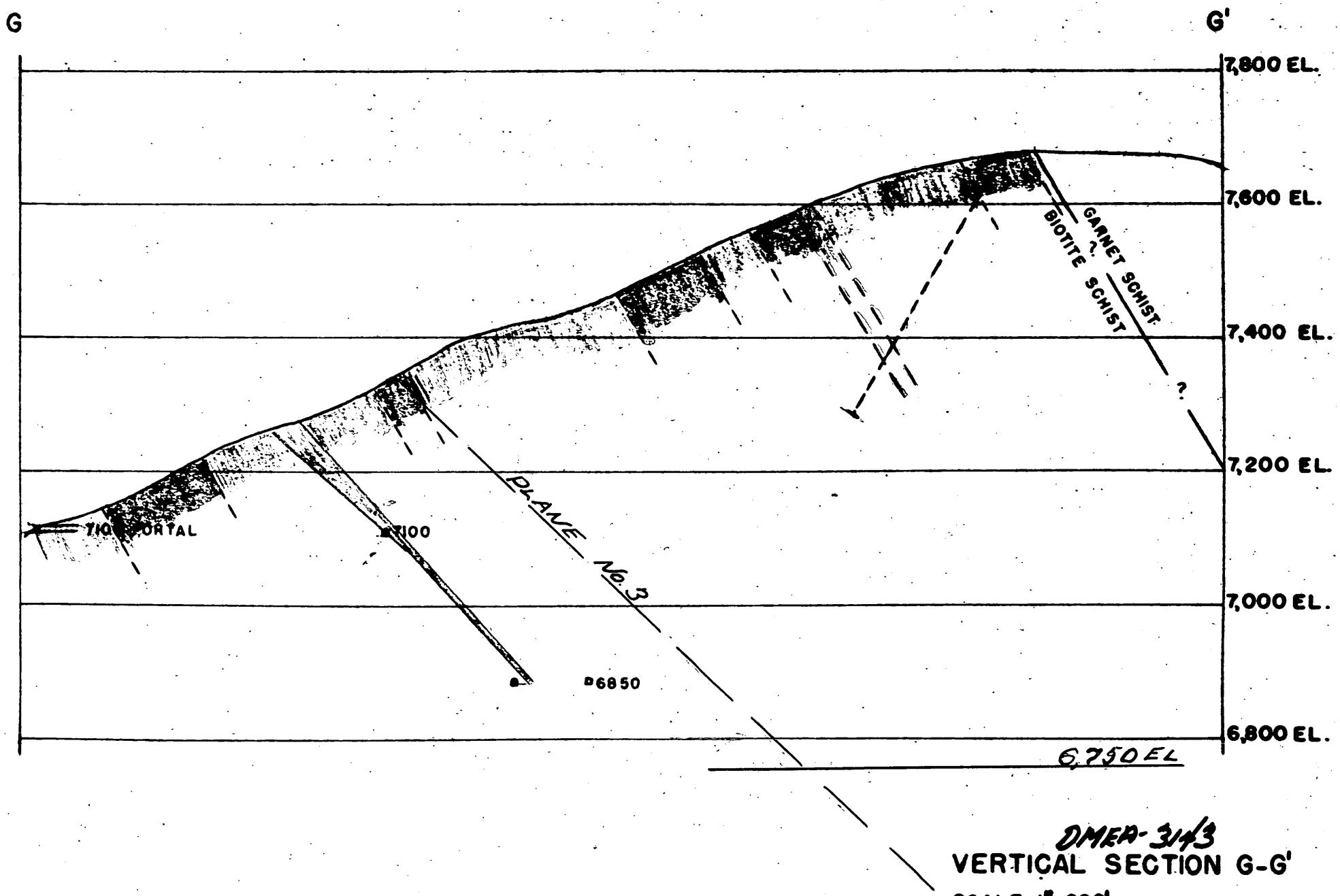


DMEA-3143

VERTICAL SECTION D-D'

SCALE 1" = 200'

CALERA MINING CO. 8/53

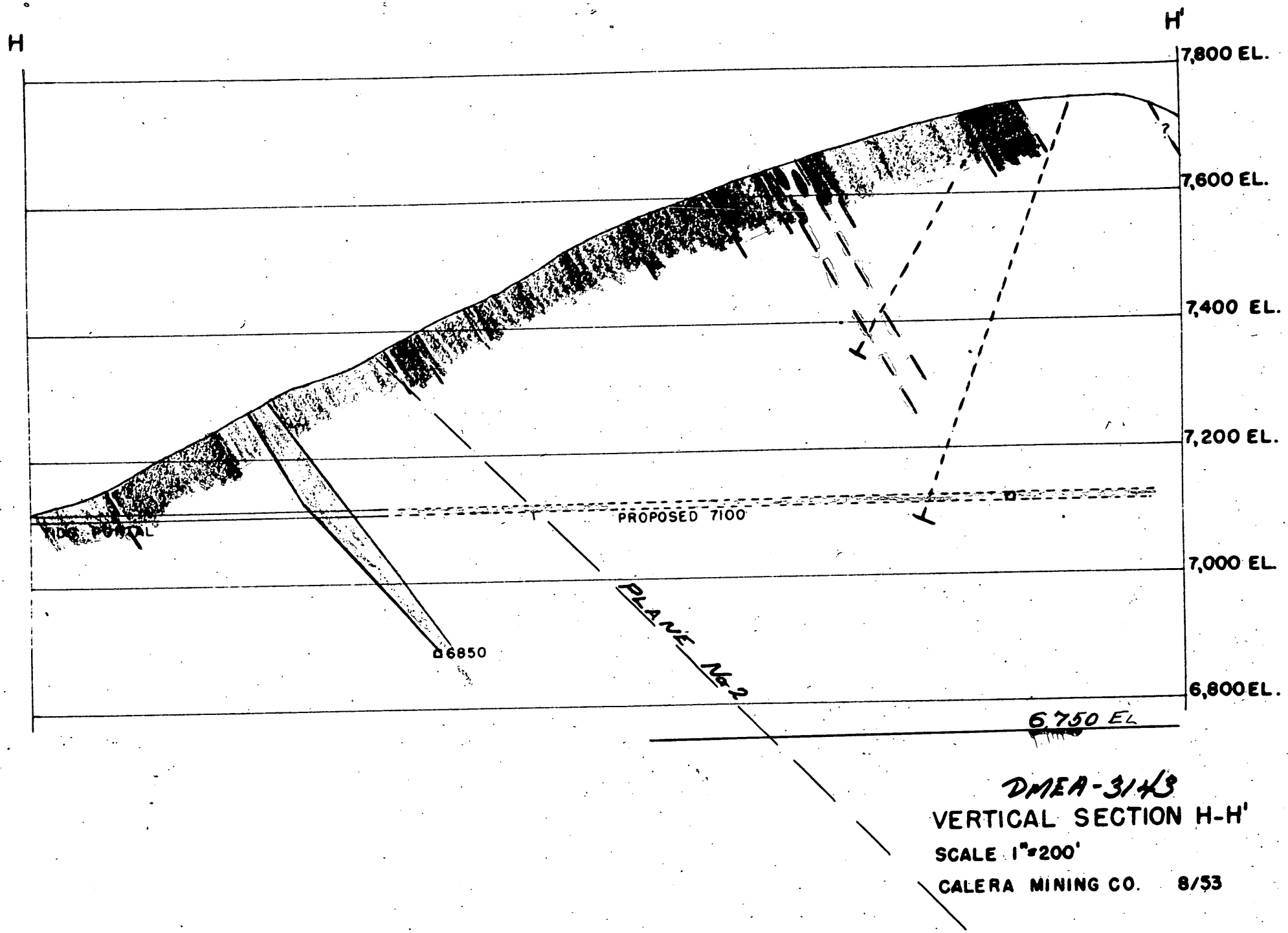


DMEA-3143

VERTICAL SECTION G-G'

SCALE 1"=200'

