UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Terminated (~~or cancelled~~) without certification. DMEA No. 946

This is the official contract file containing all official records of the project. Duplicate material has been removed. The records contained in the files are checked and are arranged in this manner:

Left Side

- ✓ Certificate of Audit (Final).
- ✓ Interim Audit(s).
- Report of Review.
- ✓ Closing Letter
- 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.
- Schedule of Collections.
- ✓ Operator's monthly reports and all attachments (latest on top).

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.
- Interim Reports.
- On-site Exam Report(s). (Tab)
- Settlement Sheets.

If additional folders are required because of volume of records, show folder numbers and contents below:

Maps in folder number 2

Operator's Monthly Reports in folder number 2

WNC
Reviewer's Initials

7973

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

AUDIT CERTIFICATE

I have examined the records and transactions of

Western Montana Exploration & Development Company
(a Montana corporation)
Successor to Key and Durand, a limited partnership
413 Western Bank Building
Missoula, Montana

pertaining to Exploration Project Contract No. Idm-E30, and Amendments 1, 2, 3, 4, 5, 6, 7, and 8, Docket No. DMA 964, covering an exploration project for lead-zinc minerals for the period of June 28, 1951 to June 16, 1953.

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

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

Total cost as billed by contractor		$89,796.29
Less:		
Salvage value of:		
Equipment	$ 942.00	
Buildings	2,267.28	
Supplies	272.38	3,481.66
Net cost claimed		$86,314.63
Exceptions		
Prior to audit	$ 96.04	
During the audit	2,794.46	$ 2,890.50
Total accepted cost		$83,424.13

The contract calls for a 50 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Forty one thousand seven hundred twelve and 07/100 Dollars

$41,712.07

is valid and proper.

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

Write [illegible]

June 13, 1953

Robert M. Hull
Robert M. Hull, Auditor

I INTRODUCTION

On February 11, 12, and 13, 1953 a final audit (covering the period of June 28, 1951 to June 16, 1953) was made of the records and accounts of operations pertaining to Contract No. Idm-E30 and Amendments Nos. 1, 2, 3, 4, 5, 6, 7, and 8, Docket No. DMA-946Y with

Western Montana Exploration & Development Company
(a Montana corporation)
Successor to Key and Durand, a limited partnership
413 Western Bank Building
Missoula, Montana

covering a project of exploration for lead and zinc minerals.

The accounting records under this contract are located in the company's office in the Western Bank Building, Missoula, Montana.

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

Dr. Roy W. Key, President
Mr. Allen McGrew, Secretary
Mr. Francis A. Hancock, Mining Engineer

Mr. Dallas Talbert assisted in the audit and Mr. John McNabb, U. S. Bureau of Mines Engineer, was consulted. Their cooperation and assistance facilitated the audit.

II GENERAL INFORMATION ON RECORDS

The accounts were not maintained in a manner to be of any assistance in the audit, but the supporting documents, together with the very meticulous cost analyses and distribution sheets maintained by the Operator's mining engineer, were adequate for properly accounting for the expenditures made for the exploration project. The monthly MF-104 submitted to the certifying officer had all the necessary supporting data attached, which

included a certified payroll summary and the original or certified copies of purchase invoices. The other costs, such as payroll taxes and equipment rental, allowable under the terms of the contract were detailed in the attachments to the MF-104.

The source documents covering the costs of this project are recorded on monthly work sheets which form the basis for the preparation of the monthly MF-104 reports. Therefore, this audit involved in general a check of the source documents against the monthly work sheets and a reconciliation of the work sheets with the cancelled bank checks. The costs for the project were recorded on a cash basis.

III SCOPE OF AUDIT AND FINDINGS

A complete analysis of all expenditures was made in order to ascertain the accuracy, propriety, and validity of the costs as shown in the "Totals to Date" column of the form MF-104, Operator's Monthly Report and Voucher, for the month of December 1952. The extent of the audit and the findings under each of the "Items of Cost" follow:

(1) Independent Contracts

Not applicable to this contract.

(2) Labor and Supervision

The payrolls and supporting data for the period of June 28, 1951 through December 31, 1952 were examined and computed for accuracy. A daily time book was maintained at the mine site by the mine engineer who also entered the total hours worked by each employee. The mine

engineer made the payroll record which shows the name of the employee, classification, time worked, rates, amount earned, deductions and net amount paid. The completed payroll was brought into the company office and submitted to the Secretary for use in preparing the monthly form MF-104. The employees were paid by check signed by the President, Dr. Roy W. Key, and countersigned by the Secretary, Mr. Allen McGrew.

The audit disclosed that the costs shown under this item on the December 1952 MF-104 as compared to the costs properly chargeable and allowable under the terms of the contract and Amendments Nos. 1, 4, 5, 7 and 8 to be:

		Corrected Distribution		Not	
	Charged	Plus	Minus	Allowable	Allowable
Labor	$42,529.00		(a)$5,809.86	(b)$1,600.00	$35,119.14
Supervision	1,579.38	(a)$6,292.50			7,871.88
Tech. Services	1,492.29		(a) 482.64		1,009.65
	$45,600.67	$6,292.50	$6,292.50	$1,600.00	$44,000.67

The total amount of labor, supervision and technical services charged to the DMEA was $45,600.67 as follows:

Geologist	$ 1,009.65	
Engineer-superintendent	7,871.88	
Bookkeeper	1,600.00	
Shift boss	5,080.00	
Cook	2,932.64	
Other labor	27,425.87	$45,920.04
Less labor charged to New Buildings, etc.		319.37
		$45,600.67
Disallowed by audit		1,600.00
Allowed by audit		$44,000.67

The item of labor $319.37 is included in (6) New Buildings, Improvements, etc. in the total sum of $2,571.35.

(a) An item of $6,292.50, properly chargeable to Supervision, was erroneously claimed under Labor in the amount of $5,809.86 and under Technical Services in the amount of $482.64.

(b) As provided by Amendment No. 1, effective June 28, 1951, the salary of a bookkeeper at $100.00 per month was allowed. The Operator claimed this item effective August 1, 1951 through November 30, 1952 in the amount of $1600.00. In a discussion with the Secretary of the company, Mr. Allen McGrew, and the Engineer, Mr. Frances Hancock, it was ascertained that the bookkeeper, Mr. Harry Alsaker, actually performed no bookkeeping services for the project, the bookkeeping and accounting work being done by the Engineer and the Secretary. Therefore, the entire amount claimed for bookkeeping services in the amount of $1600.00 is disallowed.

