EA Form 1

DEFENSE MINERALS EXPLORATION ADMINISTRATION
Control Slip

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DMEA Docket No. 4565

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To:	100	Date	2-6-57
To:	2-25	Date	2-6-57
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DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4565

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(Withdrawn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
(2R) Operator's monthly reports and all attachments (latest on top)
✓ 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

Right Side

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

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

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

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

224 New Customhouse

Denver 2, Colorado

RECEIVED DEC 10 1956 D.M.E.A.

December 7, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Copper-lead-zinc-uranium), Contract Engineering Company (Central Tunnel Project), Clear Creek County, Colorado.

Enclosed are the original and two copies of the subject Application. One copy of the Application is being retained in our file.

The Applicant was informed that we would require his estimated costs per foot for Central Tunnel rehabilitation and for rehabilitation of drifts under development of veins. This information will be forwarded you upon receipt by this office.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver
Executive Officer

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED DEC 10 1956 D.M.E.A.

DMEA
DEPARTMENT OF THE INTERIOR
DEC 6 1956
REGION
DENVER, COLORADO

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. 4565
Metal or Mineral Copper-Lead-Zinc
Date Received 12-10-56
Estimated Cost $200,000
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: CONTRACT ENGINEERING COMPANY, 1727 Boulder St., Denver 11, Colorado. Partnership of Colorado. Partners: Alfred G. Hoyl, Arthur G. Wood, Paul L. Goddard, All 1727 Boulder Street, Denver 11, Colorado

(*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 Leases and options to lease on patented mineral claims in Sections 22, 23, 24, 25, 26, and 27, T 3 S, R 73 W. Detailed list attached.

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

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

(*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. Copies attached.

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

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. None

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

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

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

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

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. Complete and excellent. See included summary, "Lake Mine, Central Tunnel Project."

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Copper, Lead, Zinc, Silver, Gold, and Possibilities of Uranium.

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

(*c*) The work will start within 30 days and be completed within 18 months from the date of an exploration project contract.

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

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)? Yes

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

[X] 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 December 5, 1956

CONTRACT ENGINEERING COMPANY
(Applicant)

By [signature]

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

CONTRACT ENGINEERING COMPANY
1727 Boulder Street
Denver 11, Colorado

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OCT 10 1956
DMEA

DMEA APPLICATION, LAKE MINE, CENTRAL TUNNEL PROJECT

3. Applicant's Property Rights (a) - (b)

Central Tunnel and Associated Properties

Name of Claim	U.S.Survey Number	Mining District
Belman lode	2138	Idaho and Virginia
West Doves Nest lode	6830	Idaho
Jewel, undivided 5/8 interest	1022	Idaho
German	1029	Idaho and Spanish Bar
Anaconda	15279	Idaho, Virginia & Spanish Bar
Big Five	15279	Idaho, Virginia & Spanish Bar
East Shafter	15279	Idaho, Virginia & Spanish Bar
Fanny	15279	Idaho & Spanish Bar
Hortense	15279	Idaho, Virginia & Spanish Bar
Lillie	15279	Idaho, Virginia & Spanish Bar
Lottie	15279	Virginia, Independence & Spanish Bar
Lucy	15279	Idaho, Virginia & Spanish Bar
Margaret	15279	Spanish Bar
Surplus	15279	Idaho, Virginia & Spanish Bar
U. S.	15279	Spanish Bar & Virginia
Carrie	2306	Spanish Bar & Idaho
Crystal	50	Idaho
Crystal	838-A	Idaho
Dump	6389	Idaho
Fulton Extensionm	5806	Spanish Bar, Idaho & Payne's Bar
Ben Franklin	6467	Idaho
Great Center	6467	Idaho
Lilly Belle	6467	Idaho
Mono Extension	6467	Idaho
Quincey	6467	Idaho
Uncle Sam	6467	Idaho
Seaton Extension	235	Idaho
Clear Creek	8579	Jackson
McMickle	1147	Jackson
Tunnel	17125	Spanish Bar & Payne's Bar
Bobby Burns	16549	Idaho & Independence
Herstoral	1186	Idaho
Little Billie	16284	Idaho
Little Chief	2292	Payne's Bar
Little Johnny	16784	Idaho
Luck Strike	16569	Spanish Bar
Whale	14397	Lincoln

Below a depth of one thousand (1,000) feet from surface of the following claims:

Bald Eagle Lode	1758	Virginia
Bald Eagle Extension	1759	Idaho
Doves Nest	5947	Idaho
Emma	7261	Idaho

CONTRACT ENGINEERING COMPANY
1727 Boulder Street
Denver 11, Colorado

DMEA APPLICATION, LAKE MINE, CENTRAL TUNNEL PROJECT

Central Tunnel and Associated Properties, Continued

Name of Claim	U.S.Survey Number	Mining District
O'Conner	6821	Idaho
Peck	7261	Idaho
Post	6821	Idaho
Silver Link	7261	Idaho
W. P. R.	6821	Idaho

Together with the entire Central or Big Five Tunnel, mill site and tailing disposal area.

Lake Mine

Name of Claim	U.S.Survey Number	Mining District
Lake	170	Virginia
Lake West	1272	Idaho
Tarifa	8949	Idaho
Lakeside	1234	Idaho
Tarik	8950	Idaho
East Lake	6820	Idaho

(That portion in Clear Creek County, Colorado)

Windsor Castle Mine

The Windsor Castle Lode Mining Claim, U. S. Mineral Survey No. 1523

Crown Point and Virginia Mine

Crown Point and Virginia Lode Mining Claim, U. S. Mineral Survey No. 601.

Bantala Lode Mining Claim, U. S. Mineral Survey No. 1927.

5. The Exploration Project (a)

Though no commercial deposits of uranium have been discovered in the immediate area, pockets of pitchblende have been found, and there are abundant signs of uranium. The possibilities at depth have been explored only slightly.

5. (d) Alfred G. Hoyl, Mining and Geological Engineer
Graduate, Colorado School of Mines
20Years of Technical and Practical Experience

Arthur G. Wood, Mining Engineer
Graduate, Colorado School of Mines
15 Years of Technical and Practical Experience

CONTRACT ENGINEERING COMPANY
1727 Boulder Street
Denver 11, Colorado

DMEA APPLICATION, LAKE MINE, CENTRAL TUNNEL PROJECT

5. (d) Continued

Paul L. Goddard, Geologist
Graduate, Colorado School of Mines
15 Years of Technical and Practical Experience

6. Estimate of Costs (a)

An alternate to the ventilation raise proposed would be a large diameter drill hole, (12" - 16"). The drilling depth would be 1300' to 1700', depending on the site chosen. The estimated cost based on a contract charge of $25.00 per hour would be $20.00 per foot or a maximum cost of $34,000.

6. (b) - (h) These costs are included in the attached summary and are shown as maximum costs. It is probable that they can be decreased.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

IDAHO SPRINGS, COLORADO

BY

CONTRACT ENGINEERING COMPANY

OCTOBER 1, 1956

RECEIVED
DEC 10 1956
U.E.A.

THIS SUMMARY SUPERSEDES "THE LAKE MINE PROJECT" DATED APRIL 1, 1956

THE LAKE MINE, CENTRAL TUNNEL PROJECT

IDAHO SPRINGS, COLORADO

GENERAL:

The Lake Mine, Central Tunnel Project is concerned with two strong, highly mineralized veins containing gold, silver, copper, lead and zinc. These veins are undercut by the Central Tunnel 1,200 to 1,600 feet below the surface.

The project is in the Front Range of the Rocky Mountains near Idaho Springs, Colorado. The ore occurs in shoots raking to the west along the veins. These shoots have been mined profitably at the surface and tunnel levels. The intermediate area has not been touched, and approximately 1,000 to 1,200 feet of virgin ground exists in the several ore shoots.

The location and relative position of the Central Tunnel and the veins of the project are shown on Map No. 1. Cross sections of the veins are shown on Maps No. 2 and No. 3.

The history of the mines is well known, and adequate records exist from which probable ore reserves and ore values can be calculated. A difficult ventilation problem has prevented the mining of the main volume of ore to date. Present metal prices, particularly the high price of copper, combined with modern mining equipment and methods, make it possible to resume mining at a profit in the strong veins cut by the Central Tunnel.

The upper part of the Bald Eagle Mine is now in operation and is shipping approximately fifty tons of ore per day. The gross recoverable value is $32.40 per ton. Overall costs are approximately $20 per ton and the net profit is $12.40 per ton. These figures include transportation, milling, smelting, and royalties, and allow for mill and smelter losses and penalties. Production from the upper part of the Bald Eagle during 1956 has been over five thousand tons.

Over 600,000 tons of inferred ore is calculated as available. The potential profit from this ore before income taxes is in the excess of seven million dollars.

The proposed mining program would extend from ten to fifteen years. The location of the properties and climate is ideal, and it would be possible to obtain and keep exceptional personnel.

CONCLUSIONS:

The Lake Mine, Central Tunnel Project is a mining situation with good profit possibilities.

The risk involved is far less than in most mining ventures.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

The timing is right for the project, and with adequate financing, long range development, and careful engineering and management, it should succeed.

The project is to be organized so all original investment is spent only on mining and producing ore. No one will benefit unless a profit is made on the project.

PROPERTIES:

Map No. 1 shows the position of the two veins with respect to the Central Tunnel. The important properties are the Lake, Windsor Castle, Bald Eagle, Doves Nest, West Doves Nest, Belman, and the Crown Point and Virginia. The Lake, Windsor Castle, West Doves Nest, and Belman are under long term lease in their entirety.

The Doves Nest and Bald Eagle properties are under long term lease for that portion one thousand feet below the surface. The Crown Point and Virginia property is under option for a long term lease in its entirety.

The Central Tunnel and sufficient area for a mill site and tailings disposal is under long term lease.

In all, fifty-four patented claims are held under lease. However, the above mentioned claims are the most important to the project.

All of the leases and the option are held by the Contract Engineering Company.

The properties are subject to a 10 to 12½ per cent royalty.

LOCATION:

The Lake Mine, Central Tunnel Project is in Clear Creek County, Colorado, near Idaho Springs at an elevation of 7,500 feet. It is thirty-five miles from Denver over excellent paved roads. The lower levels of the mines are reached through the Big Five or Central Tunnel with its portal in Idaho Springs. The upper levels are reached through tunnels opening in Virginia Canyon.

The climate is ideal, living conditions are ideal, and year-around operations entirely feasible.

GEOLOGY:

The geology of the area is well known, and many excellent professional writings on the area are available.

The schists and granite gneiss of Pre-Cambrian age are the most abundant rocks in the district. Early tertiary intrusive porphyries are abundant in the mineralized areas and are genetically related to the mineralized veins.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

The two veins are strong and well-defined, fissure-filled veins. The vein walls are strong and hold up well during mining.

The oxidized zone is shallow with sulphide ores occurring almost at the surface. The ores occur in the sulphide or mesothermal zone of deposition and would be considered primary.

In the strong veins of the district, the ultimate depth of the ore has not been reached, and there seems to be no striking change in the character of the ore with depth. As shown by the assay maps, the ore at depth is as rich as that near the surface.

The veins are not uniformly mineralized, and the commercial ore occurs in zones or shoots which rake to the west.

HISTORY:

In the early 1900's the Central Tunnel was driven from Idaho Springs north approximately 9,500 feet to undercut the vein systems of the district including those in this project. The tunnel was for drainage, haulage, and to develop 1,000 to 1,600 feet of additional mining height on the proven veins.

Ventilation was provided by air duct and blowers from the Central Tunnel portal. As stopes were opened up on the tunnel level in the various veins, the ventilation became inadequate and operations were forced to stop.

In 1926-1928 the owners of the Lake Mine rehabilitated the Central Tunnel and the lower level of the Lake Mine and prepared for production. The 1929 crash and resulting depression prevented their connecting through to the surface to obtain adequate ventilation, and the work was stopped. In 1940-1942 an attempt was made to put the properties into production by Mr. Heckendorf of Denver, Colorado. The advent of World War II with restrictions on gold and silver mining stopped the operation.

In 1953 and 1954 the Atomic Uranium Corporation partially rehabilitated the Central Tunnel; however, no attempt was made to reach the important properties. The East Lake and Lake Tunnel No. 1 properties high above the Central Tunnel level have been worked by lessees almost continuously to the present. A fair tonnage of good ore has been produced on a small scale from these upper workings.

The history of the successful mines served by the Central Tunnel is essentially the same. The upper areas were worked profitably. The Central Tunnel levels were worked profitably until lack of ventilation forced them to stop. The large in-between areas could not be worked at a profit until a connection was made to the surface near the inner end of the tunnel which would provide adequate ventilation. This has not been done to date.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

It is important to note that in the early operations most of the copper and zonc was not recovered. Today it is feasible to recover these minerals and their value is an important addition to the economy of the project.

Considerable work will be required to provide access to the exposed ore and to place the Central Tunnel and the properties into operation.

A large amount of information about the area and the individual mines exists. Maps, correspondence, assays, mill and smelter returns are available. All of this information has been utilized in preparing this summary.

ORE RESERVES:

Maps No. 2 and No. 3 are cross sections on the two major veins included in the project. The ore shoots, the mined areas, and the inferred ore are shown. The squares are 200 feet on a side. The ore is from two to four feet wide in the veins, but is taken as two feet for calculation of reserves to allow for lean and barren areas. The ore zone is assumed to extend 400 feet below the Central Tunnel level. The inferred ore reserves in tons are as follows:

MINES UNDER LONG TERM LEASE	TONS	
Lake	132,000	
Windsor Castle	59,000	
Bald Eagle	53,000	
Doves Nest	79,000	
West Doves Nest	73,000	
Belman	92,000	
Total Tons of Crude Ore in Mines Under Long Term Lease		488,000
MINES UNDER OPTION TO LEASE		
Crown Point and Virginia	138,000	
Total Tons of Crude Ore in Mines Under Option to Lease		138,000
TOTAL TONS OF CRUDE ORE		626,000

THE LAKE MINE, CENTRAL TUNNEL PROJECT

The recoverable value of this ore is taken as $32.00 per ton. This has been calculated as shown under "Economics" from actual current smelter returns from the Bald Eagle, assay maps, recalculated previous smelter returns, and past production records.

Mill recoveries, smelter losses and deductions are taken into consideration and are up-to-date and accurate. The possibility of obtaining additional adjacent properties is good, and additional tonnage is probable. The records, assay maps, and smelter returns are available for verification.

OPERATION:

The proposed operation no contemplates rehabilitating the Central Tunnel and erecting ore bins at the tunnel portal. When the rehabilitation reaches the Windsor Castle property, an air shaft will be raised to the surface as shown on Map No. 2. Ventilation air must be piped in from the tunnel portal during this phase of the project. Temporary electric power for a small compressor will be carried in with the ventilation pipe. This equipment will be re-used in the stopes when an air shaft is completed.

Upon completion of the air shaft, electric power will be brought down the shaft, and an electric powered compressor and ventilation station constructed underground at a central location to serve the stopes in the various ore shoots.

Since the air shaft rises through the Windsor Castle ore shoot, development and mining of this ore will start first. The development of the Lake and Belman ore shoots will follow immediately, and the Bald Eagle, West Doves Nest, Doves Nest, and Crown Point and Virginia will follow as soon as practicable.

A large diameter drill hole for ventilation and power lines direct from the surface to the Central Tunnel is under study and consideration. This plan would have distinct cost and time advantages, but would be difficult to execute.

As stopes are developed and mining commenced, a minimum production of one hundred tons per day is planned. A ten to fifteen year program is contemplated.

Clean up of the Central Tunnel was started September 2, 1956, and is now in progress.

MILLING AND SMELTING:

The Front Range Mines, Inc., of Denver, Colorado, operates a fairly efficient mill at Dumont, Colorado, on a custom basis of $5.00 per ton of ore milled. This mill is within five miles of the Central Tunnel portal.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

The economics of the project are based on the recovery and costs of this mill, as it is now operating successfully, and using its facilities would not involve any additional capital investment.