CALERA MINING CO. 8/53

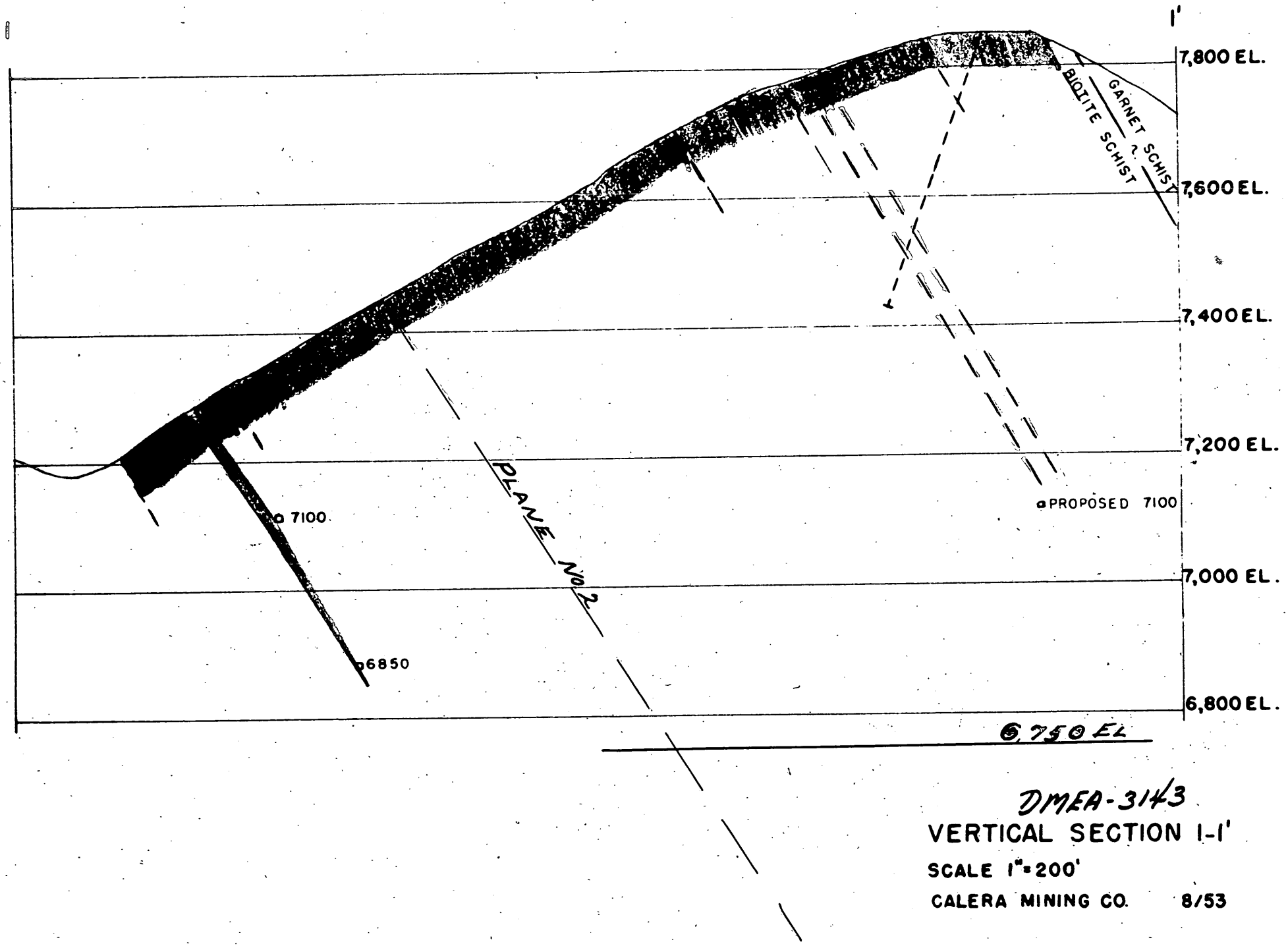


DMEA-3143

VERTICAL SECTION H-H'

SCALE 1" = 200'

CALERA MINING CO. 8/53

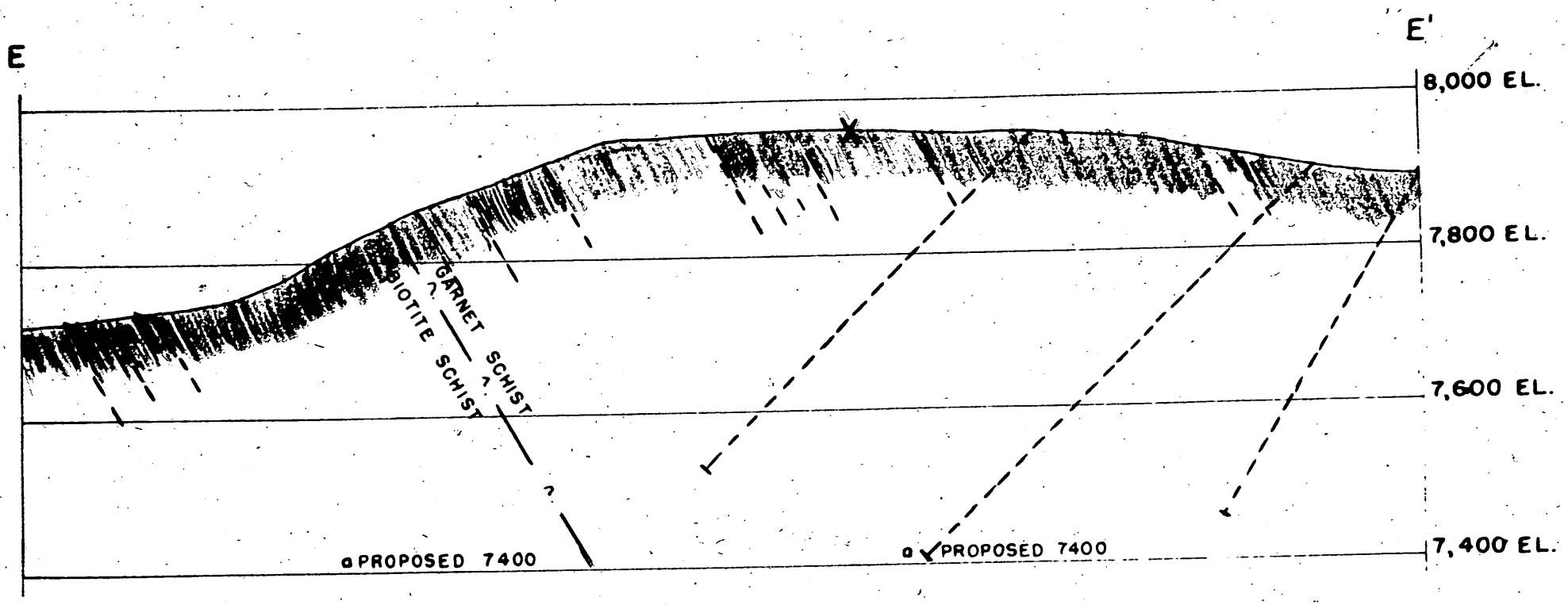


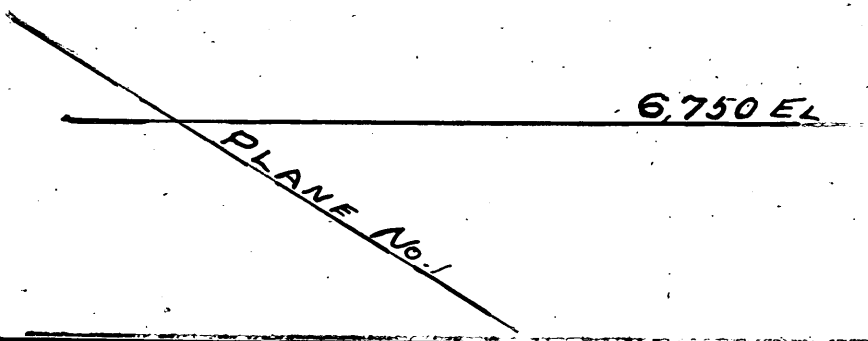
DMEA-3143

VERTICAL SECTION 1-1'

SCALE 1" = 200'

CALERA MINING CO. 8/53



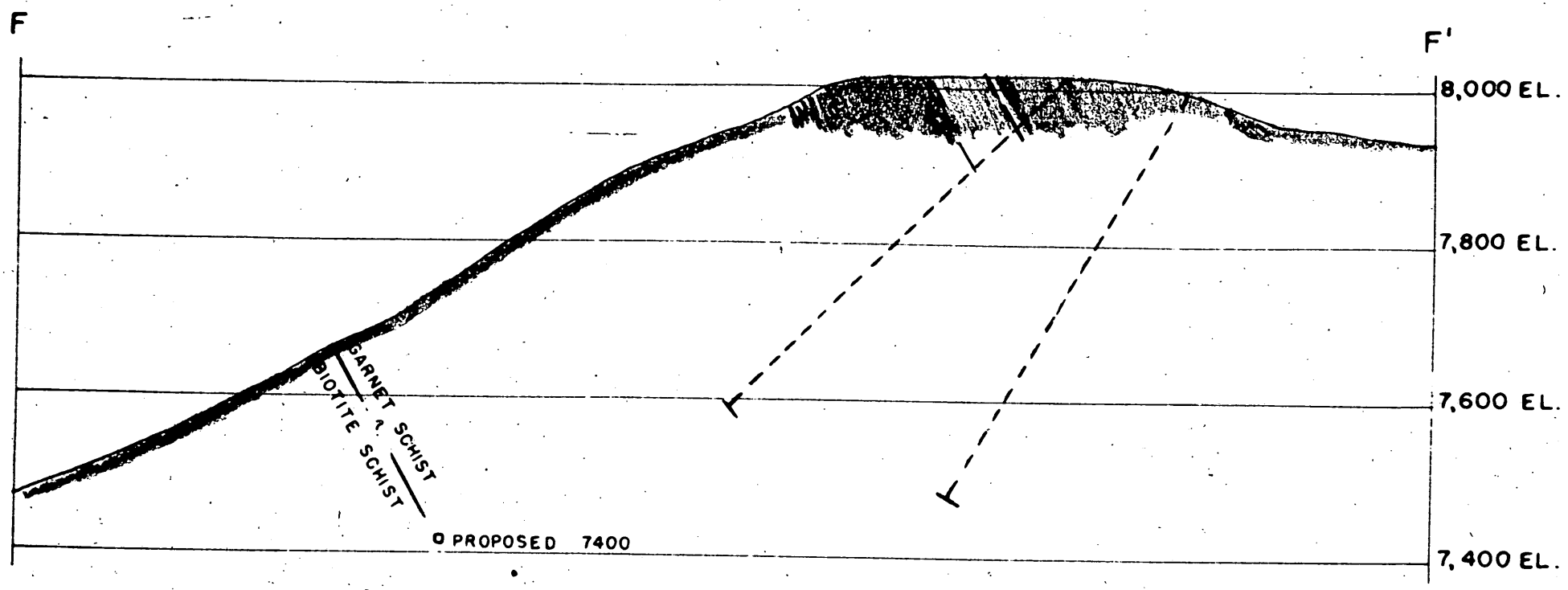


DMEA-3143

VERTICAL SECTION E-E'

SCALE 1" = 200'