(3) Operating Materials and Supplies

The charges claimed in this category were checked against the monthly work sheets, and an analysis was made to determine the propriety of the items charged. The various purchases for the entire period under audit were verified against either the original invoice or a certified copy. The invoices were spot checked for proof of payment against the cancelled bank checks. The company does not maintain a stores account, and all purchases are charged directly to the project.

The majority of the costs properly chargeable under this item were erroneously classified under No. 7, Miscellaneous--Other, and No. 8, Contingencies (Specify). The items claimed under No. 8 were:

500 feet used mine rail 20# and 16#	$ 400.00
600 feet new mine rail 16#	700.00
1200 feet new galvanized pipe, 2-inch, and couplings	600.00
Rail spikes, plates, bolts and nuts	200.00
	$1900.00

An item of carbide $11.55 was carried under Initial Rehabilitation and Repairs and has been transferred to Explosives.

The total costs properly chargeable and allowable under Operating Materials and Supplies were found to consist of the following:

Lumber and timber	$ 791.13
Explosives	4,859.34
Pipe	2,161.23
Track (mine rail)	3,341.05
Small tools	124.85
Lubricants (gas and oil)	1,218.98
Power	1,180.19
Other (rail spikes, plates, bolts and nuts, etc.)	1,519.79
	$15,196.56

(4) Operating Equipment

The charges for operating equipment were checked against the monthly work sheets, invoices, cancelled bank checks, and rates specified in the contract and Amendment No. 2, effective June 28, 1951, and Amendment No. 3, effective October 18, 1951.

The audit disclosed that the proper and allowable costs shown under this item on the December 1952 form MF-104 were incorrectly distributed and that some of the costs for Equipment Rental were included under Depreciation.

Rented equipment	$13,687.00
Depreciation	5,193.80
Purchase	1,300.00

Rented Equipment	Rate	Period	Claimed	Allowable
Air compressor (315 cfm)	$414/mo.	7/26/51-9/1/52 9/21/52-9/30/52 10/1/52-12/31/52	$6,762.00	$6,762.00
Mucking machine	$250/mo.	7/26/51-9/1/52	3,298.39 (a)	3,287.50
Diesel elec. set	$225/mo.	7/26/51-11/30/52	3,643.55 (a)	3,637.50
Ingersoll Rand Little Tugger air hoist	$ 58/mo.	11/1/52-12/31/52	116.00 (a)	-0-
			$13,819.94	$13,687.00

Depreciation	Rate	Period	Claimed	Allowable
3/4-ton pickup	$ 50/mo.	6/28/51-12/31/51 2/1/52-12/31/52	$ 856.50	$ 856.50
3 mine cars	$ 30/mo.	6/28/51-12/31/51 2/1/52-12/31/52	513.90	513.90
Air blower with starter & tubings	$ 30/mo.	6/28/51-12/31/51 2/1/52-12/31/52	513.90	513.90
Ingersoll Rand DA-35 drifter w/ column, safety clamp and arm	$ 30/mo.	6/28/51-12/31/51 2/1/52-12/31/52	513.90	513.90
Ingersoll Rand R-48 stoper	$ 20/mo.	6/28/51-12/31/51 2/1/52-12/31/52	342.60	342.60
Air compressor (145 cfm)	$150/mo.	6/28/51-7/31/51	169.50 (a)	165.00
D-6 caterpillar w/6A dozer	$ 8/hr.	330 hours	2,640.00 (b)	2,288.00
			$5,550.30	$5,193.80

(a) Erroneous calculation of rentals.

(b) Operator claimed the following for snow removal and road maintenance:

December 1951 MF-104 - 24 hrs. bulldozer rental at $8/hr.	$192.00
January 1952 MF-104 - 20 hrs. bulldozer rental at $8/hr.	160.00
	$352.00

The bulldozer rental was disallowed as Amendment No. 3 states: "The Operator agrees herewith to assume all responsibility for snow removal over the Douglas Creek access road for the duration of the exploration project contract." This amendment was effective October 18, 1951.

(c) The rental of the air hoist was disallowed as it was not provided for in the contract.

During the month of January 1952, the Operator did not claim any depreciation.

Purchase	Claimed	Allowable
4 mine cars @ $325.00	$1,434.45	$1,300.00

Under the terms of Amendment No. 4 the Operator was authorized to purchase 4 mine cars. The Operator also included under this heading an item of 315 feet of 2-inch black pipe with coupling in the amount of $134.45. This item has been placed under Operating Materials and Supplies—Pipe.

(5) Initial Rehabilitation and Repairs

An item of cost in the amount of $11.55 for carbide was classified under this heading and has been transferred to Operating Materials and Supplies—Explosives.

(6) New Buildings, Improvements, etc.

The sum of $2,559.80 was claimed by the Operator for the construction of a mine building 18'x40' and a small cook house. By the provisions of Amendment No. 4, dated December 20, 1951 and effective from June 28, 1951, the following was provided for:

18'x40' mine building	$1,380.00
Boarding house bldg. to accommodate 10 men and cook	2,500.00
Miscellaneous mine fixtures	100.00
	$3,980.00

The costs claimed ($2,571.35) were adequately vouchered. Although the Operator calls the building a cook house instead of a boarding house and as it is within the amount set forth in the amendment, it has been allowed.

(7) Miscellaneous

Repairs to Equipment

The charges to this item were examined and were found to consist of the following repairs, the majority of which were disallowed:

NF-104		
July 1951	Tire repair for pickup	$ 3.75*
	Repair part for stoper drill	27.39*
	Radiator for caterpillar	30.00*
	Resharpening drill bits	32.31 (a)
	Servicing pickup	19.05*
August 1951	Repair parts for stoper drill	20.52*
	Camp building repairs	10.00*
	Welding on mine car (used for hauling timber into mine)	20.50 (a)
September 1951	Miscellaneous small tools	28.75 (b)
October 1951	Repairs to rented mine cars	23.32*
December 1951	New drill steel	39.70 (b)
	Repair parts - caterpillar	4.77*
	Welding track switch	4.00 (a)
	Repairs to stoper drill	36.70*
January 1952	Small parts - air compressor motor	.80*
	Welding starter spring on air comp.	1.50*
	Welding - mucking machine	1.55*
February 1952	Miscellaneous machine parts	13.11*
March 1952	Repair parts for mucking machine	22.88*
April 1952	Cables & bolts for mucking machine	22.72*
	Bucket for mucking machine	87.78*
May 1952	Welding car trip on mucking machine	2.50*
	Unidentified charge	2.85**
		$456.45

*These items in the amount of $328.34 were disallowed as Exhibit "C" of the contract states rental value of both the equipment owned by the Operator and the equipment to be rented "includes repairs and maintenance."