The realization of a stable, long-term tonnage would justify the owners in improving the capacity and recovery of the mill, and the mill could be developed into a first class operation.

The Front Range Mines mill is now milling fifty tons per day of ore from the Bald Eagle Mine.

Near the portal of the Central Tunnel there are a mill site and tailings disposal area under our control. As the project advances, it may prove wise and economical to build and operate a mill in conjunction with the project.

THE LAKE MINE, CENTRAL TUNNEL PROJECT

ECONOMICS:

Gross Recoverable Value per Ton of Crude Ore

Lake Mine, Based on Assay Maps and Records	$33.20	
Bald Eagle, Based on 1956 Smelter Returns	32.40	
Windsor Castle, Based on Updated Smelter Returns	44.50	
Belman, Based on Assay Maps and Records		
Average Taken as		$32.00

Production Costs per Ton of Crude Ore

Mining	$ 9.00	
Crude Ore Hauling	.50	
Milling	5.00	
Concentrate Hauling	1.00	
Smelting	2.00	
Royalties	2.50	
Total		$20.00

Gross Profit per Ton of Crude Ore

$12.00

Estimated Rehabilitation and Development Cost

Rehabilitation Central Tunnel	$60,000	
Raise to the Surface, 1100' @ $40.00/ft.	44,000	
Development in Veins	50,000	
Reserve for Contingencies	46,000	
Total		$200,000.00

PROFIT SUMMARY

Gross Recoverable Value of Ore, 488,000 tons @ $32.00/ton	$15,616,000
Production Cost, 488,000 tons @ $20.00/ton	9,760,000
Gross Profit, $12.00/ton	5,856,000
Repayment of Original Costs	200,000
Net Profit, before Income Taxes	$5,656,000

THE LAKE MINE, CENTRAL TUNNEL PROJECT

The Crown Point and Virginia, and the Bantala properties are under option to lease, and would provide an additional 138,000 tons of ore. Assuming the same average gross profit of $12.00 per ton for this ore, and a $100,000 expense to reach the ore from the Central Tunnel, an additional profit of $1,556,000 may be calculated. The overall profit potential may be in excess of $7,000,000 before taxes.

Should it be deemed adviseable as the project proceeds to erect a mill, a site is available as shown on Map No. 1. The cost of the mill could be amortized from the $5.00 per ton milling cost.

CONTRACT ENGINEERING COMPANY

Alfred G. Hoyl

Alfred G. Hoyl

LEASE

CENTRAL TUNNEL AND ASSOCIATED PROPERTIES

RECEIVED
DEC 10 1956
D.M.E.A.

MINING LEASE

THIS AGREEMENT OF LEASE, Made and entered into this 2nd day of March, A. D. 1956, by and between GOLD URANIUM MINING COMPANY, a Colorado corporation, of 405 Interstate Trust Building, Denver, Colorado, hereinafter called the lessor, and CONTRACT ENGINEERING COMPANY, a partnership, filed in Denver, Colorado, of 1727 Boulder Street, Denver 11, Colorado, hereinafter called the lessee;

WITNESSETH, that the said lessor, for and in consideration of the rents, royalties, covenants and agreements hereinafter expressed to be paid, kept and performed by the said lessee, has leased, let and demised and by these presents does lease, let and demise unto said lessee the following described mining claims, property, Central tunnel and premises, situate in the mining districts shown below, Clear Creek County, State of Colorado, to-wit:

Name of Claim	U.S.Survey Number	Mining District
Belmont lode	2138	Idaho and Virginia
West Bowes Nest lode	6830	Idaho
Jewel, undivided 5/8 interest	1022	Idaho
German	1029	Idaho & Spanish Bar
Anaconda	15279	Idaho, Virginia & Spanish Bar
Big Five	15279	Idaho,Virginia & Spanish Bar
East Shafter	15279	Idaho,Virginia & Spanish Bar
Fanny	15279	Idaho & Spanish Bar
Mortemse	15279	Idaho, Virginia & Spanish Bar
Lillie	15279	Idaho, Virginia & Spanish Bar
Lettie	15279	Virginia, Independence & Spanish Bar
Lucy	15279	Idaho, Virginia & Spanish Bar
Margaret	15279	Spanish Bar
Surplus	15279	Idaho, Virginia & Spanish Bar
U. S.	15279	Spanish Bar & Virginia
Carrie	2306	Spanish Bar & Idaho
Crystal	90	Idaho
Crystal	838-A	Idaho
Dump	6389	Idaho
Fulton Extension	5806	Spanish Bar, Idaho & Payne's Bar
Ben Franklin	6467	Idaho
Great Center	6467	Idaho
Lilly Belle	6467	Idaho
Mone Extension	6467	Idaho
Quincey	6467	Idaho
Uncle Sam	6467	Idaho
Seaton Extension	235	Idaho
Clear Creek	8579	Jackson
McMickle	1147	Jackson
Tunnel	17125	Spanish Bar & Payne's Bar
Bobby Burns	16549	Idaho & Independence
Hersteral	1186	Idaho
Little Billie	16284	Idaho
Little Chief	2292	Payne's Bar
Little Johnny	16784	Idaho
Luck Strike	16569	Spanish Bar
Whale	14397	Lincoln

Below a depth of one thousand (1,000) feet from surface of the following claims:

Name of Claim	U.S. Survey Number	Mining District
Bald Eagle lode	1758	Virginia
Bald Eagle Extension	1759	Idaho
Doves Nest	5947	Idaho
Emma	7261	Idaho
O'Connor	6821	Idaho
Peck	7261	Idaho
Post	6821	Idaho
Silver Link	7261	Idaho
W. P. R.	6821	Idaho

Together with the entire Central or Big Five Tunnel.

Subject, however, to the rights and interest of Edgar Gold Mines, Incorporated, in and to certain portions of the above described premises as set forth in certain written instruments, to which instruments lessee is referred for complete information as to such rights and interests; and also subject to the rights and interest of the Colorado School of Mines which has leased from Edgar Gold Mines, Incorporated, certain claims; and also subject to any and all rights of way or ditch rights, if any, heretofore granted on said properties.

TO HAVE AND TO HOLD the above described premises for the purpose of mining, to the 2nd day of March, A. D. 1961, unless sooner forfeited or terminated through the violation of any of the covenants and conditions herein contained, with no power to assign this lease or any part thereof or to sublet the whole or any part of said leased premises without the written consent of the said lessor first had and obtained, except that within one (1) year only from date hereof lessee may make one assignment of this entire lease to a corporation or to an individual to operate the demised premises; and when this lease is so assigned, the lessee herein is automatically relieved from any liability thereafter.

The said lessee in consideration of the premises has covenanted, contracted and agreed to and with the said lessor, its successors and assigns, as follows:

1. To immediately begin studying, planning and organizing a plan of development, including the performance of engineering and geological work necessary to properly appraise and evaluate the properties for the development of ore and/or minerals, and the formulation of a development and mining program, and within six (6) months after date hereof to either release the lessor from this lease agreement and give up all rights herein expressed or implied, or commence the actual work of providing ventilation through the Central Tunnel by means of a large drill hole, sinking a shaft or some other accepted manner, said ventilation to be accomplished in not to exceed one (1) year from date hereof. After said ventilation is provided, and not more than one (1) year

from date hereof, rehabilitation of the said Central Tunnel is to be commenced, said tunnel to be ready for operation within one (1) year and six (6) months from date hereof.

As a consideration for holding said properties idle during the period of organization and rehabilitation, lessee agrees to pay to lessor, on or before one (1) year from date hereof the sum of six hundred dollars ($600) as an advance royalty for the year ending September 2, 1957.

2. On or before September 2, 1957, lessee agrees to enter upon said leased premises and to work the same in manner necessary to good and economical mining, so as to take out and sell the greatest amount of ore possible, with due regard to the development and preservation of said mining premises as a workable mining property and to the special covenants herein contained.

3. To work and mine said premises as aforesaid, steadily and continuously during the period of this lease and in doing said work to perform at least seventy-five (75) days' mining labor per month during the life of this lease, unless prevented by strikes or other conditions over which the lessee has no control.

4. All of the workings through which the lessee may work shall be well and sufficiently timbered in accordance with good mining practice, and all timbering in said workings which may be rendered insufficient by any cause whatsoever shall be repaired or replaced promptly; and the timbering of said workings shall at all times be kept in good and safe condition.

5. All work shall be done so as not to endanger the maintenance of main haulage ways.

6. The lessor or its agent has the right to enter and visit all parts of the premises and workings thereon for the purpose of inspection, taking assays, or having surveys made of the workings, and lessee agrees to render to said parties proper assistance in making such inspection, surveys or examination.

7. Lessee agrees to occupy and hold as the property of the lessor all cross and parallel lodes, spurs and mineral deposits of every kind which may be uncovered, disclosed or discovered within said leased ground by the said lessee or any person or persons under or in privity with it, with privilege to said lessee to work and mine the same as part and parcel of said premises. Said lessee agrees to promptly notify the lessor of all such discoveries.

8. To do no breaking of ore or rock within six (6) feet of any working shaft.

9. It is expressly understood and agreed that the lessor reserves the property and right of property in and to all ores and minerals extracted from said premises during the period of this lease, but that the same may be shipped to a smelter or other ore buyer in the name of the lessee, and that said lessee covenants and agrees to pay and allow the lessor as royalty upon all ores so mined, shipped or sold from said leased premises in any manner during the life of this lease twelve and one half per cent (12½%) of the net smelter returns, and that said lessee will instruct the smelter or other ore buyer to deduct 12½% royalty from its settlement on each ore shipment and to

send check for said 12½% direct to lessor, payable to it, accompanied by two (2) copies of the ore settlement.

All royalty settlements to be made upon the smelter, mill or other ore buyer net assay values, deducting therefrom only the actual cost of surface transportation and treatment charges paid by lessee.

10. The lessee shall and hereby does assume all responsibility in case of accident or occupational disease to its employees or any persons employed in or about said property by lessee or by others with its express or implied consent, and agrees to take out and keep in force ample workmen's compensation insurance and public liability insurance.

11. Lessee covenants and agrees to comply with all Federal and State laws and regulations which may, at any time during the continuance hereof, be in effect relating to or appertaining to the operations hereunder, including the construction of tailings ponds and adequate and efficient protection from stream pollution from such operations.

12. Lessee agrees to pay three fourths (3/4ths) of all taxes assessed against said leased premises for the year 1956, and all of the taxes assessed against said leased premises, including taxes on ores shipped, beginning with the taxes assessed for the year 1957, and to pay all taxes assessed against its machinery and equipment and other improvements placed upon said premises; each party to pay its share of any future severance State tax; and each party to take depletion for income tax purposes on its respective portion of ore receipts.

However, if lessee does not go ahead with this lease after six (6) months from date hereof, it is not obligated to pay any taxes except those on its production, if any.

13. All bills and expenses, including taxes, incurred by the lessee or those in privity with it shall be promptly paid by the lessee, and by said prompt payment said lessee shall prevent the filing of any and all liens against said demised premises; and, if by any reason of the failure of said lessee to pay such bills or expenses, any lien or liens shall be filed against said premises, the said lessor may at its option forthwith pay off and discharge the same, and the said lessee held bound to pay to said lessor all sums so advanced or paid to clear said premises from liens which may be filed as aforesaid, and the said lessor lessor may also at its election declare a forfeiture of this lease because of the filing of any such lien, if lessee does not pay such obligatiopromptly after a decision of the court.

The giving of a purchase money mortgage for equipment placed on the demised premises shall not constitute a violation of this section.

14. The lessee will at all times keep conspicuously posted on the leased premises notices as provided for in Chapter 101, Sec. 19 of Colorado Statutes Annotated 1935.

15. The lessee covenants that no person not in privity with the parties hereto shall be allowed to hold possession of said premises or any part thereof under any pretext whatsoever.

16. Lessee covenants and agrees to keep all necessary books and records to show all work done on the leased premises, and to promptly advise lessor when each shipment of ore is made, giving the date and car numbers of each such shipment and the name of the consignee thereof; all of such books and records of lessee shall be open for the inspection of lessor during all business hours at the principal mine office on the demised premises. Lessee

agrees to make quarterly reports to lessor during the organization and development period, and to make monthly reports during production.

17. Lessee agrees to deliver to said lessor quiet and peaceable possession of said demised premises in good order and condition with all drifts, tunnels and other passages used by lessee thoroughly drained and cleared of loose rock and rubbish, except that portion below the Central tunnel, and only if actual operations have been commenced and only that portion which has been rehabilitated or worked, and said premises ready for immediate continued working, without demand or further notice on the 2nd day of March, A. D. 1961, at noon, or at any time previous thereto, upon demand for forfeiture, and it is mutually understood and agreed that all machinery and tools which may be placed upon said premises by the lessee may be removed therefrom within six (6) months after the termination of this lease; provided, however, that no such tools or machinery shall be so removed while the said lessee may be in any manner indebted to the said lessor under any obligation incurred under this lease.

18. Upon the violation of any covenant or condition herein contained, this lease shall, at the option of said lessor, expire and terminate, and the said premises with the appurtenances and all buildings and other improvements shall become forfeited to the lessor, provided said lessor shall give sixty (60) days' written notice to lessee of the default or defaults complained of and unless within said sixty (60) days lessee shall correct said default, and the said lessor or its agent may thereupon, after demand in writing for possession, enter upon said premises and dispossess all persons occupying the same, with or without force, and with or without process of law, or at the option of the lessor the said lessee and all persons found occupying said premises or any part thereof may be proceeded against as guilty of unlawful detainer.

IT IS MUTUALLY AGREED by and between the lessor and the lessee hereunder, as follows, to-wit:

a. The lessor hereby reserves the right to use at its own expense said Central tunnel during the life of this lease for ingress and egress and for bringing in labor and materials and taking out labor, ores, waste and other materials used in mining. Said use is to extend to others who have or will have contracted with said lessor for use of said tunnel and facilities, this applying especially to Edgar Gold Mines Incorporated, and its assigns, in accordance with an agreement made with it on March 17, 1950 for use of said tunnel. However, lessee shall have priority in the movement of labor, materials, waste and ore, and the right to schedule. The lessee must keep said tunnel serviceable. All users of the tunnel are to pay their proportionate share of the maintenance.

b. Lessee is hereby given the right to continue the Central tunnel at its expense but if lessee has not commenced this extension by [illegible], 1959, lessor may extend said tunnel at its expense, but is under no obligation to do so. And said lessor may use said tunnel as stated in paragraph [illegible] above for said extension work.

c. Lessee has the right to drop from this lease and agreement any individual claims which it deems unprofitable or for any other reason, and said lessor, its successors or assigns will then have the right to work said claims through the Central tunnel if desired, and agrees from its re-possession of said claims to pay the taxes on same - that is, to pay the taxes assessed after said lessee hereunder drops said claims.

d. Lessee has the right to mine through the Central or Big Five tunnel other properties not included in this lease which it may own or lease.

e. It is understood that this lease does not include any dumps on the surface of any of the properties herein mentioned. The lessor or its assigns shall have ingress or egress over the mining properties and be permitted to mill, manufacture, and remove ore, and to erect and/or remove buildings, of every nature whatsoever. The buildings mentioned in this clause do not refer to any buildings which may be erected by lessee.

f. It is understood that this lease does not cover any property where the proposed federal or state highway is to run, nor does it have any connection or consideration pertaining to any dealings or settlements with the Colorado Highway Department, or the Town of Idaho Springs, Colorado.

g. It is understood that negotiations are under way with the Colorado Highway Department for lands owned by Hanearrow Corporation and Idaho Springs Sand and Gravel Company; and lessor agrees that within thirty (30) days from date hereof it will arrange with these two companies to enter into a lease agreement with lessee permitting it to use the present dump pile and any land left over for a tailings pond. Said tailings pond if constructed by lessee to belong to whichever corporation furnishes the land for same, and lessee to use said tailings pond without charge.

h. Lessor agrees that it will arrange with Hanearrow Corporation and/or Idaho Springs Sand and Gravel Company to furnish space to lessee on which it may construct a mill, after the Highway Department takes what land it needs.