CALERA MINING CO. 8/53



DMEA-3143

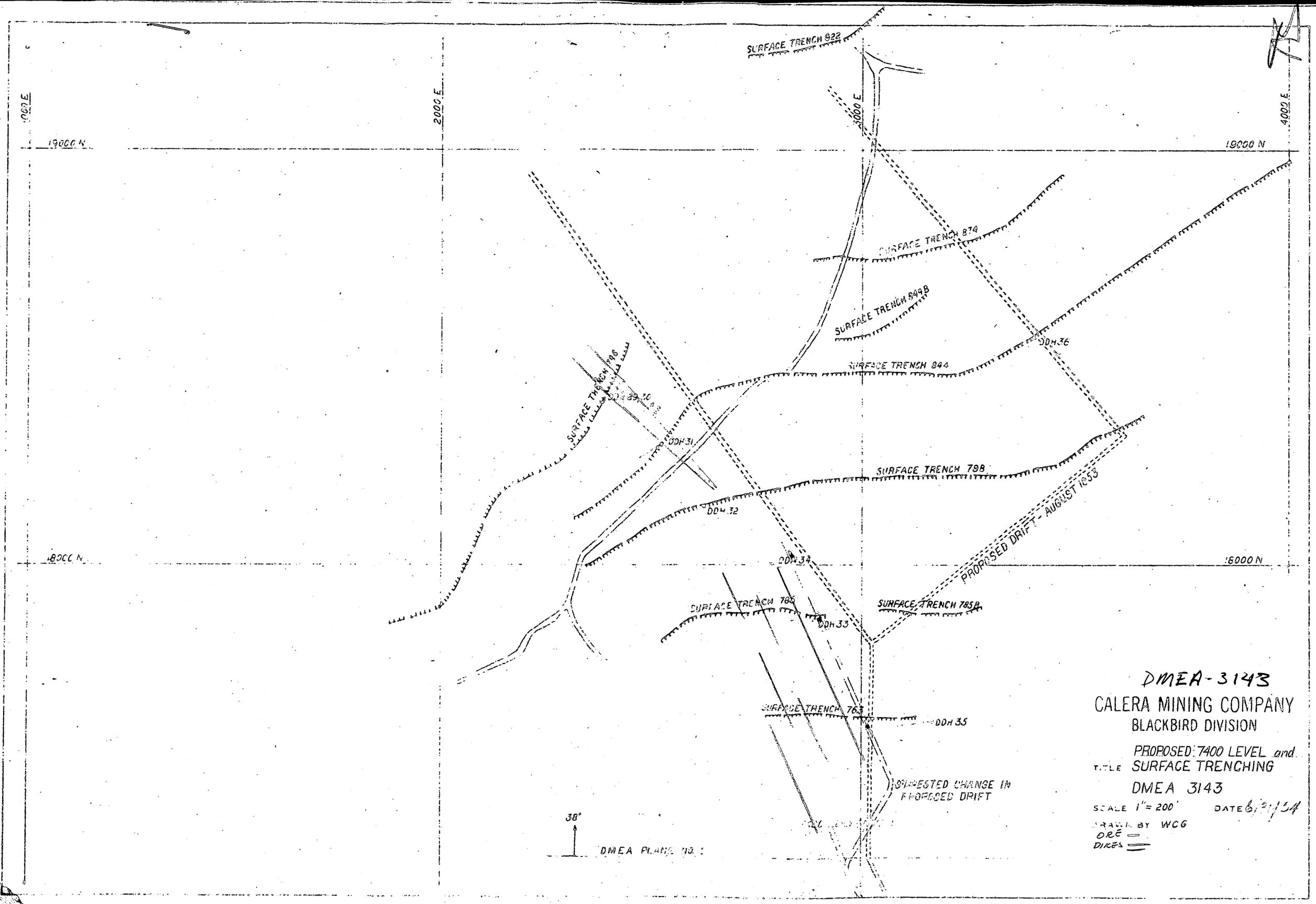
VERTICAL SECTION F-F'

SCALE 1" = 200'

CALERA MINING CO.

6,750 EL

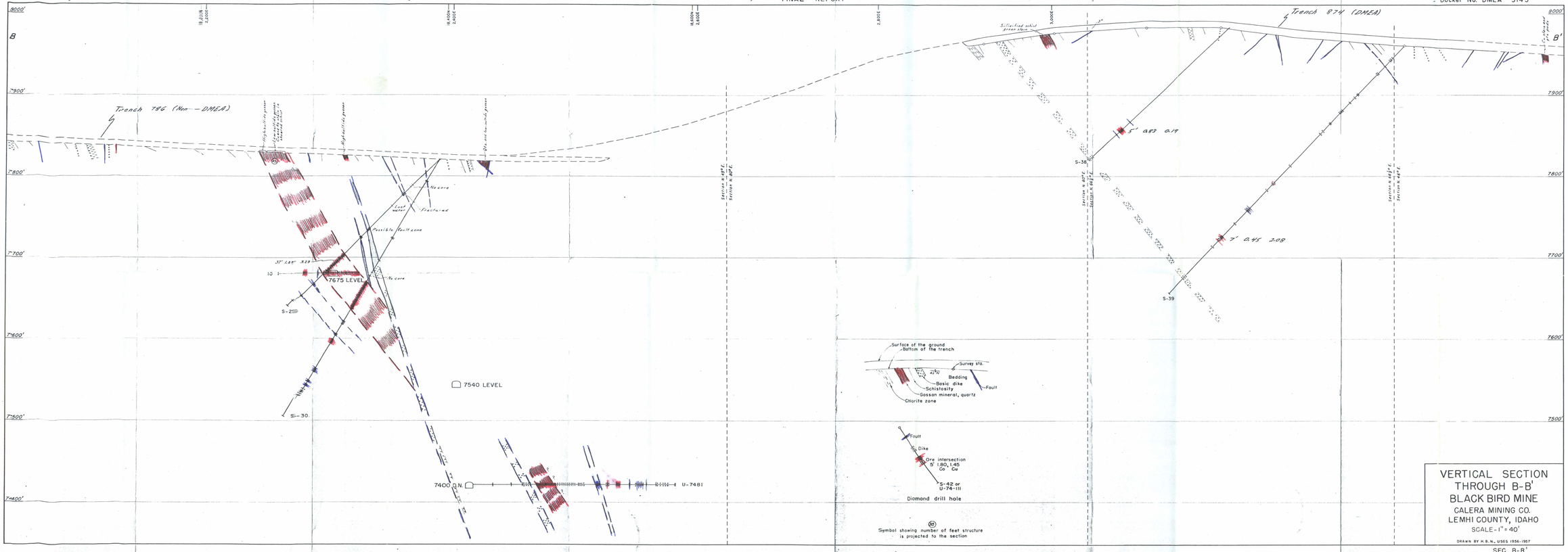
PLAN No. 1 PROJ


SURFACE TRENCH 822
1000 E
2000 E
3000 E
4000 E
19000 N
18000 N
16000 N
SURFACE TRENCH 874
SURFACE TRENCH 849B
SURFACE TRENCH 844
DDH 36
SURFACE TRENCH 798
DDH 31
DDH 32
DDH 34
PROPOSED DRIFT - AUGUST 1953
SURFACE TRENCH 785
SURFACE TRENCH 785A
DDH 33
SURFACE TRENCH 763
DDH 35
SUGGESTED CHANGE IN PROPOSED DRIFT
38°
DMEA PLANE NO. 1
DMEA-3143
CALERA MINING COMPANY
BLACKBIRD DIVISION
TITLE PROPOSED 7400 LEVEL and SURFACE TRENCHING
DMEA 3143
SCALE 1" = 200'
DATE 6/21/54
DRAWN BY WCG
ORE
DIKES

UNITED STATES
DEPARTMENT OF THE INTERIOR

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FINAL REPORT

Docket No. DMEA 3143



VERTICAL SECTION
THROUGH B-B'
BLACK BIRD MINE
CALERA MINING CO.
LEMHI COUNTY, IDAHO
SCALE - 1" = 40'
DRAWN BY H.B.N., USGS 1956-1957

SEC. B-B'

NOTE –

PATENTED CLAIMS ARE SHOWN IN SOLID LINES AND UNPATENTED CLAIMS ARE SHOWN IN BROKEN LINES.

GREEN COLORED CLAIM LINES INDICATE ADJOINING PROPERTIES.

PROPOSED UNDERGROUND EXPLORATION SHOWN IN BLACK LINES.