**This item in the amount of $2.85 disallowed as it could not be identified or supported.

(a) These items in the amount of $56.81 were allowed as they are legitimate charges.

(b) These items were transferred to Operating Materials and Supplies, $28.75 to small tools and $39.70 to other.

Sampling and Assaying

The charges for sampling and assaying were reviewed. The amount of $376.29, properly chargeable to sampling and assaying, was classified under Miscellaneous--Other. The amount allowable under this item is $416.54.

Payroll Taxes and Insurance

The charges for payroll taxes and insurance were checked by computation at the rates shown by the company files to be in effect. These rates were:

Social Security Tax	1.5%	
State Unemployment Tax	2.7%	
Liability Insurance	Rates	
June 1951-June 1952	.014	Office
	.056	All other
July 1952-December 1952	.02	Office
	.05	Cat Operator
	.0006	Bookkeeper
	.03	All other

The Operator claimed $1,682.66 for payroll taxes and $2,174.30 for liability insurance. As the wages for the bookkeeper in the amount of $1600.00 were disallowed, the sum of $67.20 for payroll taxes and $21.52 for liability insurance were correspondingly disallowed.

The amount allowable for payroll taxes is $1,615.46 and $2,152.78 for liability insurance.

Other

During the month of June 1952, due to the use of a revised form MF-104, the Operator lumped the items of power, transportation and miscellaneous supplies under the heading of "Other" in the amount of $7,079.05 and continued the incorrect classification through December 1952, at which time the sum was $8,719.84. This sum was analysed and distributed properly through the items of timber, lubricants, power, pipe, explosives, transportation, and sampling and assaying.

The Operator claimed an item of $125.83 for personal property taxes which was disallowed, as well as an item of $11.50 for unidentified telephone calls. The amount remaining and allowable under "Other" is $133.87, which consisted of maps and blueprints and miscellaneous items.

(8) Contingencies

There was claimed under this heading the sum of $1900.00, marked "Exhibit B" which was properly allowable under Materials and Supplies. This item has been transferred to its proper heading.

There was also claimed under this heading an item marked "Geologist" in the sum of $1111.25. This was purely erroneous classification as the

item is made up of 132 hours of bulldozing at $8.00 per hour and $55.25 for gas and oil. These items have been placed under Operating Equipment and under Lubricants (gas and oil).

The item of Miscellaneous—Other, $8719.84, was found to include transportation in the amount of $650.00 which was made up of hauling supplies and miscellaneous travel to the mine site and mine office.

Exception was taken to an item of Transportation in the amount of $57.50 which covered expenses for a trip to Spokane, Washington, and which was not allowed. The amount allowed for Transportation was $592.50.

IV CONCLUSIONS AND RECOMMENDATIONS

This audit has disclosed that the costs as charged to this project, with the exception of the disallowances itemized under items (2) Labor and Supervision, (3) Operating Materials and Supplies, (4) Operating Equipment, and (7) Miscellaneous, of the preceding section of this report, are in accordance with the contract and the amendments thereto.

During the course of the exploration project the Certifying Officer made the following disallowances:

MF-104			
October 1951	Labor	$195.00	Items not specified in contract.
	Boarding house	357.63	
	Facilities	47.89	
	Buildings	82.90	
	Fixtures	52.95	
		$736.37	
November 1951	Buildings	$329.79	
	Fixtures	52.95*	
	Equip. purchased	1300.00*	
	Labor	120.00	
	Boarding house	252.13	

*Reclaimed in December; authorized by Amendment No. 4.

MF-104				
January	1952	Equipment purchase	$300.00	Purchase not covered by contract.
		Transportation	82.23	Transportation not in connection with project.
May	1952	Transportation	36.20	
		Geological inspection	400.61	Items not authorized.
		Labor	175.28	
June	1952	Miscellaneous - Other	581.07*	Items could not be identified as there was no support.
August	1952	Miscellaneous - Stamps and telephone bill	15.85	Overhead not allowed.
September	1952	Miscellaneous	96.04**	Miscellaneous office supplies.

*Reclaimed in July, properly supported and distributed.

**The Operator did not adjust the October, November and December MF-104's to reflect this disallowance in September 1952.

The various disallowances were reviewed and are concurred in. The items that were reclaimed are justified and allowable.

The audit also disclosed that the status of the allowable costs as of the close of the contract on December 31, 1952, was:

Item	Allowable cost	Total cost	Balance
Consulting geologist	$1500.00	$1009.65	$ 490.35
Bulldozing	3000.00	3000.00	-0-
Additional drifting	15600.00	15600.00	-0-
Raising	3000.00	3000.00	-0-

The Western Montana Exploration and Development Co., Inc., on June 11, 1953, made an offer in writing to purchase the 4 mine cars for $942.00, the mine building and cook house for $2267.28, and the remaining supplies for $272.38, and proposed that 50 percent of the amount be withheld from their final settlement to pay the Government for its equity.

The Operator's offer was accepted by the Executive Officer, DMEA Field Team, Region 11, on June 16, 1953.

The costs claimed by the Operator of $89,796.29 were in excess of the contract price of $85,850.00; however, after disallowances and salvage, the net cost of the contract amounted to $83,424.13 as indicated on Schedule A attached.