Time is of the essence of this agreement, and each and every clause of this indenture and all the covenants and conditions contained herein, expressed or implied, shall extend to the successors, heirs, executors, administrators and lawful assigns of the parties hereto.

IN WITNESS WHEREOF the parties hereto have hereunto subscribed their respective names the day and year first above written.

GOLD BRANCH MINING COMPANY

By

George S. Groves, President

LESSOR

CONTRACT ENGINEERING COMPANY

By

Alfred G. Hayl

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

On the _____ day of March, in the year 1956, before me personally came GEORGE S. GROVES, to me known, who, being by me duly sworn, did depose and say that he resides in Goodsprings, Nevada; that he is the president of GOLD URANIUM MINING COMPANY, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation; and that he signed his name thereto by like order.

_____
Notary Public

My commission expires: _____.

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this _____ day of March, 1956, by Alfred G. Mayl_____ of CONTRACT ENGINEERING COMPANY, a partnership, on behalf of said company.

_____
Notary Public

My commission expires: _____.

LEASE

LAKE MINE

No. 90. MINING LEASE—Short Form. —Bradford-Robinson Ptg. Co., Mfrs. Robinson's Legal Blanks, 1224-28 Stout St., Denver, Colorado

THIS INDENTURE, Made this Second (2nd) day of July in the year of our Lord one thousand nine hundred and fifty-six (1956) between Robert H. Sayre, of Denver, Colorado, and J. Churchill Owen, Trustee, of Denver, Colorado, jointly Lessors, parties of the first part, and Contract Engineering Company, a copartnership, of Denver, Colorado, Lessee, party of the second part, WITNESSETH, that the said parties of the first part, for and in consideration of the rents, covenants and agreements hereinafter expressed to be paid, kept and performed by the said party of the second part, have leased, let and demised, and by these presents do lease, let and demise unto the said party of the second part, the following described premises, situate, lying and being in Idaho or Virginia Mining District, in the County of Clear Creek and State of Colorado, to-wit:

Lake Mining Claim, U.S.M.S., No.	170,	Virginia	Mining	District
Lake West Mining Claim, U.S.M.S.	1272,	Idaho	"	"
Tarifa Mining Claim, U.S.M.S.	8949,	"	"	"
Lakeside Mining Claim, U.S.M.S.	1234,	"	"	"
Tarik Mining Claim, U.S.M.S.	8950,	"	"	"
East Lake Mining Claim, U.S.M.S.	6820,	"	"	"

(That portion in Clear Creek County, Colorado)

Subject, however, to any and all rights, so long as they may exist, granted by parties of the first part to Messrs. Denison and Quintana by a lease and option to them on a part (upper horizon) of the East Lake Mining Claim.

The said lease to Denison and Quintana covers the following parts of the East Lake and Tarik claims and this lease is subject to the rights of said lessees in: A block on the vein, extending easterly from the mouth of the lower East Lake Tunnel to the east end line of said East Lake Mining Claim and extending down from the surface to a horizontal line 400 feet below the mouth of the said lower East Lake Tunnel.

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TO HAVE AND TO HOLD THE SAME, for the purpose of mining, for the term of ending March 2, 1981, unless sooner terminated under any of the provisions herein contained, with no power to assign this lease or any interest thereunder, or to sublet the whole or any part of said premises except upon the written consent of the parties of the first part, except that prior to March 2, 1957, Lessee may make one assignment of this entire lease, and such assignment shall automatically relieve this Lessee from any liability thereafter. *

And the said party of the second part, for and in consideration of the leasing of said premises, covenants and agrees with said parties of the first part to commence work on said premises as hereinafter set forth, actual extraction of ore to commence by September 2, 1957 and thereafter to work the same continuously, in a thorough and workmanlike manner, employing at least six (6) men underground,

* Provided, that such assignment and release shall become effective only upon notice of such assignment, with details, being given by Lessee to Lessors.

and working at least One hundred fifty (150) shifts each calendar month; to keep the same securely timbered, drained and clear of loose rock and rubbish; to keep accurate accounts, and to render monthly statements to the said part ies of the first part, their agent or attorney, showing the amount and character of work done, and to pay to said part ies of the first part, their agent, or attorney, as rental for said premises royalty upon all ore taken and sold therefrom as follows, to-wit:

A royalty of ten per cent (10%) on all ores extracted from said premises during the term hereof.

Party of the second part agrees to deliver to parties of the first part on or before the 20th day of each month written reports in duplicate, covering number of shifts worked, number and amount of shipments made, and scope of work done during preceding month.

The parties understand that Lessee has obtained a lease (until March 2, 1981) from Gold Uranium Mining Company for the Central or Big Five Tunnel and for a number of mining claims tapped by or in or around such tunnel; that the development of the claims covered by this lease depends upon Lessee providing ventilation for and rehabilitation of said tunnel; and that Lessee has, under such lease of the Central Tunnel, until September 2, 1957, to accomplish such ventilation and rehabilitation, and Lessee must do certain work to that end.

Parties hereto agree that, so long as Lessee shall do the work and keep alive said Central Tunnel lease, this lease shall remain in force and effect, and that no work on the claims covered hereby shall then be necessary until September 2, 1957. If Lessee shall forfeit and lose said lease from Gold Uranium Mining Company, then this lease shall automatically terminate.

And it is expressly understood and agreed by and between the parties hereto, that the said part ies of the first part reserve the property and right of property in and to all ores extracted from said premises during the term hereof, and the sampling works, mill, smelter, or ore buyer purchasing any such ore shall retain the amount of the royalty herein stated and shall pay the same to the part ies of the first part at each settlement for ore purchased.

The royalties due and payable to the parties of the first part herein shall be paid direct to Robert H. Sayre, of the parties of the first part, at his address, 507 Boston Building, Denver 2, Colorado, by any sampling works, mill, smelter, or ore buyer purchasing any such ore, and each such payment shall be accompanied by a copy of the settlement sheet covering each shipment, and all settlements for royalty shall be made upon the assay value of the mineral in the ore that may be taken from said premises less the actual cost of transportation and treatment, including milling, concentration, smelting and/or refining.

And the said party of the second part furthermore covenant and agree that the said parties of the first part, their agent or attorney, shall have the right at any and all times to [illegible] and into any and all parts of said premises to inspect the same, make surveys thereof, [illegible] form, and that the said party of the second part will render to them his [illegible] power [illegible] Also the said party of the second part further[illegible] and hold all side veins, spurs, leders, cross [illegible], parallel [illegible] which may be discovered by the said party of the second part [illegible] him [illegible] by working within or from the [illegible] said [illegible] parties of the first [illegible] as part of the premises [illegible] [illegible] possession of [illegible] [illegible] on account of the production of ore under this lease.

The said party of the second part hereby promises and agrees that he will apply for, obtain and maintain adequate statutory workmen's compensation or industrial insurance for all employees [illegible] and carry such insurance with the State Compensation Insurance Fund of the State of Colorado, Denver, Colorado, and further the said party of the second part herewith promises and agrees to keep the within described premises with a Notice of No liability to first parties for labor and materials furnished. Said party of the second part also agrees to save parties of the first part harmless from any liability, whatsoever, from second party's operations, and to conform to all Federal regulations or requirements governing employment, and concerning deductions for social security, withholdings, and other taxes.

And the said party of the second part furthermore covenants and agrees that in case he fails in any respect to keep and fulfill any one or more of the covenants or agreements herein expressed or implied then, and in that case it shall be lawful for the said parties of the first part, their agent or attorney, to declare said term ended, and with or without process of law to enter upon and take possession of said premises, and in such case, and also at the expiration of this lease by limitation, said party of the second part agrees to surrender, yield and deliver to said parties of the first part quiet and peaceable possession of said premises in good condition, and that time shall be of the essence hereof, and that all of the covenants and agreements herein contained shall extend to and be binding upon the heirs, executors, administrators, successors and lawful assigns of the respective parties hereto.

IN WITNESS WHEREOF, The parties hereto have executed these presents the day and year first above written.

..... [SEAL]

..... [SEAL]

..... [SEAL]

..... [SEAL]

..... [SEAL]

..... [SEAL]

ASSIGNMENT OF LEASE AND LEASE

WINDSOR CASTLE MINE

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ASSIGNMENT OF MINING LEASE

GEORGE A. SKEEN, of Georgetown, Colorado, hereby assigns and transfers to CONTRACT ENGINEERING COMPANY, of Denver, Colorado, the lease and all of his rights, title, and interest under and by virtue of the lease, such lease being the Mining Lease given in June, 1955, by G. E. Cotton, Mrs. Dixie Cotton, Dorothy Cotton Rice, Mildred Cotton Ware, and Margaret Cotton Skeen, as owners of THE WINDSOR CASTLE LODE MINING CLAIM, U. S. Mineral Survey No. 152, and as Lessors, and running to George A. Skeen, as Lessee.

George A. Skeen hereby states and warrants that said lease is in good standing, that he is not in default thereunder, that he has full power to assign such Mining Lease, that he has made no prior assignment thereof, and that Contract Engineering Company may, hereunder, enter upon said property with all the rights and privileges (except as to amount of royalty and as to work requirements) as though said Contract Engineering Company had been originally named as Lessee in said Mining Lease; and, further, that Contract Engineering Company shall have the same full and unrestricted right to assign said Mining Lease, subject to the terms of said lease and to the terms of this assignment thereof.

Contract Engineering Company hereby accepts this assignment of said Mining Lease, and agrees to be bound by all of the terms thereof as fully as though Contract Engineering Company had been named originally as the Lessee thereunder; and in addition to all of the obligations of the Lessee under said lease to said owners and Lessors as hereby assumed, Contract Engineering Company hereby further agrees to pay a total royalty upon all ore sold from said property of 12½ per cent of the net

mill or smelter returns actually received from sales of ore from the premises, unless the ore runs over $30.00 per ton, and in that event the said total royalty shall be 15% of such returns whenever any ore does run over $30.00 per ton.

It is specifically understood between the parties that Contract Engineering Company shall pay direct to the Owners-Lessors all royalties due such owners under the terms of the said original lease, and that the Contract Engineering Company will also pay to George A. Skeen the balance of said total royalties herein provided after deducting from such total royalties provided hereunder the royalties due and paid to said Lessors under the original lease.

Said original lease provides for the payment of a minimum royalty of $100.00 per year, which has been paid by George A. Skeen for the year from June, 1955, to June, 1956. Contract Engineering Company at the time of the execution and acceptance of this assignment pays to George A. Skeen the sum of $100.00 to cover such minimum royalty for the year from June, 1956, to June, 1957, and George A. Skeen undertakes to pay said amount to the Owners-Lessors of said mining claim, or to the agent for said Owners-Lessors authorized by them to act for them and to receive the same, and to furnish to Contract Engineering Company a writing signed by said Owners-Lessors, or by their duly authorized agent, showing receipt of said $100.00 payment, that it applies to the said year 1956-1957, and that the lease has been complied with to June, 1957, as far as minimum royalty payments are concerned.

George A. Skeen has paid the taxes upon said mining claim for the year 1955, payable in 1956, and Contract Engineering Company shall pay the taxes on said mining claim for the year 1956 in due course in 1957.

In addition to all other obligations under said original lease and under this assignment as above set forth, Contract Engineering Company further agrees, as additional conditions of its rights under the same, that it will commence the rehabilitation of the Central Tunnel (which may be used to reach and mine the said mining claim) or will commence the construction or drilling of a ventilation shaft or passage from the surface to the Central Tunnel by November 2, 1956, and will commence the actual extraction of ore from the said claim by February 2, 1958; provided, however, that as a substitute for the above work on the tunnel or the ventilation passage Contract Engineering Company may start the de-watering of the said mining claim and its workings by February 2, 1957. As soon as actual extraction of ore is commenced, not later than said February 2, 1958, the Contract Engineering Company undertakes to maintain at least 50 man shifts per month in and about said mining claim for the development and extraction of ore therefrom, and the continuance of such minimum work shall be a condition for the continued operation and mining by Contract Engineering Company hereunder.

This Assignment is given and accepted by the respective parties this _____ day of August, 1956.

_____
George A. Skeen

CONTRACT ENGINEERING COMPANY

By _____
Partner

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MINING LEASE

THIS AGREEMENT AND LEASE Made this _____ day of June, A. D. 1955, between G. E. Cotton, box 348, New Braunfels, Texas: Mrs. Dixie Cotton Jones, 457 57th Street, New York City, New York: Dorothy Cotton Ries, 2314 Gamion, Houston Texas: Mrs. Mildred Cotton Ware, 1 Fordal Road, Bronxville, New York: and Mrs. Margaret Cotton Skeen, Georgetown, Colorado, as first parties, hereinafter called the lessors, and George A. Skeen of Georgetown, Colorado, hereinafter called the lessee.

WITNESSETH, That for and in consideration of the rents, royalties, covenants and agreements hereinafter expressed to be paid, kept and performed by the Lessee, the Lessors have granted let and demised, and by these presents do grant, let and demise unto the Lessee all of the right, title and interest of the Lessors in and to the following described mining property and premises, situated in the Virginia Mining District, County of Clear Creek, State of Colorado, to-wit:

THE WINDSOR CASTLE LODE MINING CLAIM, U. S. MINERAL SURVEY NO. 152.

TO HAVE AND TO HOLD the demised premises unto the Lessee, with the right to mine, extract and remove ore therefrom and to sell and dispose of the same as hereinafter provided for the term of ten (10) years, commencing at Noon on the 1st day of July, 1955, and ending at Noon on the 1st day of July, 1965, subject to the terms and conditions of this agreement, unless sooner forfeited or determined through the violation of any of the terms, conditions, covenants or agreements hereinafter against the Lessee expressed or reserved.

The Lessee, for and in consideration of the demise of said premises, hereby covenants and agrees with the Lessors as follows:

1. To keep and hold as the property of the Lessors all cross and parallel lodes, spurs or mineral deposits of every kind and nature that may be uncovered, disclosed or discovered on or within the demised premises by the Lessee, or by any person employed by, through or under the Lessee, or by any person in privity with such Lessee, with the privilege to the Lessee of working the same as part and parcel of the demised premises.

2. To promptly pay for all labor, material and supplies to be done for, or furnished to, the Lessee, or any person or persons under him or in privity with him upon said premises.

3. To pay all taxes that may be legally assessed against said property.

4. To indemnify and save harmless the Lessors from any and all liability for any accident, injury or loss to any property, or to any party or parties whatsoever, arising out of, or incurred in connection with the operation or mining of the demised premises for any reason whatsoever.

5. In case of operation of the property, Lessee will carry a proper amount of workman's compensation insurance for the purposes aforesaid, and to comply with all of the rules and regulations of any public or governmental authority having supervision or jurisdiction over the demised premises and the operations thereon.

6. To allow and pay to the Lessors, as royalty upon all ores mined, shipped or sold from the demised premises in any manner during the term hereof the sum of Five percent (5%) of the net mine, mill or smelter returns.

In the event the royalty from all sales does not equal the amount of One Hundred Dollars ($100.00) for each twelve (12) month period hereunder, the Lessee herein agrees that he will pay to the Lessors herein, a substantial amount to make the royalty for any twelve (12) month period One Hundred Dollars ($100.00), as a guaranteed minimum royalty.

7. To preserve and redeliver to the Lessors quiet and peaceable possession of the demised premises, with the appurtenances and all improvements thereon, in good order and condition, reserving to the Lessee, the right to remove machinery and mining tools therefrom that may have been placed thereon by him, or his assigns, in good order, in the event of forfeiture or expiration of this lease.