MAP No. 2

CALERA MINING COMPANY

BLACKBIRD DIVISION

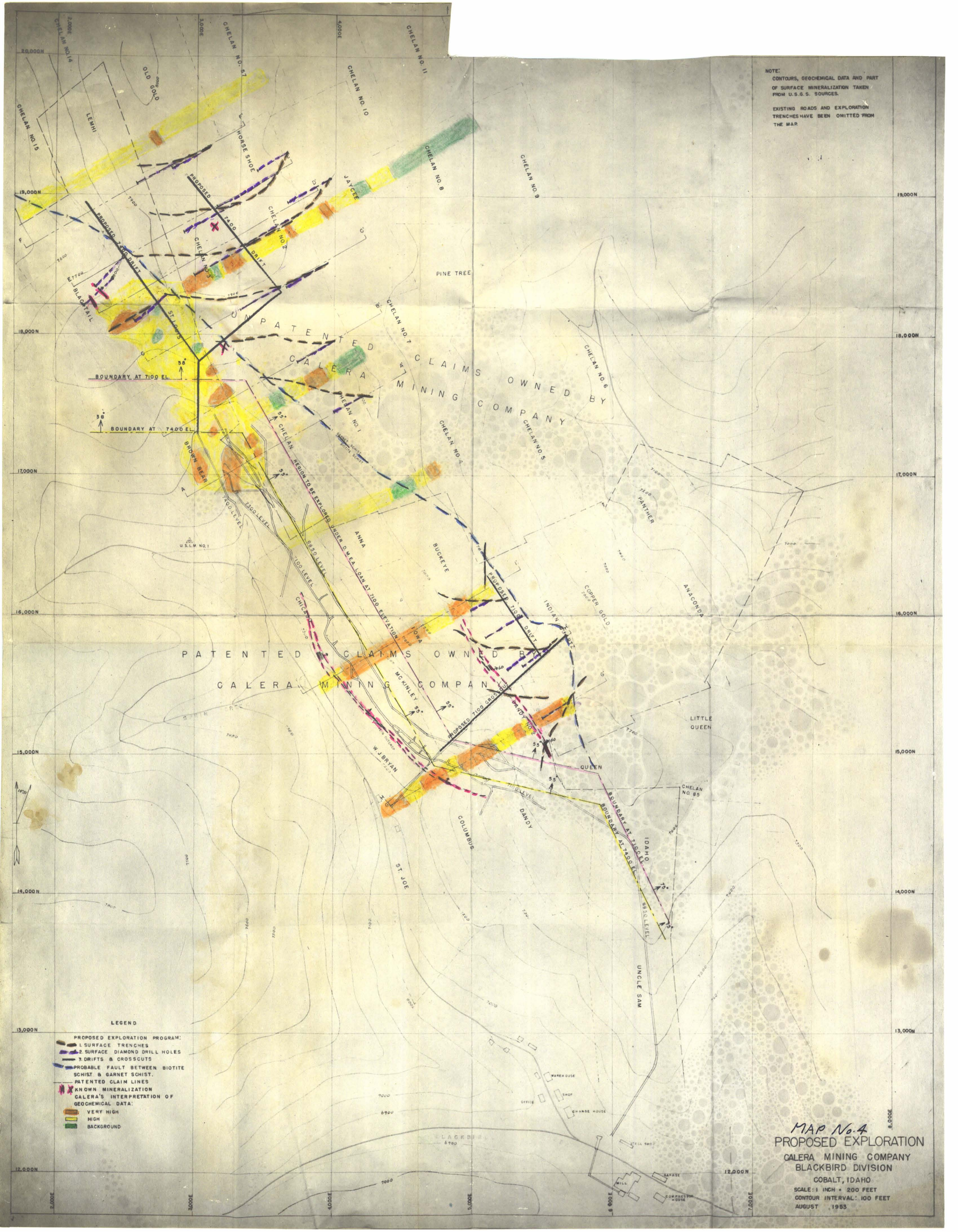
COBALT, IDAHO

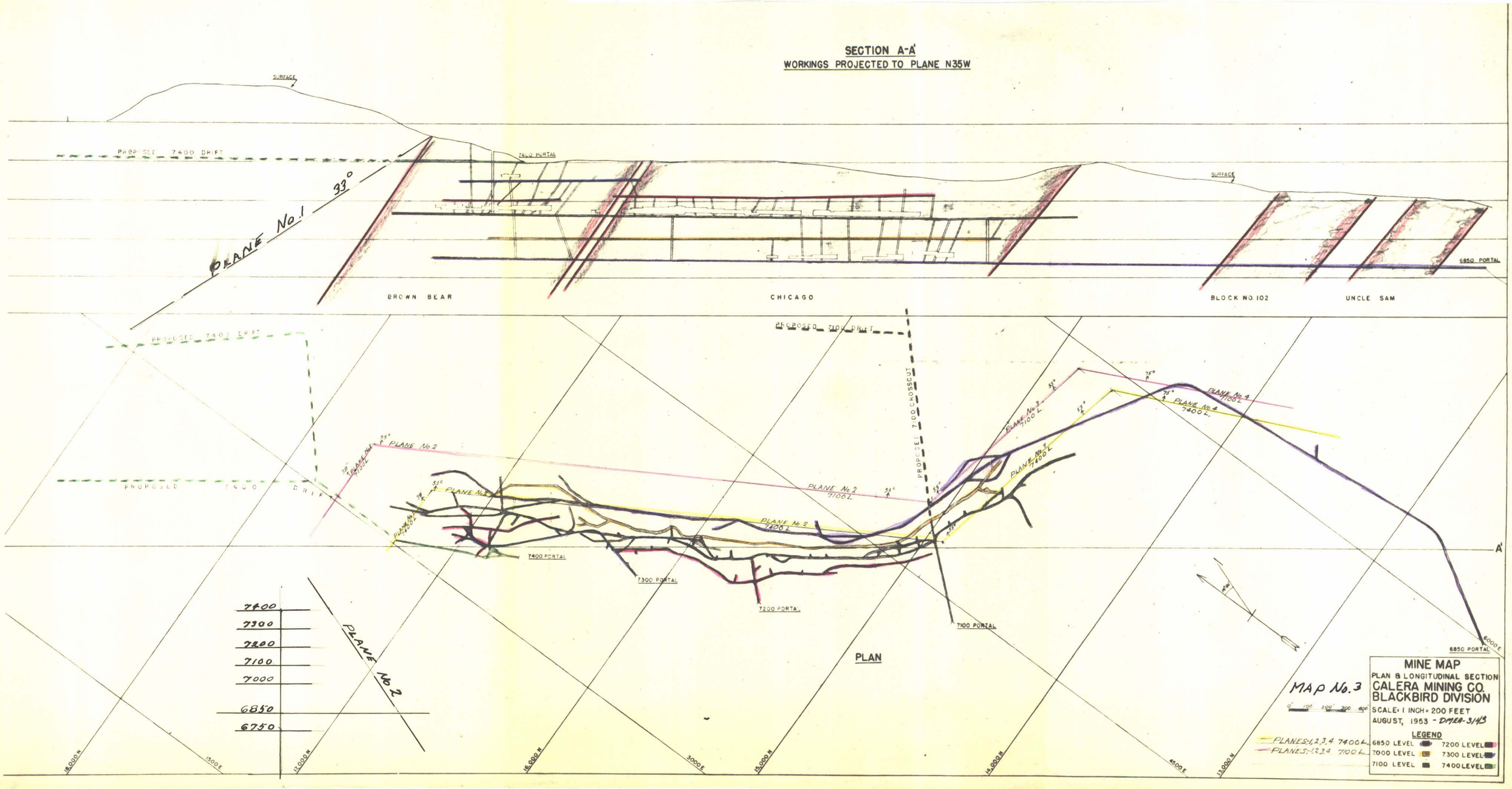
PLANES 1,2,3,4-7400L
PLANES 1,2,3,4-7100L
CLAIM BOUNDARIES IN DMEA PROJECT

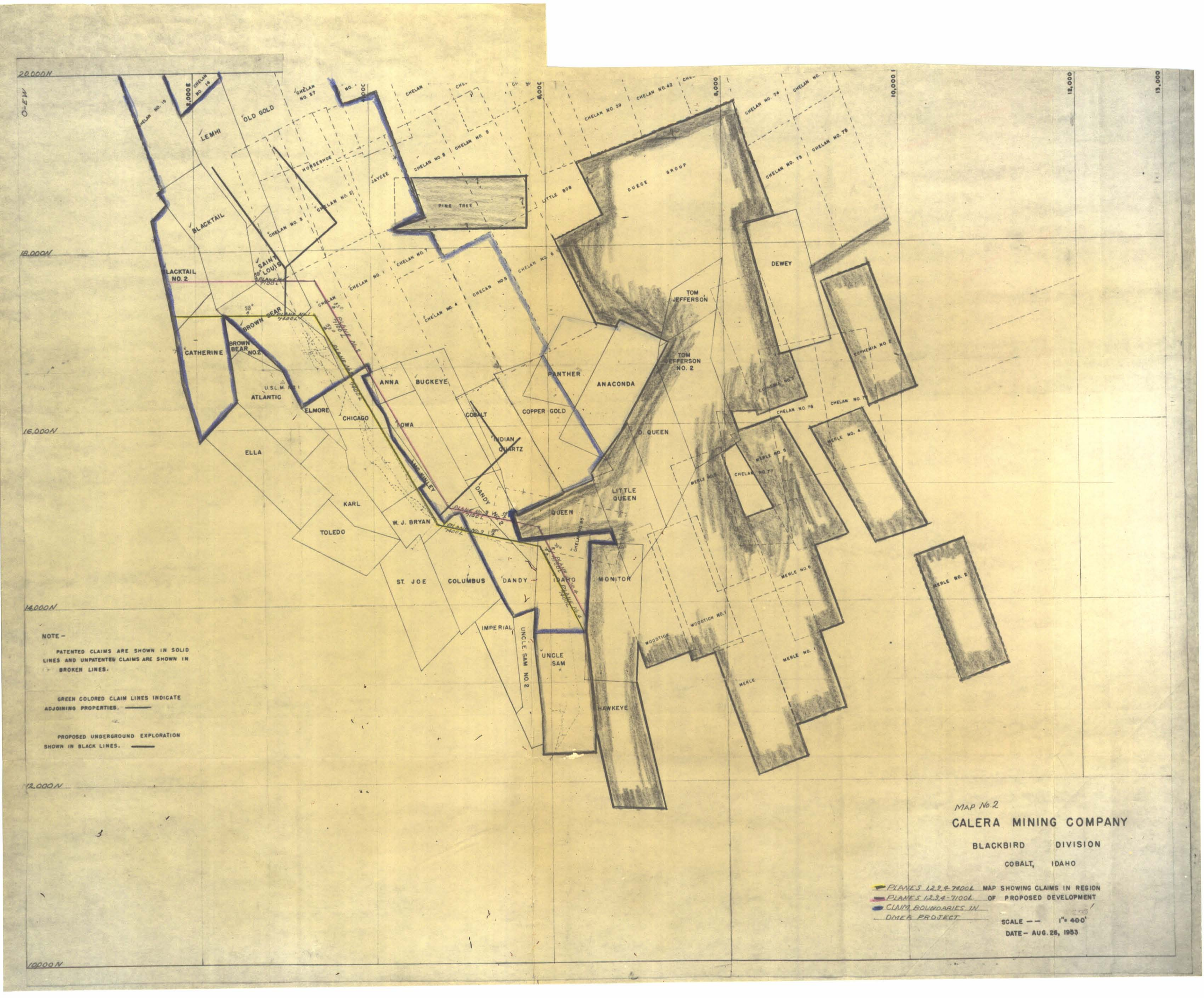
MAP SHOWING CLAIMS IN REGION OF PROPOSED DEVELOPMENT