June 18, 1953

Robert M. Hull

Robert M. Hull, Auditor

Contract No. Ida-830 — WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY — Schedule A

	Totals Dec. 1952 MF-104	Disallowances Cert. Off.	Disallowances Auditor	Corrected distribution Plus	Corrected distribution Minus	Allowed by audit
Labor and Supervision						
Labor	$42,529.00		$1,600.00		(1) 5,809.86	$35,119.14
Supervision	1,579.38			(1) 6,292.50		7,871.88
Tech. Services	1,492.29				(1) 482.64	1,009.65
Oper. Mat'ls & Suppl.						
Timber	202.85			(4) 588.28		791.13
Explosives	3,865.88			(4) 981.91		4,859.34
				(8) 11.55		
Pipe	345.97			(4) 1,080.81		2,161.23
				(5) 134.45		
				(2) 600.00		
Track (mine rail)				(4) 2,241.05		3,341.05
				(2) 1,100.00		
Small tools			90.28	(4) 186.38		124.85
				(6) 28.75		
Mining Supp. (Other)	1,376.13	$96.04		(6) 39.70		1,519.79
				(2) 200.00		
Lubr. (gas & oil)				(4) 1,163.73		1,218.98
				(3) 55.25		
Power				(4) 1,180.19		1,180.19
Operating Equipment						
Rental	14,427.14		489.44	(7) 1,146.30	(9) 2,453.00	13,687.00
				(3) 1,056.00		
Purchase	1,434.45				(5) 134.45	1,300.00
Depreciation	3,887.10			(9) 2,453.00	(7) 1,146.30	5,193.80
Initial Rehab & Repairs	11.55				(8) 11.55	-0-
New Buildings, etc.	2,559.80					2,559.80
Miscellaneous						
Repairs to Equip.	456.45		331.19		(6) 68.45	56.81
Sampling	40.25			(4) 376.29		416.54
Payroll taxes	1,682.66		67.20			1,615.46
Liability insurance	2,174.30		21.52			2,152.78
Other	8,719.84		137.33	(4) 271.20	(4) 8,719.84	133.87
Contingencies						
Exhibit "B"	1,900.00				(2) 1,900.00	-0-
Geologist	1,111.25				(3) 1,111.25	-0-
Transportation			57.50	(4) 650.00		592.50
	$89,796.29	$96.04	$2,794.46	$21,837.34	$21,837.34	$86,905.79
Salvage value of equipment, buildings and supplies						3,481.66
						$83,424.13

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

1201 N. Division St.
Spokane 2, Washington
May 15, 1953

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Subject: Docket No. DMEA 946X (lead-zinc)
Western Montana Exploration & Development Co.
(Key-Durand)
Contract Idm-E30

Dear Mr. Chambers:

An interim audit covering the period of June 28, 1951 to November 30, 1952 was made on February 11, 12 and 13, 1953 of the records and accounts of operations pertaining to Contract Idm-E30 and Amendments Nos. 1, 2, 3, 4, 5, 6, 7 and 8, Docket No. DMEA 946X, Western Montana Exploration & Development Co., successor to Key-Durand, a limited partnership, 413 Western Bank Building, Missoula, Montana. Mr. E. Dallas Talbert assisted in this audit. The final audit report and certificate are being withheld pending the disposition of equipment, buildings and supplies in which the Government has an equity.

The exploration project contract in Exhibit "C" provides a detailed list of Operating Equipment to be rented, purchased or furnished by the Operator, with the allowable rental, purchase price, or rental value. The equipment to be rented is as follows:

	Rental value
1 Eimco 12B mucking machine	$250.00/mo.
1 UCD-9 International, 20 Kw, 3 phase, 220-440 volt, Diesel electric set	225.00/mo.
1 Diesel driven air compressor, D-311 caterpillar engine, serial No. 7-S-5226, V-belt connected Gardner-Denver 2 stage 145 cfm compressor, type WBR-4010, serial No. 147091, complete with 30"x84" Gardner-Denver air receiver. All units on angle iron frame mounted on three 8"x8" skids. (This piece of equipment is owned by Dr. Roy W. Key.)	150.00/mo.

The rental value includes repairs and maintenance.

By the terms of Amendment No. 2, effective June 28, 1951, in Exhibit "C", under Rental Value of Equipment Owned by Operator, the Diesel driven air compressor with rental value of $150.00 per month was deleted, and in its place was added 1 - 315 cfm air compressor (portable) with rental value of $414.00 per month.

Mr. John S. McNabb, Mining Engineer, U. S. Bureau of Mines, on April 17, 1953 wrote a memorandum to the DMEA Field Team, Region II, concerning the disposition of mining equipment, buildings and supplies owned jointly by the DMEA and the Western Montana Exploration & Development Co. A copy of this memorandum is attached.

As a result of Mr. McNabb's memorandum I further reviewed the case and by correspondence with the Operator and the Miller Machinery Co., the lessors of the rented equipment, developed the following facts.

The Government has contributed through September 1952 the following amounts, as evidenced by the MF-104s:

	Compressor	Generator	Eimco loader
7/26/51- 8/1/51	$ 69.00	$ 37.50	$ 66.64
8/1/51 - 9/1/51	414.00	225.00	250.00
9/1/51 -10/1/51	414.00	225.00	250.00
10/1/51 -11/1/51	414.00	225.00	250.00
11/1/51 -12/1/51	414.00	225.00	250.00
12/1/51 - 1/1/52	414.00	225.00	250.00
1/1/52 - 2/1/52	414.00	225.00	250.00
2/1/52 - 3/1/52	414.00	225.00	250.00
3/1/52 - 4/1/52	414.00	225.00	250.00
4/1/52 - 5/1/52	414.00	225.00	250.00
5/1/52 - 6/1/52	414.00	225.00	250.00
6/1/52 - 7/1/52	414.00	225.00	250.00
7/1/52 - 8/1/52	414.00	225.00	250.00
8/1/52 - 9/1/52	414.00	225.00	250.00
9/1/52 -10/1/52	138.00*	225.00	—

*10 days rental only

Total $12,093.14

There are MF-104s covering October, November and December 1952 which have not been paid by the Government. The Operator has made the following rental claims for these three months:

	Compressor	Generator	Air hoist*
October 1952	$414.00	$225.00	—
November	414.00	225.00	$58.00
December	414.00	—	58.00

*The Ingersoll-Rand I_H Little Tugger air hoist is not provided for in the contract or its amendments and is therefore not allowable.

(In November 1952 the Operator included under equipment rental the sum of $160.00 properly chargeable to depreciation.)