8. To allow the Lessors, and their agents, from time to time and at any time, to enter upon and into all parts of the demised premises for the purpose of inspection, survey, taking ore samples, or otherwise; and to give to the Lessors such assistance as may be necessary or proper to accomplish any such inspection, survey, sampling or otherwise.

9. Lessee shall have the right to assign or sublet all or any part of this lease.

10. Lessee shall have the right, upon the expiration of this lease, to a ten (10) year extension thereof, under the same terms and conditions, in the event the conditions herein have been complied with.

Upon the failure of the Lessee to keep and fulfill any and all agreements and covenants herein expressed or implied, then and in that event it shall be lawful for the Lessors, their agents or attorneys, to declare the term hereof ended and this lease null, void and of no further force or effect, and with or without notice or process of law to enter upon and take possession of the demised premises and dispossess all persons occupying the same, with or without force, or, at the option of the Lessors, the Lessee and all persons found in occupation or possession may be proceeded against as being guilty of unlawful detainer.

Any notice given by the Lessors shall be deemed sufficiently served and shall be held to be binding upon the Lessee or any person holding or claiming to hold any interest in the demised premises through or under the Lessee, if the same is deposited post paid in a United States Post Office, addressed

to the Lessee, George A. Sheen, at Georgetown, Colorado.

Time is of the essence of this agreement, and this lease shall be appropriately construed to include each of the above names Lessors and Lessees, whether one or more and whether individuals, associations or corporations, and the terms and conditions hereof shall extend to, and be binding upon, the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Lease the day and year first above written.

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)
Lessors

_____(SEAL)
Lessee

OPTION TO LEASE

CROWN POINT AND VIRGINIA MINE

RECEIVED
DEC 10 1956
D.M.E.A.

OPTION TO LEASE

This agreement made and entered into this 23rd day of November A. D. 1956, in duplicate, by and between Katharine B. Caddis, Trustee, of the County of Alameda, State of California, Party of the First Part, hereinafter referred to as "owner" and Contract Engineering Company, a co-partnership, consisting of Alfred G. Noyl, Arthur G. Wood and Paul L. Goddard as partners with principal offices in Denver, Colorado, Party of the Second Part, hereinafter referred to as, collectively, the "Contract Engineering Company", WITNESSETH THAT:

WHEREAS, the owner of the following described lode mining claims, situate in the Idaho and Virginia Mining Districts of the County of Clear Creek and State of Colorado, to-wit:

> Crown Point and Virginia lode mining claim, U. S. Survey No. 601 and
> Bantala lode mining claim, U. S. Survey No. 1927

which said lodes are situated in an area in which the Contract Engineering Company desires to conduct certain mining operations; and whereas, the Contract Engineering Company has entered into certain arrangements whereby it has secured a lease upon the "Central Tunnel" (sometimes heretofore known as the Big Five Tunnel) and property held in connection with said Central Tunnel, and in addition has secured leases upon certain other lode mining claims near or adjacent to the property hereinabove mentioned; and whereas, the Contract Engineering Company contemplates conducting a mining operation through said Tunnel upon said property, but is obligated to do certain work upon and make certain provisions for ventilation and rehabilitation of said Tunnel, which said work and provisions will require extensive efforts on the part of the said Contract Engineering Company; and whereas, said Tunnel does not presently cross or otherwise contact the said Crown Point and Virginia lode or the said Bantala lode; and whereas, the said owner is not agreeable to granting to the said Contract Engineering Company a lease covering said lode mining claims until such time as said Contract Engineering Company shall have rehabilitated said Tunnel and ventilated the same to be in a position to drive a drift from said Tunnel so as to reach said lode mining claims.

NOW, THEREFORE, in consideration of the premises and the mutual covenants hereinafter contained and the further consideration of the payment of the taxes upon said lode mining claims as hereinafter set forth, it is hereby mutually understood and agreed as follows, to-wit:

1. Said owner hereby gives and grants to said Contract Engineering Company for a period of one year from the date hereof, unless sooner terminated as hereinbelow provided, the sole and exclusive right and option to lease said premises for a period of twenty (20) years from and after the date of the exercise of said option, upon the terms and conditions set forth in that certain Mining Lease hereto attached and marked "Exhibit A"; provided, however, that said option shall not be exercised by said Contract Engineering Company unless at the time of the exercise thereof said Contract Engineering Company shall first have performed all the work, and established and completed all of the provisions for ventilation and rehabilitation contemplated by said Contract Engineering Company's lease upon the said Central Tunnel, and shall further be in a position

forthwith to commence a drift immediately towards said property from said Central Tunnel as contemplated by said Lease (Exhibit A), and, provided further, that in the event said Contract Engineering Company shall forfeit, cancel or otherwise lose its leasehold rights to the said Central Tunnel, then this option and the rights hereby granted shall forthwith terminate.

2. Upon the execution of this agreement, Contract Engineering Company agrees to pay to owner a sum equal to the 1955 taxes assessed upon said lode claims, said sum to apply on the 1956 taxes, and further agrees to pay to the owner on or before March 1, 1957 any additional amount due for 1956 taxes, together with a sum equal to the total of the 1956 taxes to apply on the 1957 taxes when and if the same shall be assessed and levied upon said property.

3. The owner hereby grants to Contract Engineering Company the right to make one, and only one, assignment of the rights and privileges hereby given to the Contract Engineering Company without further consent of the owner, upon the following conditions, to-wit:

A. Such assignment may be made only to such person or persons, firm, association or corporation to whom the Lease upon the Central Tunnel and the other leases upon adjacent properties have been unconditionally assigned.

B. Written notice of such assignment shall be given to the owner within ten (10) days after the date of such assignment, together with an undertaking in writing by such assignee assuming the obligations of the Contract Engineering Company hereunder.

Any purported assignment not made in compliance with said conditions shall operate to terminate immediately all rights granted hereby to the Contract Engineering Company, and the alleged assignee or assignees shall receive no interest, claim or demand of any nature in or to said lode mining claims by reason thereof.

No assignment of any interest herein (subsequent to the first assignment as provided above) shall be made by the Contract Engineering Company, nor shall any person or persons, firm, association or corporation acquire any rights in the option or in said lode mining claims (except by reason of the first assignment, as provided above) without the owner first consenting in writing to such further assignment or to such acquisition of rights herein.

The Contract Engineering Company, being a partnership as hereinabove mentioned, it is hereby understood and agreed that any change in the membership of said partnership whereby the majority of the present partners thereof shall be changed, shall, for the purposes of this option, be considered an assignment hereof, and as such, subject to the provisions herein contained, with reference to assignment of interests herein.

4. Said lode mining claims shall remain in the sole and exclusive possession of the owner until the exercise of this option by the Contract Engineering Company, as hereinafter provided. It is understood and agreed, however, that the Contract Engineering Company

RECEIVED DEC 10 1956 D.M.E.A.

may, from time to time, enter upon said premises for the purpose of inspecting the same and otherwise determining the best method for the development of the said properties in the event of the exercise of this option; if, however, said Contract Engineering Company, its agents, employees or invitees or any other person shall enter upon said properties pursuant to the rights of inspection hereinabove granted, the Contract Engineering Company hereby expressly agrees to assume sole liability for any and all injuries or damage which may be occasioned to any such agent, employee or invitee while on said premises, and further agrees to save said owner harmless from any and all liability to any such person or persons for any injury or damage sustained by such person or persons while upon said premises.

5. In the event said Contract Engineering Company shall determine to exercise the option herein granted to-wit, written notice thereof shall be given to owner and a copy of such notice shall be recorded in the office of the Clerk and Recorder of Clear Creek County, Colorado. In the absence of the recording of such notice in said office, it shall be conclusively presumed that said Contract Engineering Company has not exercised its option to lease said premises. Said notice to owner shall be accompanied by a statement of even date, executed by the owners of the Central Tunnel and associated claims hereinabove referred to, setting forth that the lease of said Central Tunnel and associated claims hereinabove referred to is in full force and effect, that the ventilation and rehabilitation provisions thereof have been complied with and that the said Central Tunnel is in such condition that the same may be safely used to a point beyond the beginning point of the drift to the properties covered hereby. Said notice shall further be accompanied by the statement from the Contract Engineering Company that it has begun or will immediately forthwith begin the construction of a drift from said tunnel to the property covered by this option. Upon the giving of such notice, the Contract Engineering Company shall be entitled to take possession of said property and shall be presumed that such possession thereof is upon the terms and conditions set forth and expressed in the Mining Lease attached hereto and marked "Exhibit A". Said owner agrees, upon receipt of said notice, or within a reasonable time thereafter, to deliver in duplicate to said Contract Engineering Company, the properly executed lease containing the agreements, covenants, conditions and provisions set forth in the lease attached hereto marked "Exhibit A" and the Contract Engineering Company hereby agrees to cause said lease to be properly executed by it or in its name by persons of due authority, and to cause a copy thereof to be returned to said owner forthwith.

6. Any notice required hereunder to be given to owner shall be effective when deposited in the United States mail addressed to owner at

2915 Garber Street
Berkeley 5, California.

Any notice given to Contract Engineering Company shall be sufficient when placed in the United States mail addressed to said company at

1727 Boulder Street
Denver, Colorado.

Time shall be of the essence of this agreement and the covenants and agreements herein contained shall inure to the benefit of and be binding upon the successors and assigns of the said owner, and shall likewise extend to and be binding upon the heirs, executors,

administrators and lawful assigns of the Contract Engineering Company.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written, the Contract Engineering Company hereby warranting that the person or persons executing this agreement on behalf of said partnership has the full authority to represent said partnership and to bind the various members thereof.

_____
[illegible] E. Gaddis, Trustee
OWNER

CONTRACT ENGINEERING COMPANY

By_____

AMENDMENT TO OPTION TO LEASE AND TO MINING LEASE

This Agreement of Amendment is made and entered into as of the 23rd day of November, 1956, by and between Katherine B. Gaddis, Trustee, of the County of Alameda, State of California, Party of the First Part, hereinafter referred to as "Lessor", and Contract Engineering Company, a co-partnership, consisting of Alfred G. Hoyl, Arthur G. Wand, and Paul L. Goddard as partners, with principal offices in Denver, Colorado, Party of the Second Part, hereinafter referred to as, collectively, "Lessee."

RECITALS: The Lessor as owner and Lessee as Contract Engineering Company have on said November 23, 1956, entered into an OPTION TO LEASE, and the lease covered by said option is made a part of said Option to Lease as Exhibit A thereof. Said documents were prepared before negotiations between the parties were fully completed and the parties have later agreed upon some modifications of such original draft. To avoid a complete re-writing of the long lease, Exhibit A, the parties are hereby modifying such Option to Lease and Lease by this supplemental agreement.

Therefore, it is further agreed between the parties that the following changes and modifications shall be made in said Option to Lease of this date, and in the Lease made a part thereof as Exhibit A, and the terms of said Option to Lease and of the included Lease shall be as set forth therein except as herein specifically changed and modified, and as to such changed provisions same shall be considered as though originally included in said Option to Lease and in its included Lease.

1. Wherever reference is made in said Option to Lease or in the included Lease, Exhibit A, to taxes upon the lode claims to be leased or on the property of the owner or Lessor covered by the Option to Lease or its included Lease, such taxes shall include all taxes assessed against the owner or Lessor, for the periods defined, upon the mining claims involved and also upon the improvements thereon.

2. The term of the Lease, fixed at ten years in the included Lease, Exhibit A, shall be modified by the Lessee having the right and option to extend and to have extended by the Lessor the Lease for another ten year period following the first term of the Lease, provided the Lessee is not in default under the terms of the Lease at the end of the first ten year term, and provided that Lessee gives the Lessor at least ninety (90) days advance written notice, before the end of said first term, that Lessee desires to extend and to have extended the said Lease for a further term of ten (10) years.

3. The following language is eliminated from Section 15 of the included Lease, Exhibit A: "it being understood that said Lessee shall not make any charges for ore milled at any mill which it or any associated group or wholly owned subsidiary group shall own." The parties agree that if ore from the leased premises is milled at such an owned or controlled mill, then the Lessee may charge the actual milling costs of said ore before calculating royalties, but with the following specific understandings: (a) Such milling costs shall never exceed the sum of $5.00 per ton; (b) Such milling costs shall be actual,

without excessive overhead being allocated to any such milling operation, and the Lessor shall have a right to receive from Lessee full and detailed explanations of how the milling costs are calculated and Lessor shall have the right to have Lessee's books and statements audited at Lessor's expense at any time; (c) Lessor shall have the right, after any six months period, to direct Lessee to have ore from the leased premises thereafter milled at any custom mill designated by the Lessor, and thereafter the charges of such custom mill for milling shall be used in lieu of the charges before calculating royalties.

4. In Section 16 of the Lease the "ten (10) days" provided in the eleventh line of such Section in Exhibit A is hereby changed to read "ninety (90) days."

5. The first provision in Section 17 of the Lease, Exhibit A, for the payment of $500.00 minimum royalty shall read "on or before twelve (12) months after date" instead of being "in six months from the date of the Lease.

6. In Section 18 of the Lease the "thirty (30) days' notice " provided in the eleventh line of such Section in Exhibit A and the "30 day period" mentioned in the thirteenth line of such Section are hereby changed to read "sixty (60) days' notice " and "60 day period" respectively.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written, the Contract Engineering Company hereby warranting that the person or persons executing this agreement on behalf of said partnership has the full authority to represent said partnership and to bind the various members thereof.

Katharine B. Geddis, Trustee
OWNER

CONTRACT ENGINEERING COMPANY

By _____

LAKE MINE

CENTRAL TUNNEL LEVEL ASSAY SUMMARY

From Lake Mine Assay Map

Map Section	Average Width	AU	AG	CU	Area Factor	Volume Factor	VXAU	VXAG	VXCU
1 -	1.40	0.620	5.05		80	112	69.44	565.60	
"	3.10	0.490	3.19		30	93	45.57	296.67	
2 -	1.46	0.470	4.83	1.60	100	146	68.62	705.18	233.60
3 -	4.00	0.425	2.55		80	360	153.00	918.00	
	1.43	0.655	4.44		20	29	18.99	128.76	
	0.80	0.570	4.96		10	8	4.56	39.68	
4 -	2.11	0.649	6.82	1.52	230	485	314.77	3307.70	737.20
	2.16	0.475	4.35		50	108	51.30	469.80	
5 -	2.95	0.640	5.26		130	384	245.76	2019.84	
6 -	1.46	1.110	8.80	2.90	100	146	162.06	1284.80	423.90
7 -	1.10	0.460	2.00		30	33	15.18	66.00	
	2.40	0.383	12.91		60	144	55.15	1859.04	
TOTALS	24.37				920	2048	1204.40	11661.07	1394.70

Divide by 2048 for weighted average values/ton, AU & AG. Divide by 777 for weighted average values/ton - CU .58 oz. 5.7 oz. 1.8%

Average Grade weighted by volume

Gold .58 oz./ton
Silver 5.7 oz/ton
Copper 1.8%/ton

Lead and zinc are assumed to exceed 1%/ton.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/5/57	[illegible]	500
	[illegible]	500
2/6	Selfridge	130
2-11	[illegible]	220
2/6	Johnson	110
	" Mathewson	100 225
	Lamb	
	Kiilsgaard	

FEB 7 1957

Contract Engineering Company
1727 Boulder Street
Denver 11, Colorado

Re: Docket No. DMEA-4565 (Copper-Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Gentlemen:

Your application for aid for an exploration project and other reports available to us in Washington concerning your application have been reviewed.

The work which you contemplate is primarily for rehabilitation and development rather than of an exploratory nature. In addition, the available information relating to your property does not indicate the probability of finding sufficient strategic or critical minerals to justify Government participation in such work.