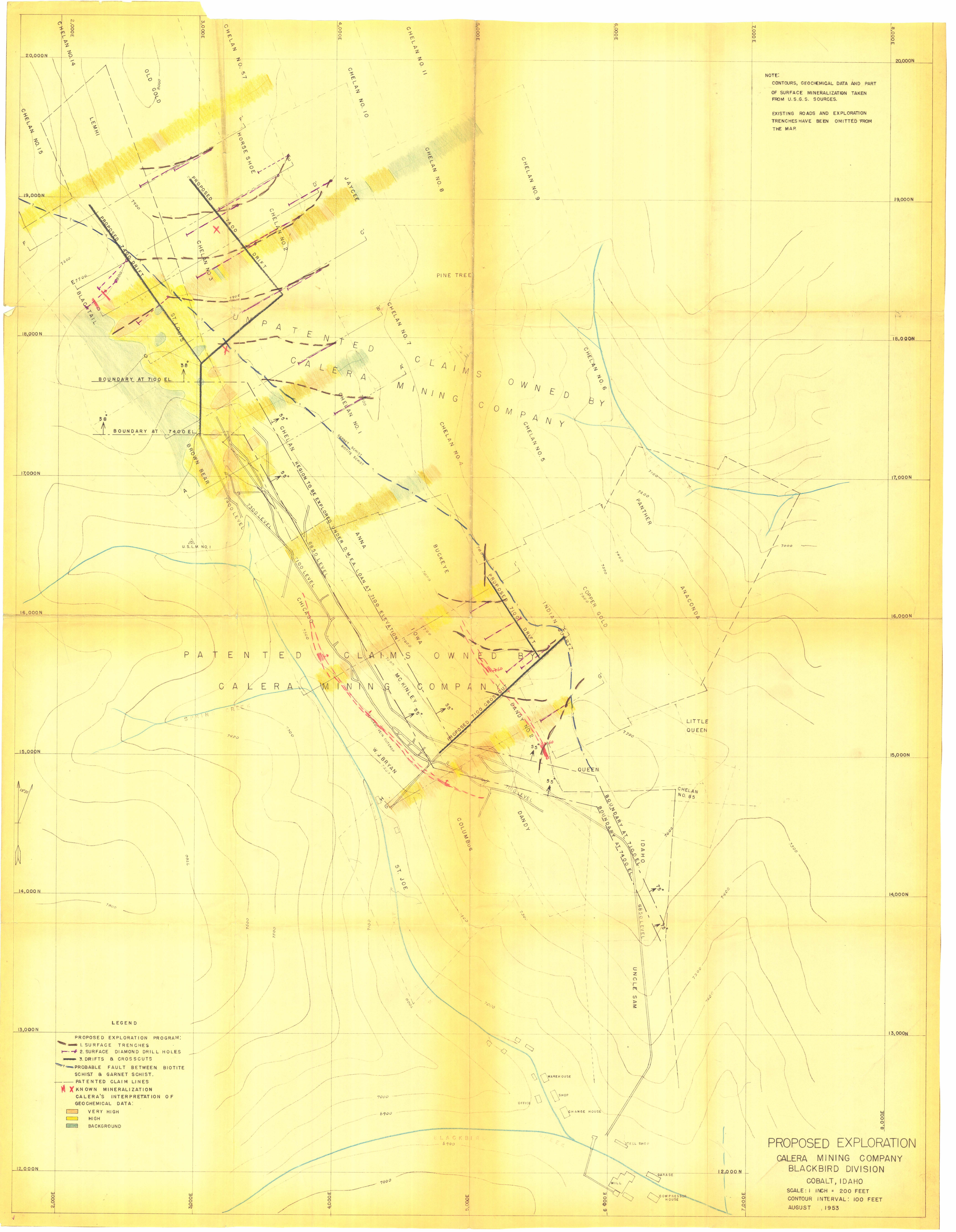
SCALE — — 1" = 400'