The rental charges for the compressor, generator, loader and air hoist were from the Miller Machinery Company with the exception of the rental of the compressor for the months of September, October, November, and December 1952.

The Western Montana Exploration & Development Co. became in arrears in their payments to the Miller Machinery Co., and the Miller Machinery Co. repossessed the portable air compressor and the Eimco mucking machine (loader) as of September 1, 1952. The Miller Machinery Co. stated in a letter to the Executive Officer, DMEA, Region II, dated April 29, 1953, that: "These three items of equipment were picked up and returned to our stock due to the fact that rental payments were in arrears and also because of the indication that the development work would cease because of weather conditions." Apparently, all three items of equipment were not returned to the Miller Machinery Co. at the same time as the Operator claimed rental on the generator through the MF-104 for the month of November 1952.

The Operator then leased from the Lyon Construction Co. of Missoula, Montana, a Gardner-Denver portable diesel air compressor at $414.00 per month for a period of 10 days in September and for the months of October, November and December 1952, at the same time continuing the rental of the Diesel generator set from the Miller Machinery Co. through November 1952.

In the rental agreements between the Miller Machinery Co. and the Key-Durand Mining Co. and its successor, the Western Montana Exploration & Development Co., it is stated that: "It is further agreed that the LESSEE may at any time during the life of this agreement and while he is not in default hereunder have the option to purchase all the property described in this rental agreement for the sum of . . . provided LESSEE gives the LESSOR written notice of his intention to exercise this option. If LESSEE so purchases said property, he shall be given credit upon the purchase price for the full amount of the initial rental payment, and for 80% of each subsequent month's rental theretofore paid under this agreement."

The Operator paid the Miller Machinery Co. a total of $4,396.14 on their rentals, as follows:

	Checks drawn on personal account of Roy W. Key with the First National Bank of Missoula	
Sept. 1, 1951	Check #3468	$ 889.00
" 1, 1951	" #3469	173.14
Jan. 14, 1952	" #3760	500.00
Feb. 25, 1952	" #3860	1000.00
	Checks drawn on Western Montana Exploration & Development Co., Inc. Account with First National Bank of Missoula	
Nov. 9, 1951	Check #101	$1000.00
Mar. 13, 1952	" #165	834.00
	Total paid	$4396.14

No payments were made in cash.

The Government has contributed to the exploration contract through September 1952 a total of $12,093.14 on equipment rental.

The Operator did not claim rental on the generator after November 1952, but the Miller Machinery Co.'s letter of May 4, 1953, giving a transcript of the rental account of the Operator shows generator rental to January 1, 1953.

The Operator purchased outright 4 mine cars, 20 cu. ft. capacity, for $1300.00. There are also mine buildings with an original value of $2059.80 and assorted mine supplies per attached inventory as of December 31, 1952 with an original value of $524.64.

As pertains to Mr. McNabb's memorandum and the statements made by the Miller Machinery Co. to the effect that the Operator was in arrears in his payments and that the Operator did not exercise his option to purchase the equipment, how should final settlement be effected with reference to the rented equipment and the purchased items? The Field Team has not received any specific offer as yet from the Operator in this matter.

It will be greatly appreciated if you will advise me as to what should be done with this case.

Sincerely yours,

Robert M. Hull

Robert M. Hull
DMEA Auditor

cc: Field Team, Reg. II
J. S. McNabb

FILE COPY
SURNAME:
500

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

SEP 2 1953

Dr. Roy W. Key
Western Montana Exploration
and Development Company
412 Western Bank Building
Missoula, Montana

Re: Docket No. DMA 946 (Lead-Zinc)
Western Montana Exploration and
Development Company
Wasa-Shamrock Mine
Granite County-Montana
Contract No. Idm-E30

Dear Dr. Key:

This is with reference to the subject exploration contract between your company and the Government.

The final audit of the contract expenditures and the final reports of the Operator have been received and accepted by this Administration. Of the total amount of $85,850.00 approved under the contract, the sum of $83,424.13 represents accepted and approved expenditures, after crediting sales of equipment, buildings and supplies. Of this latter sum, 50 per cent, or $41,712.07, represented the Government's share. The exploration work was completed in a satisfactory manner.

Because the results of the exploration were unfavorable, it is not our intention to make a certification of discovery or development which would create a lien against the subject property. We are, therefore, closing our books and records with respect to this project. Your attention is called, however, to Article 12 of the Contract which requires the Operator to "keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract".

Your interest in the Exploration Program of the Defense Minerals Exploration administration and your willingness to participate therein are appreciated.

Sincerely yours,

George C. Selfridge

ACTING Administrator

WRGriswold/hmj
(8/27/53)

CC to: Docket
Adm. R. File
Op. Committee
Base Metals Division
Mr. Kinkel
Mr. Bishop
Region II
Chron.

R.C.G. 9-2-53

UNITED STATES 140
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

JUN 19 1952

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 8, Washington

Dear Mr. Weissenborn:

Reference is made to your letter to the Chief Counsel, dated April 29, with enclosures.

Attached is the consent of the Government to the assignment of the subject contract to Western Montana Exploration and Development Company.

You are authorized to fill in the cut-off date as between assignor and assignee as of any suitable date between the date of the assignment and the date of the consent. This is necessary inasmuch as this office is not advised as to the current status of the work or of vouchers for payment under the contract.

Very truly yours,

C. O. Mittendorf

Acting Administrator

Attachments
6/17/52

JLHofflund/em

Copy to: Mails and Files
J. L. Chambers
C. O. Mittendorf
Adm. Reading File
J. L. Hofflund
chron.

GOVERNMENT'S COPY

CONSENT TO ASSIGNMENT
(Key and Durand
Docket No. DMA-946
Contract Idm-E30)

To: Key and Durand, a partnership composed of Roy W. Key and O. J. Durand

and

To: Western Montana Exploration and Development Company, a Montana corporation, with principal place of business at Missoula, Montana.

Reference is made to the following:

1. Exploration Project Contract, Docket No. DMA-946, Idm-E30, dated June 28, 1951, between the United States of America, hereinafter called the "Government", and Key and Durand, hereinafter called the "Operator", for the performance of exploration work on certain lode mining claims, mill sites and tunnel sites; and

2. To Deed of Mining Claim dated October 26, 1951, recorded in Volume 34 of Deeds, page 389, records of said County, by said Operator to Western Montana Exploration and Development Company, hereinafter called "Assignee"; and

3. Assignment of Contract dated November 21, 1951, by which said Operator transfers and assigns to said Assignee all of its right, title and interest in and to said contract; to which is attached the "Acceptance of Assignment" of said Assignee dated November 27, 1951.