It is our understanding from your January 23, 1957 letter, addressed to Mr. W. M. Traver, that you are planning to do the necessary mine rehabilitation on your account and will then submit a revised exploration program for Defense Minerals Exploration Administration assistance. In view of the fact that the rehabilitation work will most likely take a considerable period of time to complete, and we cannot hold applications open for indefinte periods, we must consider your application as having been withdrawn. However, at any time when your work has made the necessary mine workings open and available for examination, you may submit a new application, fully outlining your new proposals, and it will be given full consideration. In future correspondence kindly refer to the cited docket number.

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

JWAlt/er 2/1 & 5/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

Sincerely yours,

E. O. Mitterdorf (for)

Administrator

R.E.G.

8623

DMEA Form 7
(12-56)

500

OFFICIAL FILE COPY

Date	Surname	Code
2/5/57	J. [illegible]	500
	Grisamore	500
2/6	Selfridge	130
2/6	Johnson	110
"	Hutchinson	100
		225

FEB 7 1957

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-4565 (Copper-Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Dear Mr. Traver:

This is to acknowledge your memorandum, dated January 29, 1957, regarding the cited application. In view of the probability of considerable time being required to reopen the Central Tunnel, we deem it best to withdraw the application in its present form rather than hold it in abeyance until the property can be examined.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

APPROVED:

Frank D. Lamb
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

JWAlt/er 2/1 & 5/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2/1/57	J. Alt	500
	Trimmel	500
		130
		110
		100
		225

Contract Engineering Company
1727 Boulder Street
Denver 11, Colorado

Re: Docket No. DMEA-4565 (Copper-Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Gentlemen:

Your application for aid for an exploration project and other reports available to us in Washington concerning your application have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of ~~accepted grade in quantities that will~~ significantly improve the mineral supply position for the National Defense Program.

~~Careful study of all our information indicates that~~ The work which you contemplate is ~~actually largely composed of~~ rehabilitation and development rather than ~~being~~ of an exploratory nature. We regret to advise you, ~~under those circumstances~~, that your application for exploration assistance is denied, but without prejudice to the property.

In the event that your company should reopen the Central Tunnel so that its various veins are accessible to examination, any application which you might care to submit would be given full consideration.

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

Sincerely yours,

JWAlt/er 2/1/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

Administrator

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

February 5, 1957

Memorandum

To: Chief, Operations Control and Statistics Division

From: Chief, Base Metals Division

Subject: Withdrawal of Application, Docket No. DMEA-4565, Contract Engineering Company, Central Tunnel Project, Clear Creek County, Colorado, Copper-Lead-Zinc-Uranium.

Will you please withdraw the cited application from the active files. The reason for this is that the application is primarily for rehabilitation and development rather than of an exploratory nature. The Field Team recommended that the application be held in abeyance until the preliminary rehabilitation of the Central Tunnel has been completed. In view of the fact that it will take considerable time to reopen the tunnel to be accessible for an examination, we deem it best to withdraw the application.

W. R. Griswold

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

500

Date	Surname	Code
2/5/57	J. Alt.	500
2/6	Selfridge	130
		225

February 5, 1957

Memorandum

To: Chief, Operations Control and Statistics Division

From: Chief, Base Metals Division

Subject: Withdrawal of Application, Docket No. DMEA-4565, Contract Engineering Company, Central Tunnel Project, Clear Creek County, Colorado, Copper-Lead-Zinc-Uranium.

Will you please withdraw the cited application from the active files. The reason for this is that the application is primarily for rehabilitation and development rather than of an exploratory nature. The Field Team recommended that the application be held in abeyance until the preliminary rehabilitation of the Central Tunnel has been completed. In view of the fact that it will take considerable time to reopen the tunnel to be accessible for an examination, we deem it best to withdraw the application.

W. R. Griswold

W. R. Griswold

JWAlt/er
Copy to: Docket
Base Metals Div.
Chron.

8623

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 31 1957

DATE	INITIALS	CODE
1-31	C	220
1-31	[illegible]	500
January 29, 1957		

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA-4565 (Copper-Lead-Zinc-Uranium) Contract Engineering Company (Central Tunnel Project) Clear Creek County, Colorado

Enclosed are two copies of a letter from the representative of the subject Applicant wherein it is requested that the application be held in abeyance until preliminary rehabilitation of the Central Tunnel has been completed and ventilation effected to make examination possible.

We recommend the request have favorable consideration, provided it does not result in holding the docket open for an excessive length of time.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

PHONE GRAND 7-5294

CONTRACT ENGINEERING COMPANY

Engineering, Development, Research, in the Mineral and Construction Industries

1727 BOULDER STREET

DENVER 11, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
JAN 28 1957
REGION III
DENVER, COLORADO

January 23, 1957

Mr. W. M. Traver
Executive Officer, D. M. E. A. Field Team
Region III
224 New Custom House Building
Denver 2, Colorado

RE: Docket No. D.M.E.A. 1565
(Copper, Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Dear Mr. Traver:

As a result of a recent conference with John Shaw, Don E. Redman, Albert S. Konselman, and Don H. Richter of the Bureau of Mines regarding the above project, we are requesting that our application be held in abeyance until we have completed the preliminary rehabilitation work of the Central Tunnel and provided sufficient ventilation for access to the underground workings in the two major veins at the Central Tunnel level.

It is our understanding that the Defense Minerals Exploration Administration would not be able to participate with us in this rehabilitation effort but might be interested in participating with us in the exploration of the veins after the rehabilitation had been effected.

We shall keep you advised as to our progress and as to when it will be possible to make an examination of the workings on the tunnel level.

Yours very truly,

CONTRACT ENGINEERING COMPANY

Alfred G. Boyl

Alfred G. Boyl

AGB:dsh

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 31 1957

DATE	INITIALS	CODE

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 22 1957

DATE	INITIALS	CODE
1-22	C	220
1-23	JWA	500
✓		

January 22, 1957

Re: DMEA 4565; Pb-Cu-Zn-U_3O_8; $200,000
Contract Engineering Co., partnership
Lake Mines, Central Tunnel Project
Clear Creek County, Colo.

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Review of Field Team report, dated January 10, 1957, received January 22, 1957.

On January 8, 1957 representatives of the Field Team including D. E. Redmon (USBM) and D. H. Richter (USGS) met with the applicants' representative A. G. Hoyl to review the application and all available information on the mine.

On the basis of that meeting, the Field Team and its staff were in agreement that the proposed project consists chiefly of rehabilitation and development rather than exploration. It was established that more than 5,500 feet of the Central Tunnel is inaccessible and that it is impossible to evaluate the merit of exploration proposed at depth until the present workings are made available.

On the bases of my review of the application I concur with the views of the Field Team and recommend that the application be denied without prejudice.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 24 1957

DATE	INITIALS	CODE
1-24	C	220
1/24	JWA	500

IN REPLY REFER TO:

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

January 22, 1957

Re: DMEA 4565
Contract Engineering Co.
Central Tunnel Project
Clear Creek County, Colo.
$200,000, Copper-lead-zinc

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of memorandum of Field Team concerning denial of the application without prejudice.

The applicant requested assistance in the rehabilitation of a 9,500 foot adit (Central Tunnel) and raising to an old gold-silver mine. It was rather obvious that development as well as exploration was involved.

As the area to be 'explored' cannot be examined prior to rehabilitation of the adit the examiners and the Field Team recommend that the application be denied without prejudice.

Not a few applications involving rehabilitation have been approved. The reclamation portion of the referenced project is larger than average, but the target is also large and the values inferred may be commensurate. Therefore I would not base the denial without prejudice on the matter of rehabilitation alone, but on whether or not the inferred values of the base metals, copper, lead, and zinc, (plus the value of uranium) warrant the work. Probably the gold and silver values at the low level are greater than those of the 'assistable' metals but the best appraisal possible of the latter should be made in order that the feasibility of the rehabilitation work may be judged. Members of the "Survey" in the Denver office who have been studying the area may be able to assist.

N. E. Nelson

N. E. Nelson

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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 14 1957

DATE	INITIALS	CODE
1/14	CW	220
1-22	CW	1:30
1-22	JWA	220
		500

224 New Customhouse
Denver 2, Colorado

January 10, 1957

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Joint Memorandum Report Docket DMEA 4565 (copper-lead-zinc-uranium) Contract Engineering Company (Central Tunnel Project) Clear Creek County, Colorado.

Enclosed are the original and three copies of a joint review of the subject application with the Applicant.

In this discussion of the application with the Applicant, he suggested that he withdraw the application until such time as the exploration area is accessible for examination. In the event that the application is not withdrawn, it has been recommended that the application for DMEA assistance be denied without prejudice. We concur in this recommendation.

DMEA Field Team, Region III

E. N. Harshman

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-18-57
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

DMEA
DEPARTMENT OF THE INTERIOR
JAN 10 1957
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado
January 9, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 14 1957

DATE	INITIALS	CODE
		130
		220

ON-SITE REPORT

Joint Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
E. N. Harshman

From: D. E. Redmon
D. H. Richter

Subject: Docket DMEA 4565 (Copper, lead, zinc, uranium)
Contract Engineering Company (Central Tunnel Project)
Clear Creek County, Colorado -- Review of subject application with applicant

Contract Engineering Company of Denver, Colorado, applied for DMEA assistance on a project that involves rehabilitation of the 9500-foot-long Central Tunnel in Clear Creek County, Colorado. The application was received on December 6, 1956. The project was estimated to cost $200,000.00, itemized as follows:

Rehabilitation of Central Tunnel

Unblocking drainage, 9000 ft. at $0.40/ft.	$3,600.00
Removing caved portions, 450 ft. (estimated) at $45.00/ft.	20,250.00
Timbering caved portions, 450 ft. at $40.00/ft.	18,000.00
Repair 4 inch air line, 9000 ft. at $0.50/ft.	4,500.00
Clean up of tunnel floor, 9000 ft. at $0.60/ft.	5,400.00
Track repair, 9000 ft. at $0.90/ft.	8,100.00
Total	$59,850.00

Raise to surface

1100 feet at $40/ft.	$44,000.00
(Alternate; 12" to 16" drill hole, 1300 ft. to 1700 ft. at $20/ft. maximum cost $34,000.00)	

Rehabilitation of drifts and raises in veins

Rehabilitate drifts, 3900 ft. at $10/ft.	$39,000.00
Rehabilitate raises, 800 ft. at $12/ft.	9,600.00
Total	$48,600.00
Reserve for contingencies	$47,550.00
Total estimated cost of project	$200,000.00

Approved by
FISCAL OPERATING COMMITTEE
1-18-57

Government participation at 50 percent would be $100,000.00.

The application reviewers were in agreement that the proposed project consisted mainly of rehabilitation and development rather than exploration.

A conference was held at the Bureau of Mines Offices, Denver Federal Center, on January 8, 1957, attented by John F. Shaw, A. S. Konselman, and D. E. Redmon of the U. S. Bureau of Mines; D. H. Richter, USGS; and A. G. Hoyl, applicant's representative.

It was established that the Central Tunnel is now accessible for no more than 2600 feet. This precludes making an adequate examination by a DMEA examining team.

The applicant estimated that 450 feet of the tunnel would require complete rehabilitation in order to gain access to the proposed working area, and there would still be a safety hazard in the form of bad air. The 450-foot estimate may be low, as more than 5500 feet of the tunnel is inaccessible, and has been so since about 1942.

It was pointed out to the applicant that the proposed project was primarily one of rehabilitation and development, and that DMEA could not accept the proposal in its present form.

Although it was not stated in the proposal, the applicant intends to drill a 12-inch-diameter air shaft from the surface and at the same time rehabilitate the Central Tunnel. Subsequently a connection with the air shaft will be made. This would be followed by rehabilitation and development along the presumably minable veins.

Some of the veins exposed at the central tunnel level have been worked in past years for gold and silver; however, the information concerning their value in lead, zinc, and copper is very sketchy.

Generally speaking, the mines in the area of the proposed project were very productive near the surface, but, the value of the ore became less with increasing depth, and only a few small leases are currently being operated.

The Central Tunnel is about 1000 feet below the lowest levels of the formerly productive mines. It is possible that some of the more persistant veins will carry adequate mineralization at the tunnel level, and thereby justify further exploration.

It was concluded that the proposed project could not be accepted in its present form and that a mutually satisfactory exploration program could not be presented until access could be gained to the exposed downward extensions of the veins. The veins will be accessible only after the tunnel rehabilitation is completed.

The applicant, who was very congenial throughout the discussion, fully appreciated the Government's position concerning the rehabilitation project and suggested that he withdraw the application until the exploration area is made accessible for an adequate examination. Therefore, unless the applicant withdraws his application, it is recommended that the application for DMEA assistance be denied without prejudice.

D. E. Redmon

D. E. Redmon
Mining Engineer
U. S. Bureau of Mines

D. H. Richter

D. H. Richter
Geologist
U. S. Geological Survey

cc: 9
DMEA 4565
Chron
ENHarshman

OFFICIAL FILE COPY DMEA RECEIVED JAN 4 1957		
DATE	ACTION	CODE
1/7	JWA	500

Region III

Building 20
Denver Experiment Station
Denver 2, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
DEC 28 1956
REGION III
DENVER, COLORADO

December 28, 1956

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Acting Supt., Denver Experiment Station, Reg. III

Subject: Docket DMEA 4565 (copper-lead-zinc-uranium), Contract Engineering Company (Central Tunnel Project), Clear Creek County, Colorado

The application for Contract Engineering Company, Docket DMEA 4565, in the amount of $34,000.00 was received in this office on December 28, 1956.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

JOHN F. SHAW

John F. Shaw

cc: W. M. Traver (2)
E. N. Harshman
J. F. Shaw
Sec Op. Com (2)

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

224 New Customhouse
Denver 2, Colorado

December 27, 1956

Memorandum

To: W. H. King (2) (w/brochure)
E. N. Harshman (w/brochure)

From: DMEA Field Team, Region III

Subject: Docket DMEA 4565 (copper-lead-zinc-uranium) Contract Engineering Company (Central Tunnel Project) Clear Creek County, Colorado.

Enclosed is the subject application in the amount of $34,000.00. A field examination and suitable report are requested.

Of special interest is a letter from the Chairman of the Operating Committee, copy of which is attached, regarding the proposed work being essentially rehabilitation, which could not be accepted in its present form. Also enclosed are copies of memoranda of review of the application by O. M. Bishop and N. E. Nelson.

In the event the field examiners consider the application favorably, the Applicant should be requested to supply a property map showing the leased claims and the location of the proposed work. Early advice to this office, if an exploration program is indicated, will enable us to secure the Consent to Lien and Subordination Agreements from the property owners.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

W. M. Traver
By Executive Officer

RECEIVED
DEC 31 1956
D.M.E.A.

Enclosures

BMC:ytl

cc: Sec. Op. Comm. (2)
Docket 4565
Chron.

File Copy
Surname

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

DEC 21 1956

Re: Docket No. DMEA-4565 (Copper-Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Dear Mr. Traver:

The cited application is being referred to your office for consideration, a field examination of the property if warranted, and recommendation.

From the information contained in the application and the additional information supplied by the Applicant, it appears that the proposed work is essentially rehabilitation and it could not be accepted in its present form. However, the Field Team and the Applicant may be able to arrive at a mutually satisfactory program.

In the event that you should consider the application favorably, the Applicant should be requested to obtain Consent to Lien and Subordination Agreements from the owners of the property. Also, the Applicant should be requested to supply a property map showing the leased claims and the location of the proposed work.

Copies of memoranda dated December 13 and December 14, 1956, by O. M. Bishop, Bureau of Mines, and M. E. Nelson, Geological Survey, respectively, relating to the project, are enclosed for your information.

Also enclosed are two copies of the application for the cited property for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures
APPROVED:

Frank D. Lamb
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

JWALT/er 12/20/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

R.C.L.