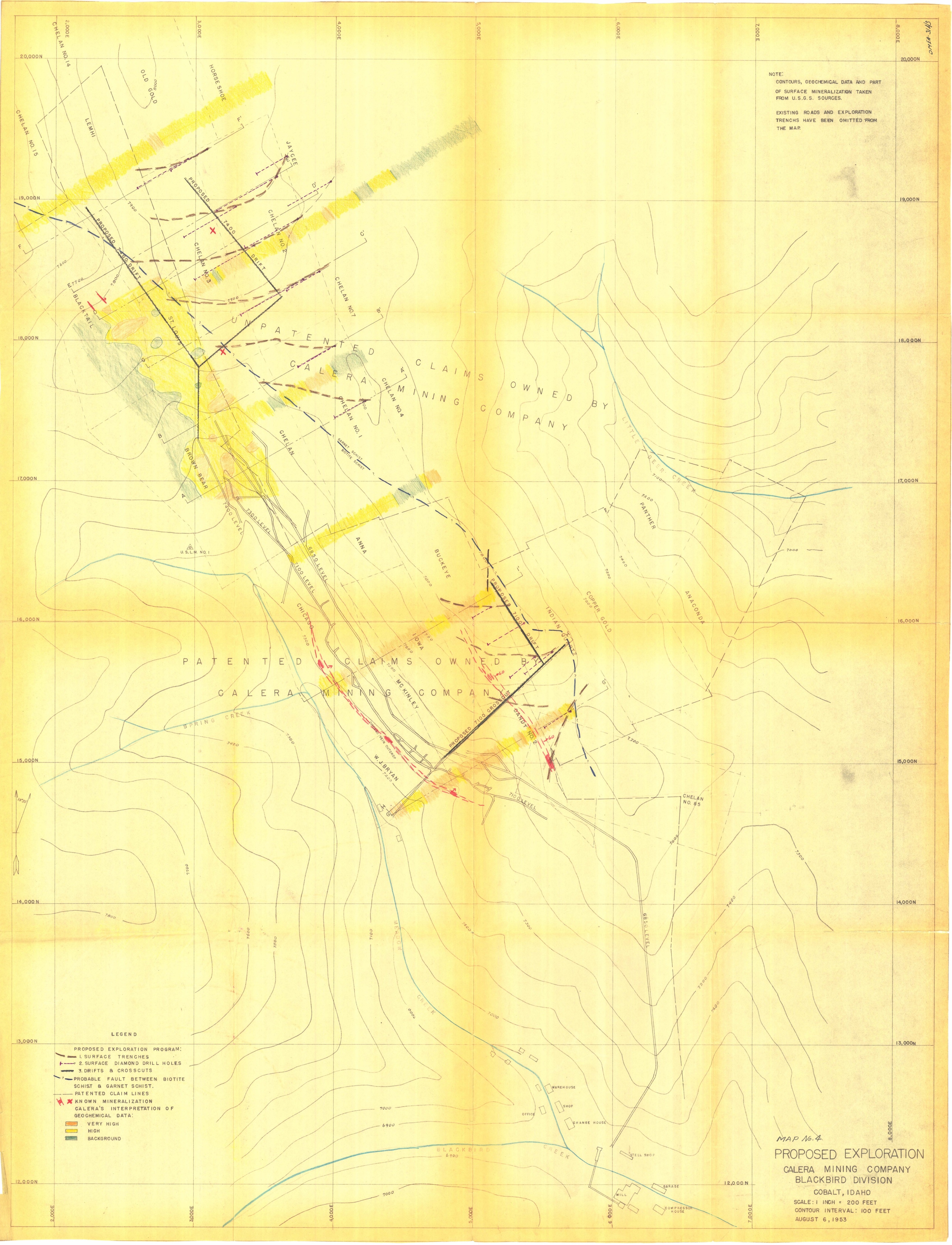
DATE – AUG. 26, 1953

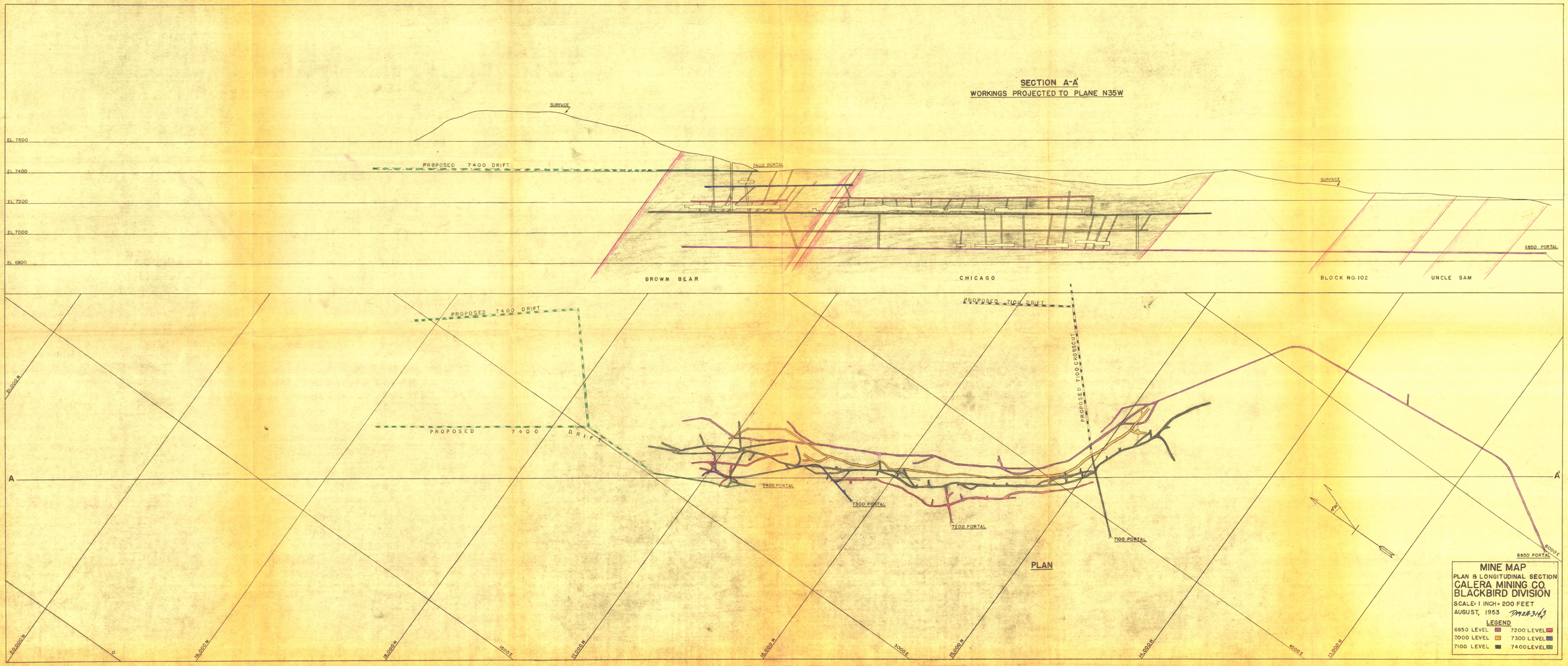

NOTE:
CONTOURS, GEOCHEMICAL DATA AND PART OF SURFACE MINERALIZATION TAKEN FROM U.S.G.S. SOURCES.
EXISTING ROADS AND EXPLORATION TRENCHES HAVE BEEN OMITTED FROM THE MAP.
PATENTED CLAIMS OWNED BY CALERA MINING COMPANY
PATENTED CLAIMS OWNED BY CALERA MINING COMPANY
BOUNDARY AT 7100 EL.
BOUNDARY AT 7400 EL.
PROPOSED 7400 DRIFT
PROPOSED 7100 DRIFT
PROPOSED 7100 CROSSCUT
CHELAN REGION TO BE EXPLORED UNDER DMEA LOAN AT 7100 ELEVATION
BOUNDARY AT 7100 EL.
BOUNDARY AT 7400 EL.
OLD GOLD
LEMHI
HORSE SHOE
JAYCEE
PINE TREE
BLACKTAIL
ST. LOUIS
BROWN BEAR
ANNA
BUCKEYE
IOWA
CHICAGO
MCKINLEY
W. J. BRYAN
COLUMBUS
DANDY
ST. JOE
INDIAN
COPPER GOLD
PANTHER
ANACONDA
LITTLE QUEEN
QUEEN
IDAHO
UNCLE SAM
CHELAN NO. 85
7400 LEVEL
7300 LEVEL
7100 LEVEL
6850 LEVEL
U.S.L.M. NO. 1
WAREHOUSE
SHOP
OFFICE
CHANGE HOUSE
MILL
GARAGE
COMPRESSOR HOUSE
LEGEND
PROPOSED EXPLORATION PROGRAM:
1. SURFACE TRENCHES
2. SURFACE DIAMOND DRILL HOLES
3. DRIFTS & CROSSCUTS
PROBABLE FAULT BETWEEN BIOTITE SCHIST & GARNET SCHIST.
PATENTED CLAIM LINES
KNOWN MINERALIZATION
CALERA'S INTERPRETATION OF GEOCHEMICAL DATA:
VERY HIGH
HIGH
BACKGROUND
MAP No. 4
PROPOSED EXPLORATION
CALERA MINING COMPANY
BLACKBIRD DIVISION
COBALT, IDAHO
SCALE: 1 INCH = 200 FEET
CONTOUR INTERVAL: 100 FEET
AUGUST, 1953

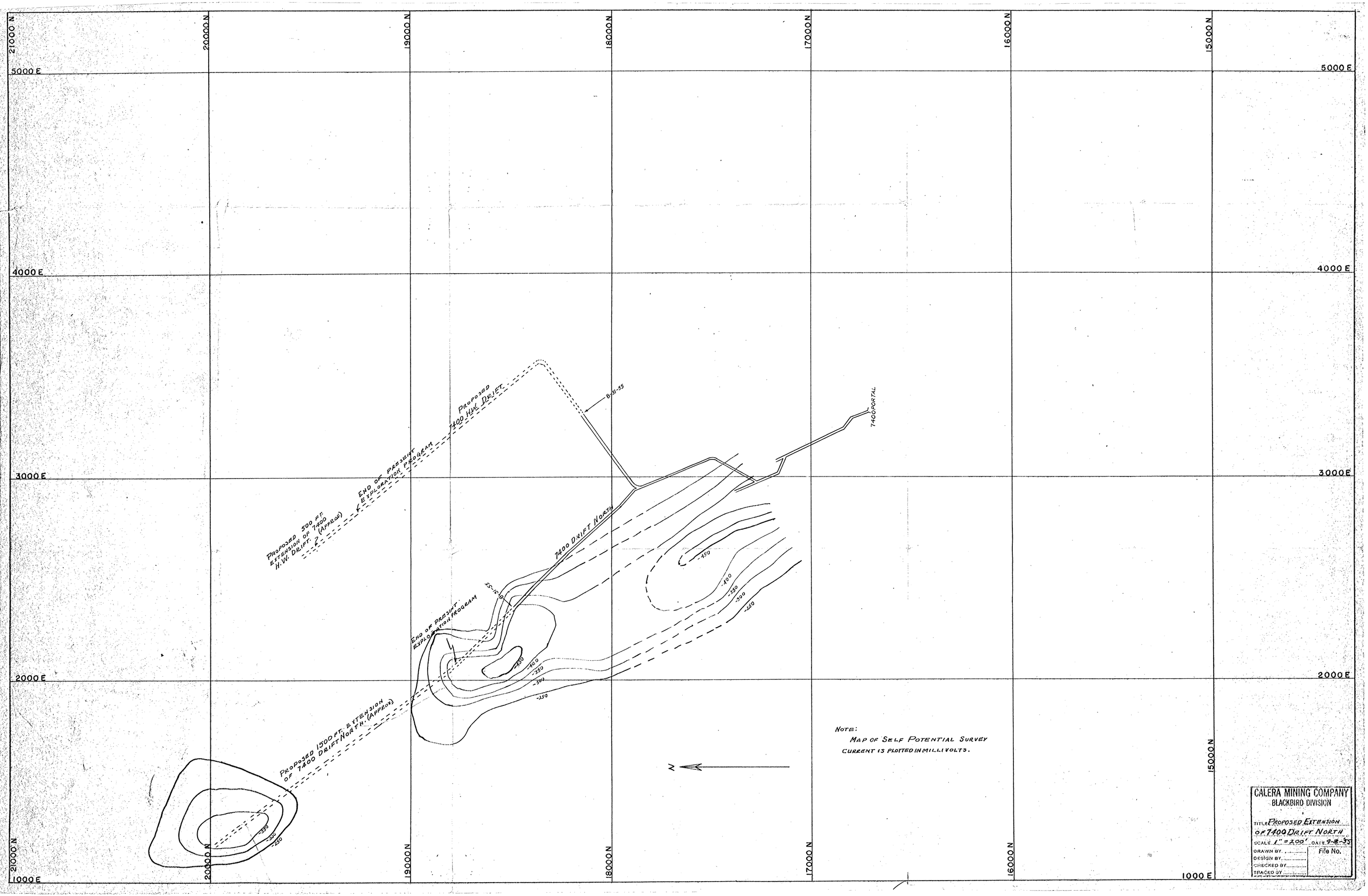

SECTION A-A'
WORKINGS PROJECTED TO PLANE N35W
SURFACE
PROPOSED 7400 DRIFT
7400 PORTAL
PLANE No. 1
33°
BROWN BEAR
CHICAGO
BLOCK NO. 102
UNCLE SAM
6850 PORTAL
PROPOSED 7100 DRIFT
PROPOSED 7100 CROSSCUT
PLANE No. 2
PLANE No. 2 7100L
PLANE No. 2 7400L
PLANE No. 3 7100L
PLANE No. 3 7400L
PLANE No. 4 7100L
PLANE No. 4 7400L
7400 PORTAL
7300 PORTAL
7200 PORTAL
7100 PORTAL
A'
7400
7300
7200
7100
7000
6850
6750
PLANE No. 2
PLAN
MAP No. 3
MINE MAP
PLAN & LONGITUDINAL SECTION
CALERA MINING CO.
BLACKBIRD DIVISION
SCALE: 1 INCH = 200 FEET
AUGUST, 1953 - DMEA-3/43
LEGEND
PLANES-1,2,3,4 7400L
PLANES-1,2,3,4 7100L
6850 LEVEL
7000 LEVEL
7100 LEVEL
7200 LEVEL
7300 LEVEL
7400 LEVEL