The Government, without releasing said Operator, hereby consents to said Assignment; Provided, That the cut-off date for contributions by the Government under the terms of said contract, as between the Operator and the Assignee, shall be June 1, 1952, the Government's contributions up to and including said date being for the account of the Operator, and after that date being for the account of the Assignee.

Dated June 18, 1952.

THE UNITED STATES OF AMERICA

JUL 7 - 1952

By O. Mittendorf
Acting Administrator
Defense Minerals Exploration
Administration

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 N. Division St.
Spokane 2, Wash.
February 29, 1952

Dmea-946

MEMORANDUM

To: Chairman, Operating Committee, DMEA, Washington 25, D. C.

From: Field Team, Region II

Subject: Assignment of contract Idm-E30, Key-Durand

An assignment of the subject contract from Key and Durand, a partnership, to the Western Montana Exploration and Development Co. is enclosed for review and appropriate action.

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

M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosure

RECEIVED
MAR 18 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

cc: USGS, Spokane

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 1 1952

ASSIGNMENT OF CONTRACT

KNOW ALL MEN BY THESE PRESENTS, that we Roy W. Key and O. J. Durand, heretofore doing business as a mining partnership under the firm name and style KEY and DURAND, for and in consideration of the sum of Ten Dollars and other good and valuable consideration, the receipt of which is hereby acknowledged, do hereby transfer, assign and set over unto WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY, a Montana Corporation, all of our right, title and interest in and to that certain contract between said Key and Durand, a mining partnership and the Defense Minerals Administration, an agency of the United States. Said contract is described as that certain contract DMA Docket No. 946X, Exploration Project Contract No. I-DMA-E30, and dated June 28,1951.

This contract is made subject to an acceptance thereof by the Defense Minerals Administration.

IN WITNESS WHEREOF, we have hereunto set our hands this 21st day of November 1951.

Roy W. Key

O. J. Durand

Individually and as partners.

STATE OF MONTANA, }
County of Missoula. } ss

On this 27th day of November, 1951, before the undersigned, a Notary Public for the State of Montana, residing at Missoula, Montana, personally appeared ROY W. KEY, known tome to be one of the persons whose name is subscribed to the foregoing instrument, and acknowledged that he executed the same.

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

Shirley Kossack
Notary Public for the State of Montana, residing at Missoula, Montana. My Commission expires October 1, 1954.

STATE OF MONTANA, }
County of Granite. } ss

On this 27th day of November, 1951, before the undersigned, a Notary Public for the State of Montana, residing at Hall, Montana, personally appeared O. J. DURAND, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same.

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

F. M. Moses
Notary Public for the State of Montana, residing at ~~XXXXXXXXX~~ Hall, Montana. My Commission expires April 29th 1952

ACCEPTANCE OF ASSIGNMENT

The Western Montana Exploration and Development Company, a Montana Corporation, does hereby accept the foregoing Assignment of Contract, together with all of the obligations placed by said contract upon O. J. Durand and Roy W. Key, the original parties thereto, and the Western Montana Exploration and Development Company does by these presents agree to and with the Defense Minerals Administration to be bound by said contract in all respects as though it were named as a party therein.

IN WITNESS WHEREOF, said corporation has caused this instrument to be executed by its duly authorized officers this 27th day of November, 1951.

WESTERN MONTANA EXPLORATION
AND DEVELOPMENT COMPANY

By Roy W. Key
President

Attest:

_____

STATE OF MONTANA,
County of Missoula. } ss

On this 27th day of November, 1951, before the undersigned, a Notary Public for the State of Montana, residing at Missoula, Montana, personally appeared ROY W. KEY, known to me to be the President of the corporation whose name is subscribed to the within instrument, and acknowledged to me that such corporation executed the same.

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

Shirley Hossack
Notary Public for the State of Montana, residing at Missoula, Montana. My Commission expires October 1, 1954

Docket No. DMEA 946X
(Pb-Zn-Cu)

Government Copy

AMENDMENT NO. 8

It is agreed this 19th day of November 195 2, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, and Western Montana Exploration and Development Co., 412 Western Bank Bldg., Missoula, Montana

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract Idm-E 30 of June 28 195 1 between the parties hereto be modified and amended as described in Exhibit "F" attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be September 1 195 2.

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

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

Executed in sextuplicate the day and year first above written.

WESTERN MONTANA EXP. & DEV. CO.
(Operator)

By Ray W. Ley

THE UNITED STATES OF AMERICA

By M. E. Volin

~~N. E. Weissenborn, Exec. Officer~~
DMEA Field Team, Region II
M. E. Volin, Acting Exec. Officer

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 23 1952

Western Montana Exploration & Development Co.
Exploration Project Contract Idm-E30

AMENDMENT NO. 8

Exhibit "F"

Changes and modifications

Exhibit "A" of the contract as amended in Amendment No. 7 is further amended as follows:

1. On Page 1, Amendment No. 7, delete Item No. (2), "Diamond Drill 500 feet in vicinity of Diamond Drill Hole No. 8A . . . . " and substitute the following:

"Raise 96 feet 1/ in vicinity of Diamond Drill Hole No. 8A from the above mentioned drift or crosscut.

96 feet @ $31.25 $3,000.00"

1/ The Government will contribute to the cost of raising to the extent that funds are available under the contract. In the event the raise cannot be completed within the total amount of the contract, as amended, the Operator shall complete it at his own expense.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 2 0 1952

Western Montana Exploration and Development Company
Exploration Project Contract Idm-E30

Justification for Amendment No. 8

This amendment is prepared to allow for 96 feet of raising to cut ore exposed in USBM Diamond Drill Hole No. 8A. The estimated cost of the raise is $31.25 per foot or $3,000.00. The Government will contribute to the cost of raising to the extent that funds are available under the contract. In the event the raise cannot be completed within the total amount of the contract, as amended, the Operator shall complete it at his own expense.