File Copy
Surname
J. All.
Grisuel
Lamb
Kiilsgaard
Selfridge

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

DEC 21 1956

Contract Engineering Company
1727 Boulder Street
Denver 11, Colorado

Re: Docket No. DMEA-4565 (Copper-Lead-Zinc-Uranium)
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado

Gentlemen:

Your application for Government assistance to explore the cited property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and is being referred to:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

If additional information concerning your application is needed, the Field Team will get in touch with you at an early date.

Sincerely yours,

G. O. Mittenson (for)

Administrator

JWAlt/er 12/20/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

A.C.S.

IN REPLY REFER TO:

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

RECEIVED DEC 17 1956 D.M.E.A.

December 14, 1956
Re: DMEA 4565
Contract Engineering Company
Central Tunnel Project
Clear Creek County, Colorado
$34,000.00 - Copper-lead-zinc

RECEIVED DEC 17 1956 D.M.E.A.

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The applicant requests assistance in rehabilitation of the 7,000-foot low level Central Tunnel, and connecting it by raise to workings in the old Windsor Castle mine, about 1,000 feet above. Such work will, it is assumed, make available for mining a substantial tonnage of ore that could not be mined because of operational difficulties, principally lack of ventilation.

If the problem is that simple, it should have been solved long since. Extensions of ore shoots mined higher up, have been mined above and below the Central Tunnel level in the Belman, Lake and West Doves Nest mines, and it is assumed that other ore shoots should reach the low level tunnel. The veins were probably mined primarily for the gold and silver values, but stope maps and mill data indicate the base metal values are such that attention is warranted.

Referral of the application to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

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

12/17/56. Received by D.M.E.A.

RECEIVED
DEC 14 1956
D.M.E.A.

December 13, 1956

Re: DMEA 4565; Pb-Cu-Zn-U_3O_8;
$
Contract Engineering Co.,
partnership
Lake Mines, Central Tunnel Proj.
54 claims, Clear Creek County,
Colorado

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, Branch of Base Metals

Subject: Review of application dated December 5, 1956, transmitted December 7 and received December 11, 1956

The applicant has the Lake, Windsor Castle, West Doves Nest and Belman Mines under lease, has a lease on the portion of the Bald Eagle Mine 1,000 feet below the surface and options to lease the Crown Point and Virginia Mines. These mining properties are traversed by a number of veins and have had a history of production from relatively shallow workings. About 50 years ago the Central Tunnel was driven from Idaho Springs 9,500 feet to intersect the veins at depth and assist in effecting drainage, ventilation and haulage. Some stopes were developed from the Central Tunnel but for various reasons much of the vein systems lying above the tunnel level have not been developed.

The Contract Engineering Company proposes to rehabilitate the Central Tunnel to the point where it is beneath the Windsor Castle Mine property. There an 1,100-foot raise or a 12- to 16-inch drill hole would be driven to effect a connection to the surface and achieve ventilation. The raise is estimated to cost $40.00 per foot or $44,000; the drill holes $34,000 (1,700 feet @ $20.00 per foot). Rehabilitation of an unstated length of the tunnel is estimated at $60,000.

In reviewing the proposal which lacks numerous important details of cost, it is apparent that the veins mined in the past and that currently being mined at the Bald Eagle are narrow and

principally valuable for gold and silver. Smelter credits in 1955-6 on Bald Eagle concentrate have totaled $156,700 of which 72 percent was for gold and silver. The oreshoot at the Central Tunnel level of the Lake Mine appears to be about 3 feet wide and to contain 0.58 ounces of gold, 5.7 ounces of silver per ton and perhaps 0.7 to 1.8 percent copper.

The same vein on the 9th level of the Frontenac Mine, averages 4.2 feet in width, contains about $11.00 in gold and silver per ton and in the order of 1 percent lead, 0.5 percent copper, and 0.6 percent zinc. Other oreshoots on the 6th, 7th and 8th levels were appreciable narrower and of lower base and precious metal content.

I recommend that the application be referred to the field team for appraisal and field examination if they deem the latter justified. On the basis of the data submitted, I am of the opinion that the application primarily covers a gold-silver operation, and that the work outlined is in large measure development.

O. M. Bishop.

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Mr. Bishop
Files

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

224 New Customhouse
Denver 2, Colorado

December 11, 1956

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (copper-lead-zinc-uranium)
Contract Engineering Company (Central Tunnel Project)
Clear Creek County, Colorado.

Enclosed are the original and two copies of additional information on the subject application, which has been submitted by the Applicant.

Will you please place one copy of this additional information with each copy of the brochure forwarded you with our memorandum of December 7, 1956.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

(3)

PHONE GRAND 7-5294

CONTRACT ENGINEERING COMPANY

Engineering, Development, Research, in the Mineral and Construction Industries

DENVER, COLORADO

1727 BOULDER STREET

DMEA
DEPT. OF THE INTERIOR
DEC 10 1956
REGION III
DENVER, COLORADO

December 8, 1956

RECEIVED
DEC 13 1956
D.M.E.A.

United States Department of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

ATTENTION: W. M. Traver
Executive Officer, DMEA

Gentlemen:

RE: LAKE MINE, CENTRAL TUNNEL PROJECT

D.M.E.A. AID APPLICATION

Regarding our Lake Mine, Central Tunnel project, we desire to amplify the information in our application with regard to anticipated costs.

On Page 7 of our summary, under "Estimated Rehabilitation and Development Cost", we may itemize the costs in greater detail as follows:

Rehabilitation of Central Tunnel		
Unblocking Drainage, 9,000 ft. @ 40¢/ft.	$ 3,600	
Removing Caved Portions, (Estimated) 450 ft. @ $45/ft.	20,250	
Timbering Caved Portions, 450 ft. @ $40/ft.	18,000	
Repair 4" Air Line, 9,000 ft. @ 50¢/ft.	4,500	
Clean Up of Tunnel Floor @ 60¢/ft.	5,400	
Track Repair @ 90¢/ft.	8,100	
Total		$59,850
Raise to the Surface		
1,100 ft. @ $40/ft. (Alternate 12" to 16" Drill Hole, 1,300 ft. to 1,700 ft. @ $20/ft.; Maximum, $34,000)		44,000
Rehabilitation of Drifts and Raises in Veins		
Rehabilitate Drifts, 3,900 ft. @ $10/ft.	39,000	
Rehabilitate Raises, 800 ft. @ $12/ft.	9,600	
Total		48,600
Reserve for Contingencies plus 30%		47,550
TOTAL		$200,000

Lake Mine, Central Tunnel Project
D.M.E.A. Aid Application

An adequate reserve is essential as it is impossible to accurately foresee all of the work which will be involved, since much of the workings to be rehabilitated are presently inaccessible. It is felt, however, that the figure of $200,000 is a maximum cost figure to rehabilitate and ventilate the workings in preparation for production.

The proposed erection of ore bins at the tunnel portal shown under "OPERATION" on Page 5 of the summary is a minor item and would not be included in the exploration phase.

Yours very truly,

CONTRACT ENGINEERING COMPANY

Alfred G. Hoyl

Alfred G. Hoyl

AGH:dsh

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

December 10, 1956

Contract Engineering Company
1727 Boulder Street
Denver 11, Colorado

Subject: DMEA-4565

Gentlemen

Your application for exploration assistance, dated December 5, 1956 submitted to our office at Denver, has been assigned Docket Number DMEA-4565 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

(Sgd) Allen S. Dakan

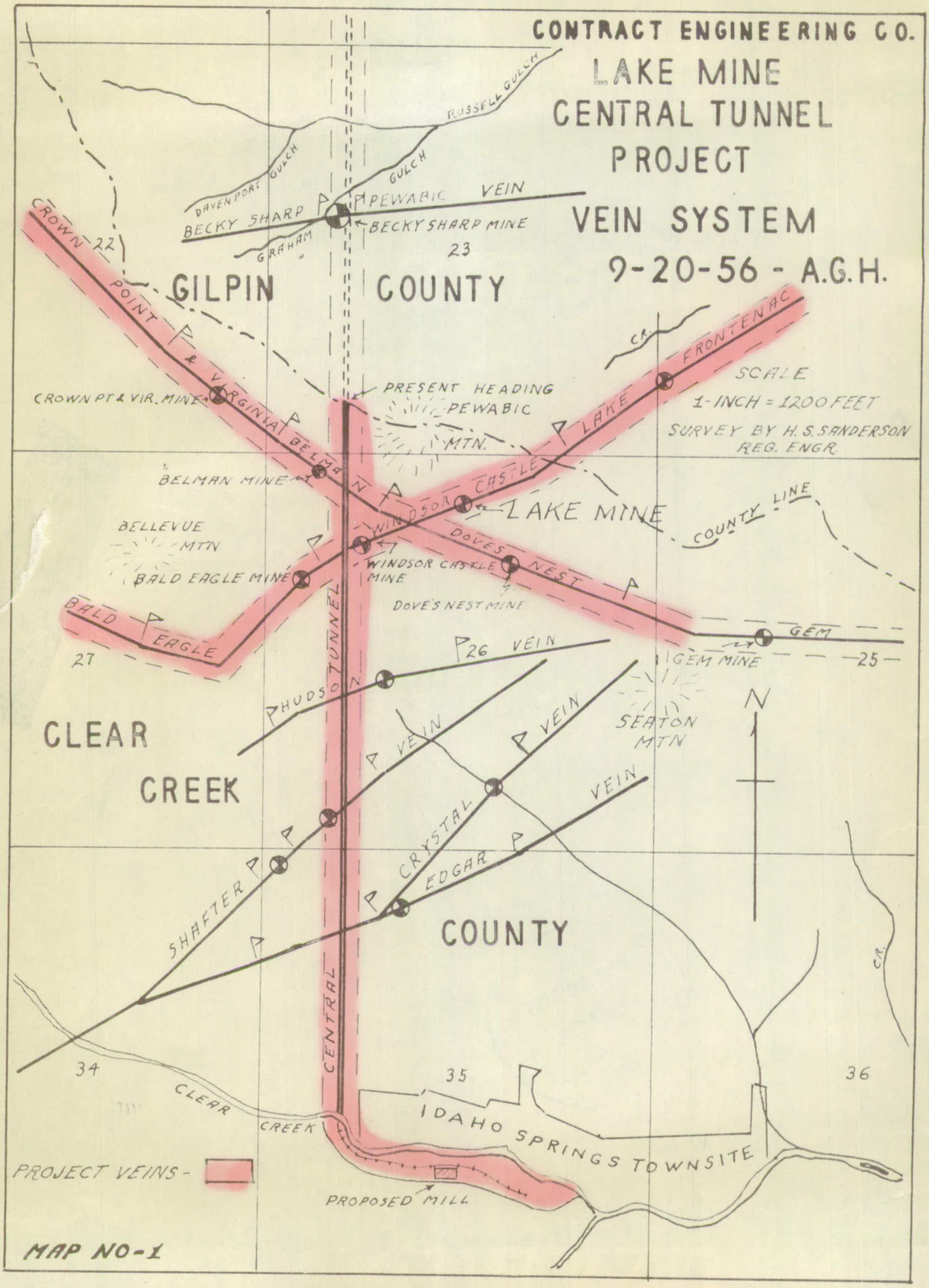
Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III, Denver, Colorado

Code 500

6816


CONTRACT ENGINEERING CO.
LAKE MINE
CENTRAL TUNNEL
PROJECT
VEIN SYSTEM
9-20-56 - A.G.H.
SCALE
1-INCH = 1200 FEET
SURVEY BY H. S. SANDERSON
REG. ENGR.
RUSSELL GULCH
DAVENPORT GULCH
GULCH
PEWABIC VEIN
BECKY SHARP
BECKY SHARP MINE
GRAHAM
23
CROWN 22
POINT
GILPIN COUNTY
CR.
FRONTENAC
CROWN PT & VIR. MINE
VIRGINIA
BELMAN
PRESENT HEADING
PEWABIC
MTN.
LAKE
BELMAN MINE
WINDSOR CASTLE
LAKE MINE
COUNTY LINE
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MTN
WINDSOR CASTLE MINE
DOVES NEST
BALD EAGLE MINE
DOVE'S NEST MINE
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GEM MINE
25
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26 VEIN
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CLEAR CREEK
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CRYSTAL
EDGAR
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34
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36
CLEAR CREEK
IDAHO SPRINGS TOWNSITE
PROJECT VEINS -
PROPOSED MILL
MAP NO-1

U. S. Government Messenger Envelope

Standard Form No. 65 (Rev. 1/46)

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2. Avoid previous block.
3. Write clearly.