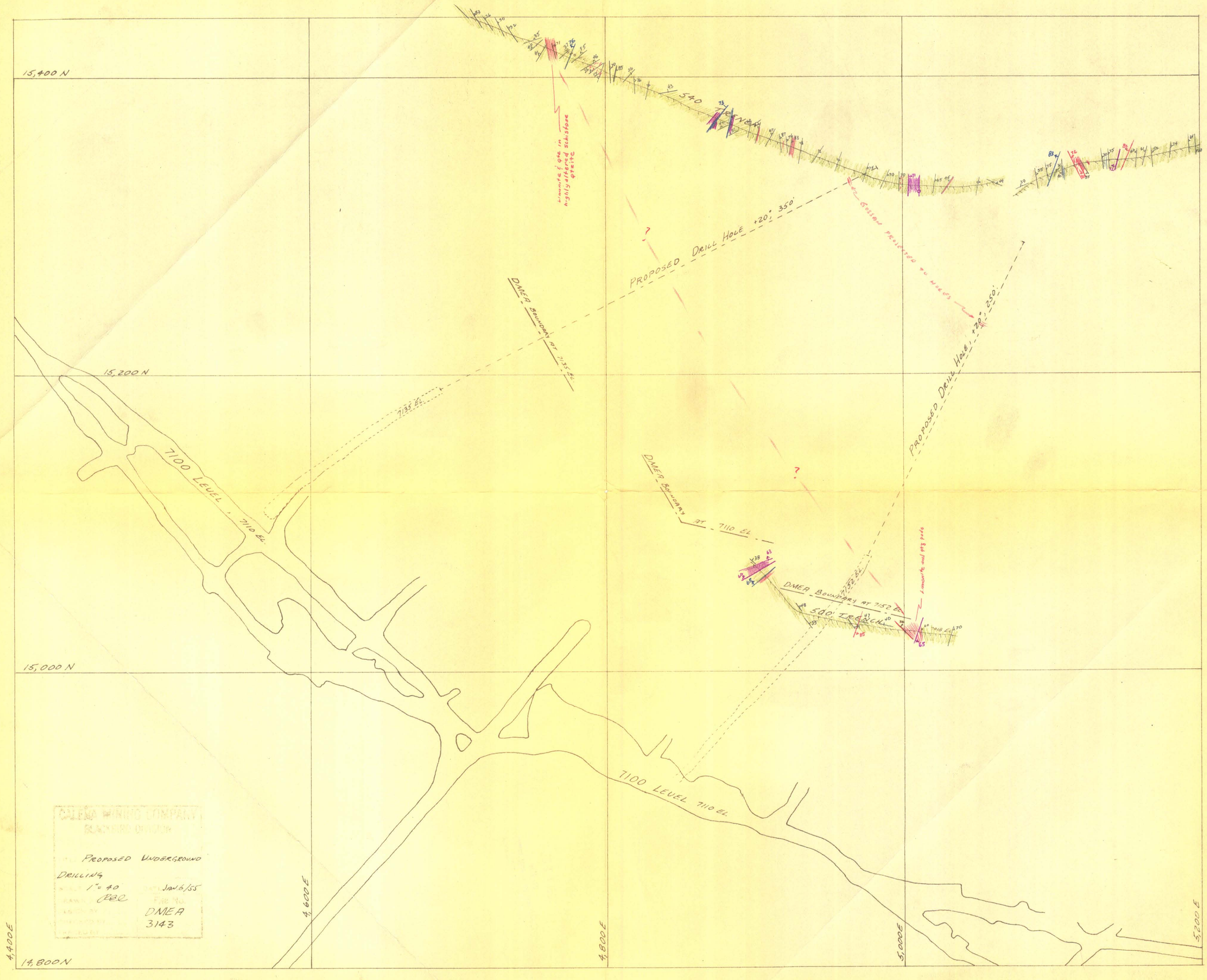

20,000N
18,000N
16,000N
14,000N
12,000N
10,000N
0-EW
2,000E
4,000E
6,000E
8,000
10,000
12,000
13,000
CHELAN NO. 15
CHELAN NO. 14
CHELAN NO. 67
CHELAN NO. 39
CHELAN NO. 42
CHELAN NO. 74
CHELAN NO. 75
CHELAN NO. 76
CHELAN NO. 8
CHELAN NO. 9
CHELAN NO. 2
CHELAN NO. 3
CHELAN NO. 1
CHELAN NO. 7
CHELAN NO. 6
CHELAN NO. 5
CHELAN NO. 4
CHELAN NO. 78
CHELAN NO. 77
LEMHI
OLD GOLD
HORSESHOE
JAYCEE
PINE TREE
LITTLE BOB
QUEEN GROUP
BLACKTAIL
BLACKTAIL NO. 2
SAINT LOUIS
BROWN BEAR
BROWN BEAR NO. 2
CATHERINE
U.S.L.M. 101
ATLANTIC
ELMORE
CHICAGO
ANNA
BUCKEYE
IOWA
COBALT
INDIAN QUARTZ
COPPER GOLD
PANTHER
ANACONDA
TOM JEFFERSON
TOM JEFFERSON NO. 2
DEWEY
EUPHEMIA NO. 2
EUPHEMIA NO. 3
D. QUEEN
MERLE NO. 5
MERLE NO. 4
MERLE NO. 3
MERLE NO. 6
MERLE NO. 2
MERLE NO. 1
MERLE
WOODTICK
WOODTICK NO. 1
ELLA
KARL
TOLEDO
W. J. BRYAN
McKINLEY
DANDY
DANDY NO. 2
QUEEN
LITTLE QUEEN
ST. JOE
COLUMBUS
DANDY
IDAHO
MONITOR
IMPERIAL
UNCLE SAM NO. 2
UNCLE SAM
HAWKEYE
PLANE No. 2 7100L
PLANE No. 2 7400L
PLANE No. 3 7100L
PLANE No. 3 7400L
PLANE No. 4 7100L
PLANE No. 4 7400L
NOTE –
PATENTED CLAIMS ARE SHOWN IN SOLID LINES AND UNPATENTED CLAIMS ARE SHOWN IN BROKEN LINES.
GREEN COLORED CLAIM LINES INDICATE ADJOINING PROPERTIES.
PROPOSED UNDERGROUND EXPLORATION SHOWN IN BLACK LINES.
MAP No. 2
CALERA MINING COMPANY
BLACKBIRD DIVISION
COBALT, IDAHO
PLANES 1,2,3,4-7400L
PLANES 1,2,3,4-7100L
CLAIM BOUNDARIES IN DMEA PROJECT
MAP SHOWING CLAIMS IN REGION OF PROPOSED DEVELOPMENT
SCALE -- 1" = 400'
DATE – AUG. 26, 1953