Funds remaining in the contract are insufficient to complete the diamond drilling program as specified in Amendment No. 7, item No. (2). At the time the diamond drilling program was to commence it was brought to the Field Team's attention that the Operator's equipment was inadequate to conduct the proposed drilling. Furthermore, funds allowed in Amendment No. 7, item No. (1), had been expended and the exploration heading had not reached a suitable location for the establishment of a practical drill site. As the exploration heading was directly below ore exposed in Diamond Drill Hole No. 8A, a raise to the ore intercept was advantageous.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 2 6 1952

AMENDMENT NO. 7 GOVERNMENT COPY

It is agreed this 17th day of September, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration and Western Montana Exploration and Development Company, Inc. each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30 of June 28, 1951 between the parties hereto be and the same hereby is further modified and amended, effective as of the date of the original contract as follows:

> In Article 3, the words "twelve months" are deleted and replaced by the words "eighteen months", and the words on the fourth and fifth lines "all properly designed to bring the project to completion" are deleted and replaced by the words " and shall bring the project to completion".
>
> In Article 11, the figures "$33,250.00" and "$66,500.00" are deleted and replaced respectively by the figures "$42,925.00" and "$85,850.00".

This amendment is intended to provide additional funds of $19,350.00 to complete the following already authorized but uncompleted work (at the costs indicated which are not to be exceeded) if and to the extent that the Government approves the work as it progresses.

(1) Continue south drift 280 feet to the area of U. S. Bureau of Mines Diamond Drill Hole No. 8A; and crosscut east and west, a total of 120 feet.

400 feet @ $39.00/ft. * $15,600.00*

(2) Diamond Drill 500 feet in vicinity of Diamond Drill Hole No. 8A from above-mentioned drift or crosscut.

500 feet @ $6.00/ft. * $ 3,000.00*

(3) For a part time consulting geologist for two months - $750.00.*

* any costs above these figures shall be borne solely by the Operator.

Western Montana Exploration and Development Company, Inc.
(Operator)

By Roy W. Key

The United States of America

By C. J. Mittendorf
Administrator, Defense Minerals Exploration Administration

Docket Copy
DMA-946
Lead, Zinc

(Amendment to Change Starting and Completion Dates)

AMENDMENT NO. 6

It is agreed this 26 day of June 195 2, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Western Montana Exploration and Development Co., Inc., 412 Western Bank Building, Missoula, Montana

each acting in consideration of the agreement to the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-930 of June 28 195 1 between the parties hereto be modified and amended to change the starting date from — (No. of day) to within — (No. of days) of the date of the contract and the completion period from 12 (No. of months) to 13 (No. of months) from the date of the contract. The effective date of this amendment shall be June 26 195 2.

This amendment is made by authority granted the Executive Office, DMA Field Team, Region II in Order No. 2684 by the Acting Secretary of the Interior.

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

Executed in sextuplicate the day and year first above written.

Western Montana Exploration & Development Company, Inc.
412 Western Bank Building,
Missoula, Montana
(Operator)

By Ray W. Ray

The United States of America

By A. E. Weissenborn
A.E.Weissenborn, Exec. Officer
DMEA Field Team, Region II

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 11 1952

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JUL 8 1992
OSTI

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

July 3, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
WASHINGTON
JUL 11 1952

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

Dear Mr. Johnson:

Enclosed are three copies of Amendment No. 6 to the Western Montana Exploration and Development Co., Inc., contract I-DMA-E30, which requires an extension of one month on the termination date of the contract. The time extension is necessary to permit the work to be completed. One copy has been retained for our files, one copy for the Operator, and one copy for the Fiscal Officer, Albany, Oregon.

Sincerely yours,

Thor H. Kiilsgaard

Thor H. Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM, Spokane
USBM, Albany

gds 7-15-52

Government Copy
Lead. Zinc
DMA-946

AMENDMENT NO. 5

It is agreed this 2nd day of June 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Western Montana Exploration and Development Company, Inc., a Montana corporation, 412 Western Bank Building, Missoula, Montana

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30 of June 28, 1951 between the parties hereto be modified and amended as described in Exhibit "F", attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be June 2, 1952.

This amendment is made by authority granted the Executive Officd, DMA Field Team, Region II in Order No. 2684 by the Acting Secretary of the Interior.

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

Executed in sextuplicate the day and year first above written.

Western Montana Exploration and Development Company, Inc. (Operator)

By Roy W. Key

The United States of America

By A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region II

Western Montana Exploration & Development
Company, Inc.
Contract I-DMA-E30
Amendment No. 5

EXHIBIT "F"

In Exhibit "D", schedule of labor, add:

1 consulting geologist, to be employed for a period not to exceed 1 month.	$750/mo.

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

So. 157 Howard Street
Spokane 4, Washington

July 7, 1952

Memorandum

To: Operating Committee, DMEA

From: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

Subject: Amendment No. 5, Western Montana Exploration and Development Company, Inc., Docket DMEA-946, Lead-Zinc (formerly Key-Durand)

Reference is made to my memorandum to you dated June 25, 1952 transmitting subject amendment.

The delay in getting the amendment to you was occasioned by the necessity of rewriting the amendment to reflect the change in company name in accordance with the Consent to Assignment which was effective June 1, 1952. The amendment was effective June 2, 1952. It was returned to the operator for resigning and received in this office just today.

Thor H. Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: USBM, Spokane

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 9 - 1952

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

Co. 157 Howard Street
Spokane 4, Washington

June 24, 1952

Memorandum

To: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. 946, Kay-Durand, Wasa Mine, Granite County, Montana, Amendment No. 5 to Exploration Project Contract I-DMA-E-30.

Results of exploration to date under Exploration Project Contract I-DMA-E30 have shown a need for re-evaluation of the project. Some of the basic geologic interpretation upon which the project was planned appears to be in error. No ore body similar to the Wasa ore body has been found.

The geologic problems involved are not simple. The sediments in the vicinity of the mine are folded into tight folds; metamorphism and faulting causes further complication. Mineralization is supposed to be controlled by these folds and accompanying faults.

The mine management realizes the geologic problems with which it is confronted, and has asked for the services of a consulting geologist. It will take several weeks of detailed study and mapping in the area before many of the problems are solved. As the DMEA is not staffed to undertake such studies, it is recommended that the applicant's request to hire a competent consulting geologist be approved.