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Director of Information Room 7208	RUN / STOP		RUN / STOP
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Mr. Hassington Rm 3600	RUN / STOP		RUN / STOP
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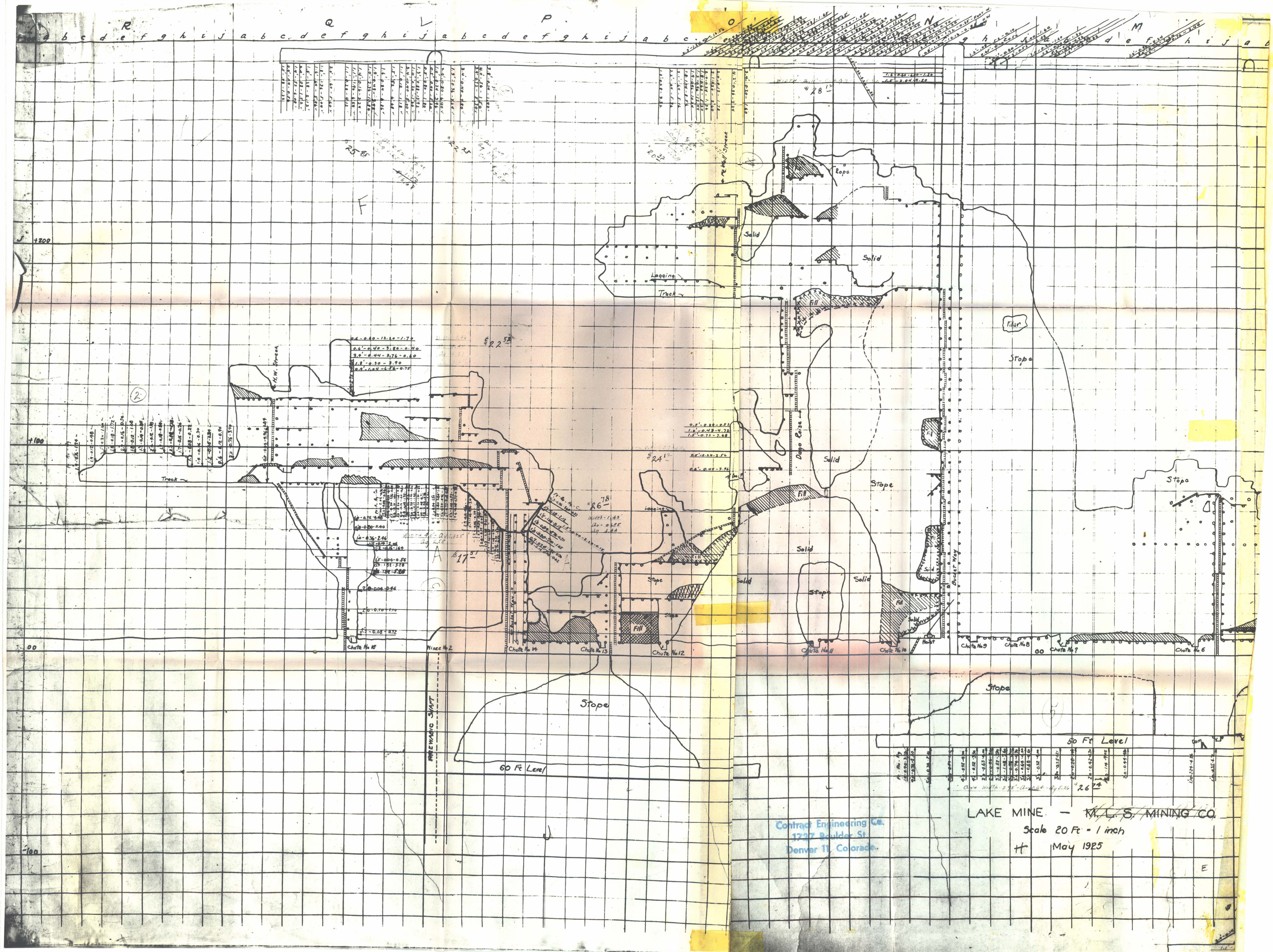
LAKE MINE — ~~K. L. S. MINING CO.~~
Scale 20 Ft = 1 inch
May 1925
Contract Engineering Co.
1727 Boulder St.
Denver 11, Colorado
60 Ft Level
50 Ft Level
Stope
Solid
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Boulder Way
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Chute No 15
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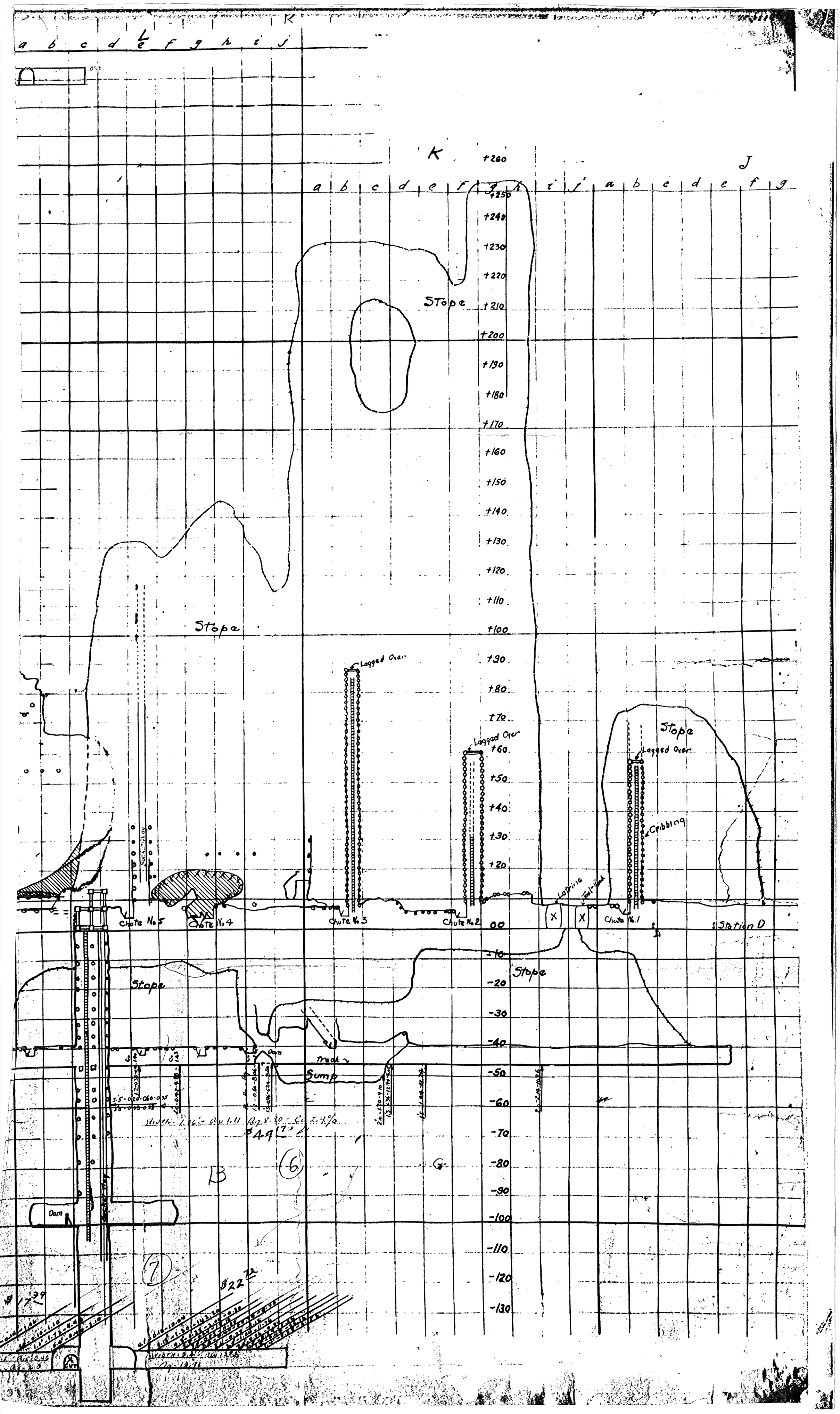
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Smelter Returns - Windsor Castle Mine - Idaho Springs Colorado - Revised by present metal prices

Date	Type of Shipment	Tons	Au	Ag	Pb	Cu	Zn	Gross Value per ton 1918	Total Net Value 1918	Gross Value per ton 1956	Total Gross Value 1956
5/22/18	Crude Direct	5.30	.05	1.52		4.97	3.00	$16.52	$62.07	$38.88	$201.50
5/18/18	" "	3.80	.30	15.15	10.00	.83	5.50	30.44	87.07	64.10	244.00
5/16/18	" Mill	13.80	.22	4.33				7.93	54.21	13.60	188.00
5/6/18	" "	13.00	.37	6.67				12.86	100.11	18.00	234.00
4/27/18	" "	30.00	.27	5.00				9.29	128.09	13.25	398.00
4/3/18	" Direct	3.40	.75	18.10	26.45	.82		42.60	123.00	117.60	400.00
3/30/18	Crude Mill	12.80	.52	10.78				19.22	176.16	26.60	342.00
3/29/18	" "	10.70	.52	10.78				24.72	146.60	26.60	284.10
3/18/18	" "	6.70	.70	6.52				10.68	49.70	15.65	105.00
2/27/18	" Direct	12.90	.22	10.31	3.85	.54	7.50	13.35	118.93	45.29	585.00
2/1/18	" Mill	12.80	.15	3.86				5.48	19.00	8.15	104.20
2/4/18	" Direct	13.50	.22	11.45	2.50		1.50	13.60	107.67	22.27	368.00
12/4/17	" "	10.13	.32	19.82	5.87	.43	3.00	27.47	202.30	52.85	535.00
12/11/17	" "	6.90	.11	18.80	37.90	.47	4.00	65.26	445.37	189.41	1310.00
12/15/17	" "	13.30	.16	1.10				10.00	73.47	13.40	129.58
10/27/17	" "	27.00	.18	16.10	5.60	2.00	3.00	26.17	505.80	53.77	1450.00
10/26/17	" Mill	6.50	.10	4.15				5.15	13.08	6.97	45.20
10/13/17	" "	16.80	.16	16.02	[illegible]	3.20	3.43	25.18	327.26	45.83	770.00
9/26/17	" Direct	14.50	.22	15.82	5.97	2.10	7.00	34.50	388.06	64.37	934.00
9/21/17	" Mill	13.00	.12	4.82				6.73	40.76	9.23	120.00
9/21/17	" Direct	11.90	.27	13.82	6.32	1.17	4.00	29.46	261.76	53.57	640.00
8/23/17	" "	7.60	.09	16.75	57.85	9.12	8.00	107.23	814.63	198.08	1500.00
8/16/17	" "	23.70	.18	14.07	9.07	2.62	7.00	35.55	655.25	73.35	1735.00
8/16/17	" "	11.80	.12	12.30	14.85	.98	9.00	49.68	470.00	93.35	1100.00
8/1/17	" Mill	21.80	.17	13.83	8.75	3.62		31.25	496.00	64.01	1400.00
7/25/17	" "	10.80	.13	3.17				4.52	16.67	7.06	77.00
7/10/17	" Direct	2.50	.32	11.80	2.77			25.70	53.64	42.80	107.00
7/3/17	" Direct	13.40	.14	13.62	15.25	1.15	7.00	40.00	474.58	79.22	1060.00
7/2/17	" Mill	14.50	.32	9.98		1.44		15.28	192.76	28.50	552.00
6/14/17	" Direct	22.00	.16	9.85	9.55	0.38	7.00	25.20	480.46	56.44	1520.00
6/29/17	" Mill	10.70	.20	3.95				6.35	30.58	10.01	107.00
6/15/17	" Direct	11.30	.22	18.20	9.75			28.20	233.75	36.50	413.00
6/16/17	" "	8.70	.18	19.37	56.25	.25	8.50	111.36	929.85	195.72	1740.00
6/12/17	" Mill	25.80	.47	11.77	6.97	1.45		26.12	454.78	52.70	1362.00
5/6/17	" "	20.00	.24	5.00				7.82	76.30	12.25	240.50
5/23/17	" "	7.40	.36	8.24	[illegible]	1.60		16.04	70.88	28.23	212.00
5/11/17	" "	16.30	.21	4.55				6.76	49.00	10.90	177.80
5/5/17	" Direct	57.90	.65	14.20	5.45	.75	2.50	32.07	1421.68	58.25	3372.00
4/19/17	" "	8.60	.22	20.20	52.05	.77	2.50	85.00	736.49	177.96	1530.00
4/12/17	" Mill	18.90	.25	4.85				7.74	70.84	12.42	235.00
4/5/17	" "	13.00	1.05	13.16				29.22	333.49	49.80	686.00
4/4/17	" "	52.70		9.80	.25			2.45	102.81	15.65	825.00
3/31/17	" "	52.70	.77	15.85	11.90	1.53		36.89	1470.42	79.50	4200.00
3/22/17	" "	47.20	.38	7.58				12.08	301.89	19.07	843.00
3/5/17	" Direct	40.00	.18	15.00	20.50	1.35	7.00	38.19	1345.24	79.71	4000.00
2/26/17	" Mill	17.10	.17	6.23				7.55	50.91	11.10	188.00
2/1/17	" "	42.60	.19	14.45	9.97	2.57		23.67	775.30	51.75	2635.00
1/19/17	" "	21.00	.10	5.40				5.31	43.50	8.08	169.30
1/2/17	" "	42.70	.23	13.62	13.30	1.92		26.03	770.18	83.10	3580.00
11/19/16	" "	13.70	.12	6.65				6.50	41.10	9.88	135.00
11/10/16	" "	30.50	.15	13.00	7.45	2.00		17.68	372.78	51.50	1878.00
11/9/16	" "	8.40	.12	5.50				5.58	19.67	8.83	74.10
10/20/16	" "	27.60	.19	10.72		2.04		14.76	256.31	28.19	783.00
10/16/16	" "	12.80	.17	16.00	11.48	1.94		24.15	232.59	53.10	810.00
9/23/16	" Direct	13.50	.34	18.30	14.55	.91	6.20	31.70	325.73	72.77	985.00
8/15/16	" "	11.10	.22	15.35	12.20	1.08	7.00	24.66	328.56	78.85	1508.00
8/3/16	" "	10.00	.31	7.65			7.30	11.75	82.14	37.26	372.60
7/13/16	" "	39.70	.19	10.70	3.40	.67	12.00	12.13	243.95	53.13	2100.00
6/29/16	" "	7.60	.16	18.00	13.80	1.00	12.00	31.70	196.05	105.65	800.00
5/31/16	" "	18.70	.20	12.35	5.05	.15	7.50	14.22	172.82	55.48	1036.00
4/26/16	" "	18.10	.15	9.70	2.10	.55	13.27	11.20	78.16	50.16	707.00
3/6/16	" "	13.60	.20	11.20	3.00	.30	10.00	10.38	80.12	46.57	634.00
2/25/16	" "	28.80	.14	9.05	1.00	.61	8.00	10.00	167.37	35.12	1015.00
Totals		1135.43							$18970.81		$59744.50

1956 Values

Au - $32.30/oz
Ag - $90.70/oz
Pb - $.274/unit
Cu - $.608/unit
Zn - $.200/unit

Avg. Weighted Value/Ton $52.65

Avg. Weighted Value/Ton Zinc corrected to $.200/unit $49.50

Avg. Weighted Value/Ton Assuming 90% mill recovery $44.50

Values allow for smelter percentage deductions

Smelter Returns - Bald Eagle Mine - Idaho Springs, Colorado

Date	Type of Concentrate	Tons Crude	Tons Conc.	Au	Ag	Pb	Cu	Zn	Gross Value/Ton	Deductions	Net Value per ton	Gross Total	NET Total
5/2/56	Jig	5960	1450	1058	2815	2230	85	660	$422.77	$13.80	$408.97	$590778	$461601
5/4/56	Floatation	12240	4050	93	3445	2810	280	1125	170.61	14.40	126.21	514785	322452
5/24/56	Crude	2900	—	10	825	1030	100	575	31.62	12.50	19.12	55648	30401
5/23/56	Jig	10400	1380	1510	2685	2100	65	650	566.79	13.40	553.39	762250	583069
5/23/56	Floatation	32300	4100	158	3910	3180	310	1560	174.01	15.28	158.73	651158	355665
6/2/56	Float	36000	4125	164	3660	3700	340	1410	188.50	14.80	173.70	716469	391821
6/7/56	Jig	11300	1325	1523	2885	2315	70	585	578.07	14.10	563.97	747204	565811
7/10/56	Floatation	10563	1430	790	2150	2618	124	450	340.24	13.20	327.04	468845	331118
8/20/56	Jig		1390	637	1583	1420	130	570	255.39	13.85	241.54	335584	276137
8/20/56	Jig	12170	1340	676	2095	2135	140	640	291.01	13.25	277.76	373212	243244
8/20/56	Floatation	37830	4450	138	3160	2700	515	1550	158.60	13.40	145.20	595385	278910
7/19/56	Jig	6217	840	920	2050	1775	140	660	362.79	13.20	349.59	294512	210846
7/27/56	Floatation	24920	3330	148	3765	2900	590	1465	176.62	15.50	161.12	537440	303262
9/4/56	Jig	13374	1530	418	1540	1235	150	555	177.66	14.15	163.51	235005	131003
9/11/56	Floatation		1400	707	1685	1340	140	650	277.80	14.15	263.65	368408	304950
9/14/56	Floatation	38826	4430	158	3040	2285	566	1650	156.97	16.50	140.47	524644	290142
9/ /56	Floatation	5000	1420	408	1465	1375	150	845	177.52	14.35	163.17	231032	160424
9/15/56	Floatation	34200	4120	91	3005	2560	575	2070	141.84	18.36	123.48	508960	224751
9/18/56	Jig	5000	1390	535	1865	2120	140	680	248.57	14.45	234.12	324326	239908
9/18/56	Jig	5000	1320	613	1845	2195	140	795	269.59	14.35	255.24	351417	262933
9/24/56	Floatation	11500	4200	176	2975	2100	605	710	126.93	16.55	110.38	464286	307773
9/24/56	Floatation	34900	4412	68	3140	2690	610	1640	140.65	17.17	123.48	437032	212721
9/24/56	Jig	5000	1450	580	1910	1985	190	665	257.38	14.35	243.03	330722	245514
10/2/56	Jig	5000	1390	490	1815	1515	150	665	221.31	14.55	206.76	287279	210135
10/3/56	Floatation	33000	4120	63	2355	2380	385	1180	111.70	15.85	95.85	384715	134101
10/8/56	Jig.	5000	1490	719	1785	2120	120	630	300.86	14.15	286.71	403587	307148
10/8/56	Floatation	28100	4480	71	2185	1785	460	1210	102.53	15.55	86.98	355696	127227
10/16/56	Floatation	5000	1500	790	1670	1845	130	540	318.07	14.35	303.72	420395	274977
10/20/56	Jig	5000	1430	730	1865	2170	130	575	306.40	14.15	292.25	378814	303227
10/20/56	Jig	5000	1390	606	1725	1870	140	515	257.82	14.15	243.67	338957	252344
10/22/56	Floatation	36400	4460	109	3135	2800	560	1495	154.33	15.55	138.38	569288	264448
10/25/56	Floatation	26300	4140	187	3825	2885	285	1525	200.79	16.53	183.66	760600	430765
10/27/56	Jig	5000	1390	1096	1850	1580	160	590	414.71	14.35	400.14	556395	437156
10/27/56	Jig	5000	1410	1243	2080	2020	120	590	475.94	14.25	461.69	550267	516955
	Totals	519900	82092									$1567092	$1042717

Ratio of Concentration 6.3 to 1

Gross Total Value per ton	$30.20	$3020
Net Total Value per ton	15.40	
Transportation, Milling, Smelting, Royalty	1080	
Mining Cost	900	
Total Cost per ton		1280
Net Profit per ton		$1040

Average Daily Tonnage - 6 mo. period - 90

Average Daily Tonnage - October only - 60

MAP NO - 3

CONTRACT ENGINEERING COMPANY

LAKE MINE - CENTRAL TUNNEL - PROJECT

9-20-56 A.G.H.