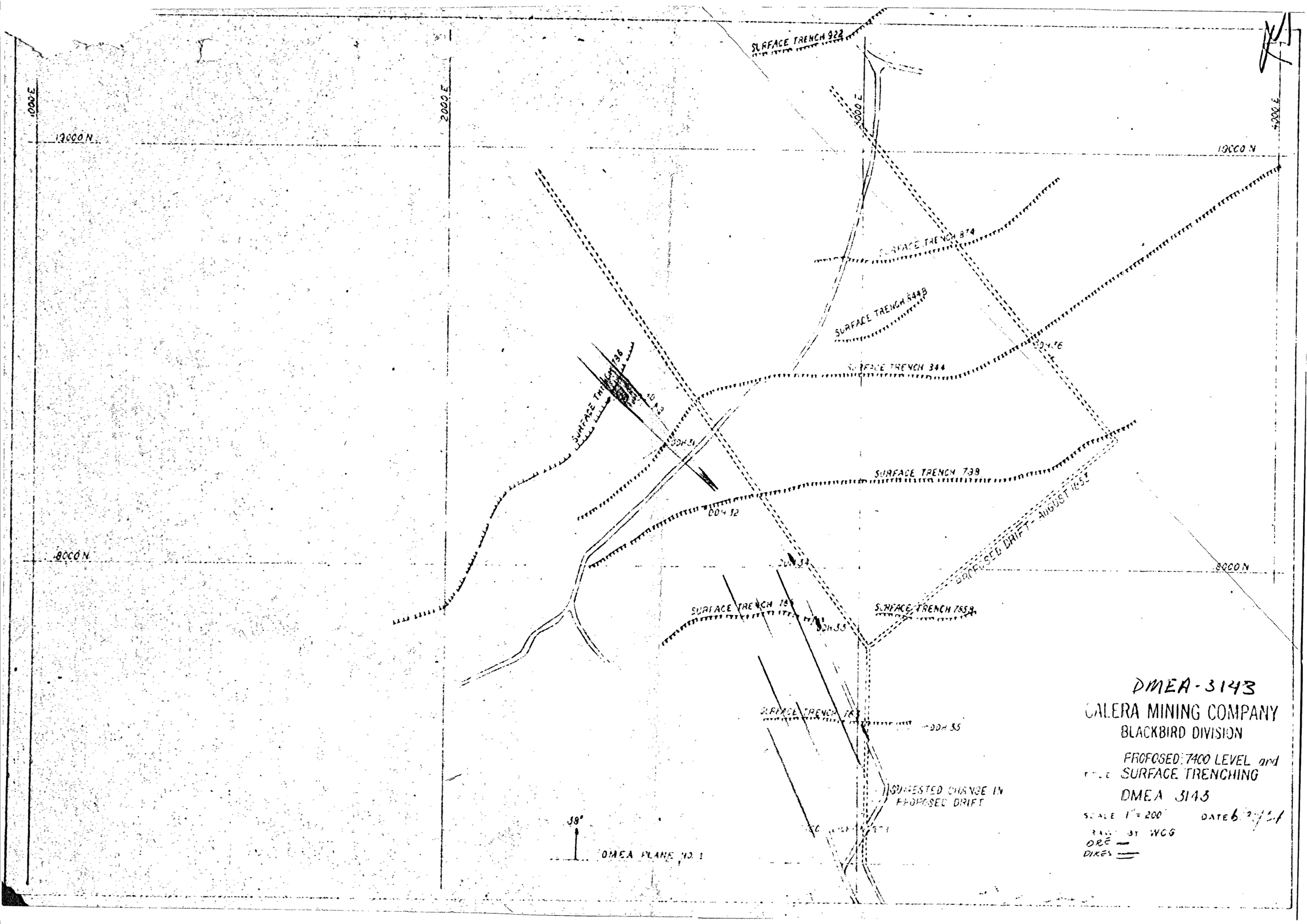

NOTE:
CONTOURS, GEOCHEMICAL DATA AND PART OF SURFACE MINERALIZATION TAKEN FROM U.S.G.S. SOURCES.
EXISTING ROADS AND EXPLORATION TRENCHES HAVE BEEN OMITTED FROM THE MAP.
CHELAN NO. 14
CHELAN NO. 15
CHELAN NO. 57
CHELAN NO. 10
CHELAN NO. 11
CHELAN NO. 8
CHELAN NO. 9
CHELAN NO. 2
CHELAN NO. 3
CHELAN NO. 7
CHELAN NO. 1
CHELAN NO. 4
CHELAN NO. 5
CHELAN NO. 6
CHELAN NO. 85
OLD GOLD
LEMHI
HORSE SHOE
JAYCEE
PINE TREE
BLACKTAIL
ST. LOUIS
BROWN BEAR
PROPOSED 7400 DRIFT
PROPOSED 7100 DRIFT
PROPOSED 7100 CROSSCUT
BOUNDARY AT 7100 EL.
BOUNDARY AT 7400 EL.
CHELAN REGION TO BE EXPLORED UNDER D.M.E.A. LOAN AT 7100 ELEVATION
GARNET SCHIST
BIOTITE SCHIST
U.S.L.M. NO. 1
7400 LEVEL
7300 LEVEL
7100 LEVEL
6850 LEVEL
ANNA
BUCKEYE
IOWA
CHICAGO
MCKINLEY
INDIAN CHIEF
COPPER GOLD
PANTHER
ANACONDA
LITTLE QUEEN
QUEEN
DANDY NO. 2
DANDY
COLUMBUS
ST. JOE
IDAHO
UNCLE SAM
W. J. BRYAN
SPRING CREEK
BLACKBIRD CREEK
PATENTED CLAIMS OWNED BY CALERA MINING COMPANY
UNPATENTED CLAIMS OWNED BY CALERA MINING COMPANY
WAREHOUSE
SHOP
OFFICE
CHANGE HOUSE
STEEL SHOP
GARAGE
MILL
COMPRESSOR HOUSE
LEGEND
PROPOSED EXPLORATION PROGRAM:
1. SURFACE TRENCHES
2. SURFACE DIAMOND DRILL HOLES
3. DRIFTS & CROSSCUTS
PROBABLE FAULT BETWEEN BIOTITE SCHIST & GARNET SCHIST.
PATENTED CLAIM LINES
KNOWN MINERALIZATION
CALERA'S INTERPRETATION OF GEOCHEMICAL DATA:
VERY HIGH
HIGH
BACKGROUND
PROPOSED EXPLORATION
CALERA MINING COMPANY
BLACKBIRD DIVISION
COBALT, IDAHO
SCALE: 1 INCH = 200 FEET
CONTOUR INTERVAL: 100 FEET
AUGUST , 1953


NOTE:
CONTOURS, GEOCHEMICAL DATA AND PART OF SURFACE MINERALIZATION TAKEN FROM U.S.G.S. SOURCES.
EXISTING ROADS AND EXPLORATION TRENCHS HAVE BEEN OMITTED FROM THE MAP.
CHELAN NO. 14
CHELAN NO. 15
LEMHI
OLD GOLD
HORSESHOE
JAYCEE
PROPOSED 7400 DRIFT
CHELAN NO. 2
CHELAN NO. 3
CHELAN NO. 7
PROPOSED 7700 DRIFT
BLACKTAIL
ST. LOUIS
UNPATENTED CALERA MINING CLAIMS OWNED BY
CHELAN NO. 4
CHELAN NO. 1
GARNET SCHIST
BIOTITE SCHIST
CHELAN
BROWN BEAR
LITTLE DEER CREEK
PANTHER
7400 LEVEL
7300 LEVEL
6850 LEVEL
7100 LEVEL
U.S.L.M. NO. 1
ANNA
BUCKEYE
PROPOSED 7100 DRIFT
INDIAN GIRL
COPPER GOLD
ANACONDA
CHICAGO
IOWA
PATENTED CLAIMS OWNED BY CALERA MINING COMPANY
MCKINLEY
SPRING CREEK
PROPOSED 7100 CROSSCUT
DANDY NO. 2
W. J. BRYAN
7100 LEVEL
CHELAN NO. 85
6850 LEVEL
MEADOW CREEK
BLACKBIRD CREEK
WAREHOUSE
SHOP
OFFICE
CHANGE HOUSE
STEEL SHOP
GARAGE
MILL
COMPRESSOR HOUSE
LEGEND
PROPOSED EXPLORATION PROGRAM:
1. SURFACE TRENCHES
2. SURFACE DIAMOND DRILL HOLES
3. DRIFTS & CROSSCUTS
PROBABLE FAULT BETWEEN BIOTITE SCHIST & GARNET SCHIST.
PATENTED CLAIM LINES
KNOWN MINERALIZATION
CALERA'S INTERPRETATION OF GEOCHEMICAL DATA:
VERY HIGH
HIGH
BACKGROUND
MAP No. 4
PROPOSED EXPLORATION
CALERA MINING COMPANY
BLACKBIRD DIVISION
COBALT, IDAHO
SCALE: 1 INCH = 200 FEET
CONTOUR INTERVAL: 100 FEET
AUGUST 6, 1953


SECTION A-A'
WORKINGS PROJECTED TO PLANE N35W
SURFACE
EL 7600
EL 7400
EL 7200
EL 7000
EL 6800
PROPOSED 7400 DRIFT
7400 PORTAL
6850 PORTAL
BROWN BEAR
CHICAGO
BLOCK NO. 102
UNCLE SAM
PROPOSED 7100 DRIFT
PROPOSED 7100 CROSSCUT
A
A'
7300 PORTAL
7200 PORTAL
7100 PORTAL
PLAN
MINE MAP
PLAN & LONGITUDINAL SECTION
CALERA MINING CO.
BLACKBIRD DIVISION
SCALE: 1 INCH = 200 FEET
AUGUST, 1953
LEGEND
6850 LEVEL
7000 LEVEL
7100 LEVEL
7200 LEVEL
7300 LEVEL
7400 LEVEL


21000 N
20000 N
19000 N
18000 N
17000 N
16000 N
15000 N
5000 E
4000 E
3000 E
2000 E
1000 E
Proposed 7400 H.W. Drift
8-31-55
7400 Portal
End of present exploration program
Proposed 500 ft. extension of 7400 H.W. Drift (Approx)
7400 Drift North
-450
-400
-350
-300
-250
End of present exploration program
Proposed 1500 ft. extension of 7400 Drift North (Approx)
N
Note:
Map of Self Potential Survey
Current is plotted in millivolts.
CALERA MINING COMPANY
BLACKBIRD DIVISION
TITLE Proposed Extension of 7400 Drift North
SCALE 1" = 200'
DATE 9-8-55
DRAWN BY
DESIGN BY
CHECKED BY
TRACED BY
File No.


15,400 N
15,200 N
15,000 N
14,800 N
4,400 E
4,600 E
4,800 E
5,000 E
5,200 E
540 TRENCH
Limonite & ore in highly altered schistose greite
PROPOSED DRILL HOLE +20°, 350'
DMEA BOUNDARY AT 7135 EL.
7135 EL.
7100 LEVEL 7110 EL.
DMEA BOUNDARY AT 7110 EL.
PROPOSED DRILL HOLE, +20°, 250'
DMEA BOUNDARY AT 7152 EL.
7152 EL.
500' TRENCH
7118 EL.
Limonite and ore zone
7100 LEVEL 7110 EL.
PROPOSED UNDERGROUND DRILLING
1" = 40
JAN. 6/55
DMEA
3143


1000 E
2000 E
3000 E
4000 E
10000 N
8000 N
SURFACE TRENCH 922
SURFACE TRENCH 874
SURFACE TRENCH 844B
SURFACE TRENCH 344
SURFACE TRENCH 738
SURFACE TRENCH 788
SURFACE TRENCH 788B
SURFACE TRENCH 783
DDH 31
DDH 32
DDH 33
DDH 35
PROPOSED DRIFT - AUGUST 1952
SUGGESTED CHANGE IN PROPOSED DRIFT
38°
DMEA PLANE NO. 1
DMEA-3143
CALERA MINING COMPANY
BLACKBIRD DIVISION
PROPOSED 7400 LEVEL and SURFACE TRENCHING
DMEA 3143
SCALE 1" = 200'
DATE 6/3/51
DRAWN BY WCG
ORE
DIKES