MINED AREA -

INFERRED ORE -

CROWN POINT - BELMAN - DOVES NEST - MINES

PROFILE ON VERTICAL PLANE

PASSED THRU OUTCROP

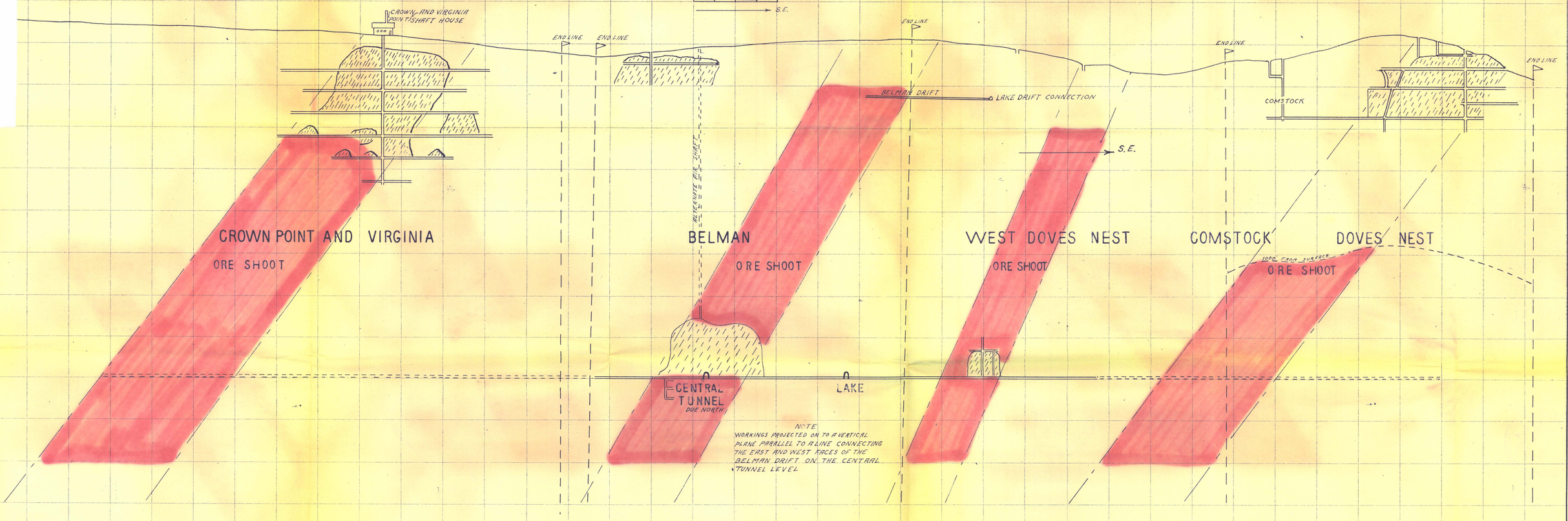
PREPARED FROM SURVEYS BY

H.S. SANDERSON REG. ENGR

SCALE - 1" = 200'

0' 100' 200' 300' 400'

S.E.



NOTE

WORKINGS PROJECTED ON TO A VERTICAL PLANE PARALLEL TO A LINE CONNECTING THE EAST AND WEST FACES OF THE BELMAN DRIFT ON THE CENTRAL TUNNEL LEVEL

TRADE STANDARD MARK
CROSS SECTION 10 X 10
MADE IN U.S.A.
KEUFFEL & ESSER CO.
NEW YORK

MAP NO-2

CONTRACT ENGINEERING COMPANY
LAKE MINE - CENTRAL TUNNEL - PROJECT
9-20-56 A.G.H.

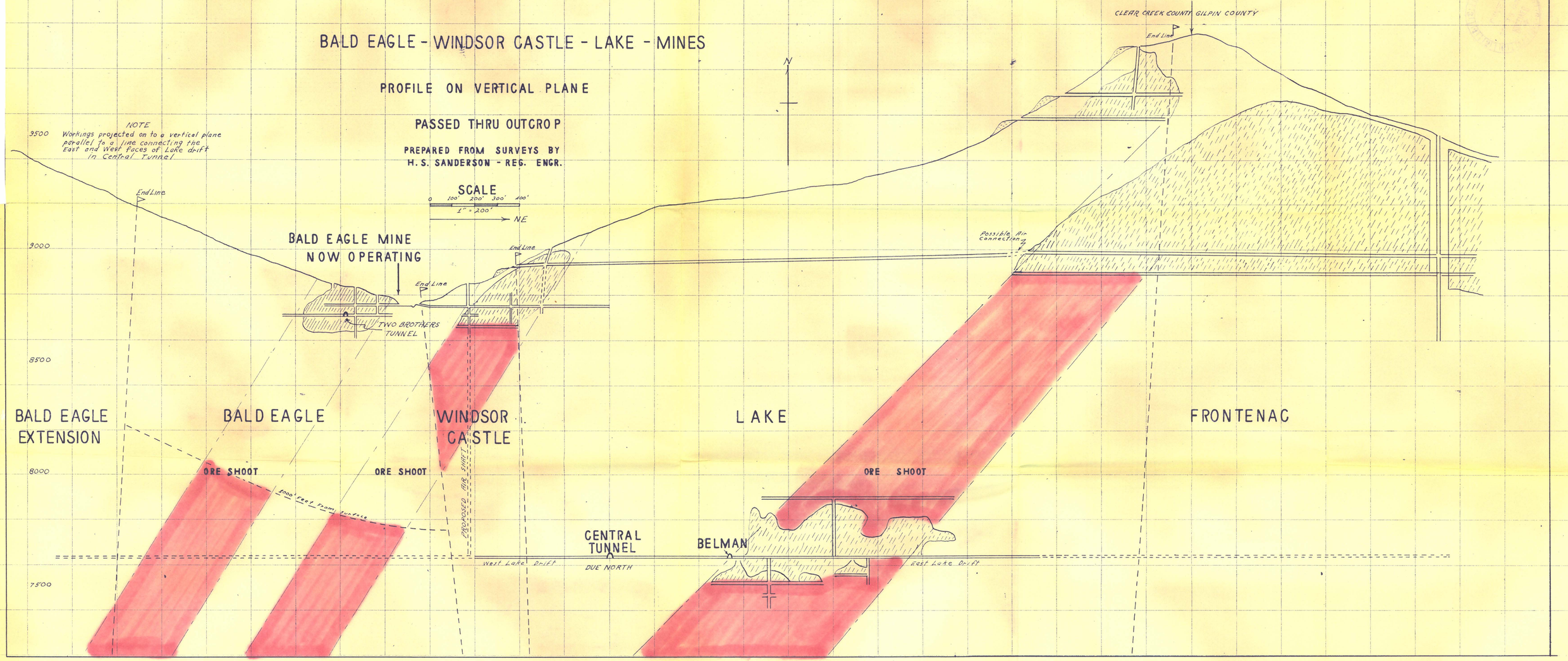
MINED AREA -
INFERRED ORE -

BALD EAGLE - WINDSOR CASTLE - LAKE - MINES

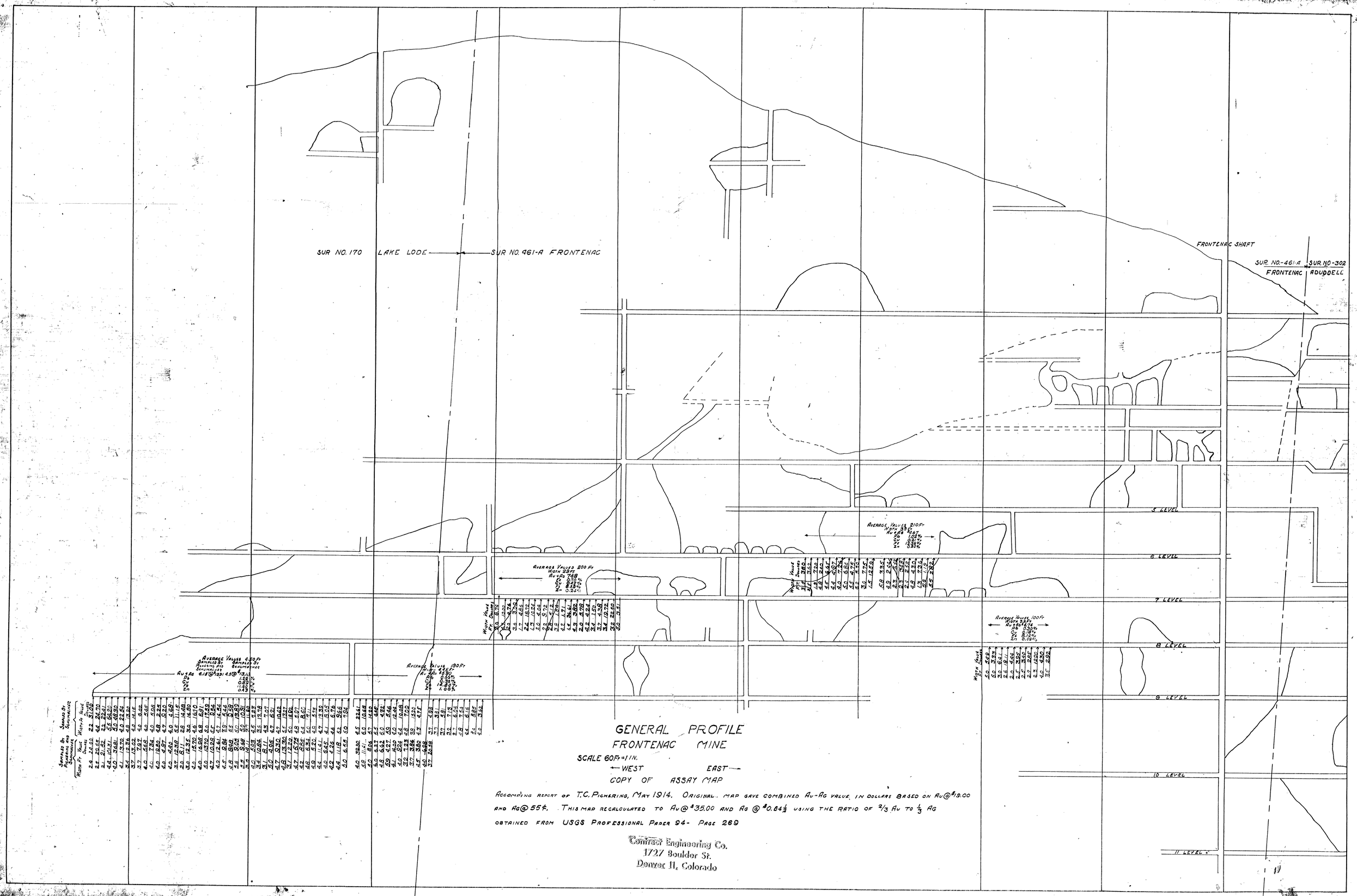
PROFILE ON VERTICAL PLANE

PASSED THRU OUTCROP

PREPARED FROM SURVEYS BY
H. S. SANDERSON - REG. ENGR.



KEUFFEL & ESSER CO. NEW YORK
TRADE STANDARD MARK CROSS SECTION 10 X 10 MADE IN U.S.A.



GENERAL PROFILE
FRONTENAC MINE

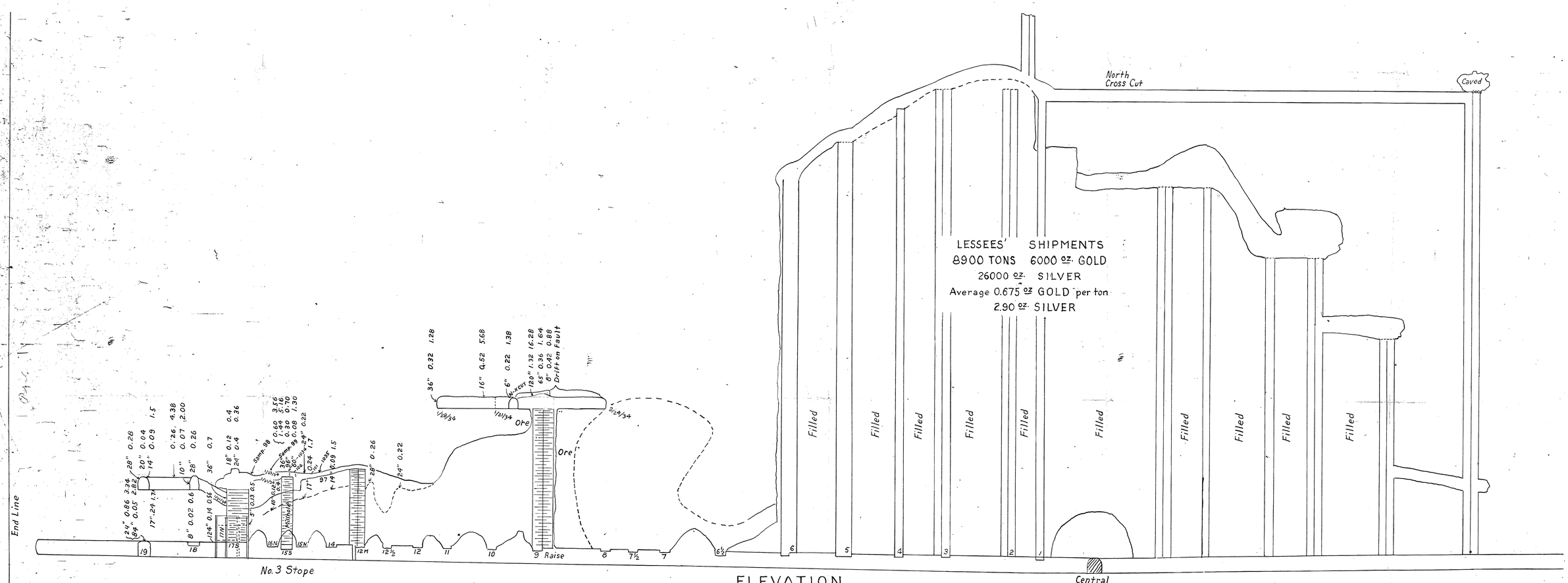
SCALE 60 FT = 1 IN.

← WEST EAST →

COPY OF ASSAY MAP

ACCOMPANING REPORT OF T.C. PICKERING, MAY 1914. ORIGINAL MAP GAVE COMBINED Au-Ag VALUE IN DOLLARS BASED ON Au @ $19.00 AND Ag @ 55¢. THIS MAP RECALCULATED TO Au @ $35.00 AND Ag @ $0.84½ USING THE RATIO OF 2/3 Au TO 1/3 Ag OBTAINED FROM USGS PROFESSIONAL PAPER 94 - PAGE 269

Contract Engineering Co.
1727 Boulder St.
Denver 11, Colorado



ELEVATION
WEST BELMAN
STOPES

SCALE
0 20 40 Ft.

Contract Engineering Co.
1727 Boulder St.
Denver 11, Colorado