J. J. Quinlan
Geologist

cc: USBM, Albany
USBM, Spokane
USGS, (ERO)

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 8 - 1952

No. 157 Howard Street
Spokane 4, Washington

June 25, 1952

Memorandum

To: Operating Committee, DMEA

From: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

Subject: Employment of Geologist under Key-Durand, I-DMA-n-30, Docket DMEA-946, Lead-Zinc.

Enclosed are the original and two copies of Amendment No. 3 to the subject contract to permit the employment of a geologist for a period not to exceed one month. The exploration to date at the Key-Durand property has shown interesting amounts of mineralization, but to date has discovered no ore. It is felt that perhaps we are missing a bet by lack of understanding of the details of the geologic control of the ore, which in part was uncovered in some of the trenches on the outcrop. The structure is exceedingly complex and the Field Team has long urged that some geologic studies be made so that exploration could be properly directed. Even though the hiring of a geologist comes near the end of the last date of the exploration, we feel it is distinctly worthwhile in appraising and trying to determine whether an extension of the contract should be requested to permit additional exploration. The geologist selected is on the geological staff of the University of Montana and is well known to us and his selection has our approval.

There may be some question as to the salary of $750 a month. However, I should like to point out that this same geologist received a salary of $1200 a month last summer with an oil company, in addition to which he received his living and travel expenses. He will not be paid any expenses on this present job. The $750 salary will take care of all his salary and living expenses. Furthermore, if it were possible to employ this man for a longer period he would probably have been willing to work for a lesser monthly salary, but for the short-time period of one month he felt that he should receive this salary. We feel that because of the quality of the man, this is not unreasonable.

Additional justification from Mr. Quinlan of the U. S. Geological Survey is attached.

A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region II

Enclosures
cc: USGS

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

AMENDMENT NO. 4 JAN 21 8 11 PM '52

It is agreed this 20th day of December 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Key-Durand, a limited partnership, 413 Montana Building, Missoula, Montana

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30 of June 28 1951 between the parties hereto be modified and amended as described in Exhibit "F", attached hereto, which, with any maps or drawings attached therto, is made a part of this aggrement. The effective date of this amendment shall be June 28 1951.

This amendment is made by authority granted the Executive Office, DMA Field Team, Region II in Order No. 2653 by the Acting Secretary of the Interior.

This amendment shall not be constued to increase the estimated total cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay, under the provisions of Article 13 of the contract form.

Executed in sextuplicate the day and year first above written.

KEY-DURAND
(Operator)

By Roy W. Key

The United States of America

By A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region II

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.

JAN 21 8 11 PM '52

KEY-DURAND
Exploration Project Contract I-DMA-E30

Amendment No. 4

EXHIBIT "F"

Changes and modifications

1. In Exhibit "A", Description of the work, delete:

Item 2c.	- 320 feet timbering of underground workings @ $6/ft.	$1,920.
Item 3	- 165 hours bulldozing for surface exploration of the property @ $12/hr.	1,980.
Item 4	- 1000 feet diamond core drilling from underground stations for exploring the main structure ahead of crosscutting and drifting @ $8/ft.	8,000.

2. In Exhibit "A", Description of the work, add:

Item 8	- 150 feet timbering of underground workings @ $6/ft.	$ 900.
Item 9	- 10 hours for surface exploration of property @ $12/hr.	120.
Item 10	- 700 feet diamond core drilling from underground stations @ $8/ft.	5,600.
Item 11	- Buildings and fixtures	3,980.
Item 12	- Purchase 4 mine cars @ $325/ea.	1,300.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

JAN 21 8 11 PM '52

KEY-DURAND
Contract I-DMA-E30

Amendment No. 4

EXHIBIT "F"

3. In Exhibit "B", Detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by Operator, add:

Item 5	- 18'x40' mine building	$1,380.
Item 6	- Boarding house building to accommodate 10 men and cook	2,500.
Item 7	- Misc. mine fixtures	100.

4. In Exhibit "D", Schedule of labor, add:

1 Superintendent and engineer	$ 500/mo.

Labor may be paid at shift rates or unit contracts at the discretion of the Operator but rates are not to exceed standards for like work in this district.

DMA Docket No. 946X
Key and Durand
Granite County, Montana
Contract No. I-DMA-E30

JUSTIFICATION FOR AMENDMENT NO.3

Amendment No. 3 to Contract No. I-DMA-E30 allows for construction of 1-5/8 miles of access road from U. S. Forest Service road up Douglas Creek to the Wasa mine. This amendment also makes the Operator responsible for snow removal from the access road, and deletes $3,000 from the contract for this purpose.

This amendment was made because the location of the original access road was such that it would be difficult to keep the road open because of drifting snow. The possibility existed that there would be times when it would be next to impossible to keep the road open. By relocation of the access road, the problem of drifting snow was removed and access to the property insured. The cost to the Government for the new access road was no more than the estimated cost of keeping the original access road cleared of snow.

GAO

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

OCT 22 3 51 PM '51

AMENDMENT NO. 3

It is agreed this 18th day of October 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Key and Durand, a limited partnership, 413 Montana Building, Missoula, Montana

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30 of June 28 1951 between the parties hereto be modified and amended as described in Exhibit "F", attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be October 18 1951.

This amendment is made by authority granted the Executive Officer, DMA Field Team, Region II in Order No. 2653 by the Acting Secretary of the Interior.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay, under the provisions of Article 13 of the contract form.

Executed in sextuplicate the day and year first above written.

KEY AND DURAND
(Operator)

By Ray W. Key

Gen. Serv. Sec.
Change Order
Noted
Reviewed

The United States of America

By A. E. Weissenborn

Executive Officer,
DMA Field Team, Region II

KEY AND DURAND

Contract I-DMA-E30

Amendment No. 3

EXHIBIT "F"

Changes and modifications

1. In Exhibit "A" under description of project and work to be performed, delete Item No. 7:

   "250 hours bulldozing for road cleaning at $12.00/hr. $3,000."

2. In Exhibit "A" under description of project and work to be performed, add:

   "Access road construction in the amount of 1-5/8 miles at a total cost of not to exceed $3,000. This road construction, entirely on Government lands and covered by a construction permit granted by the U. S. Forest Service, is to provide a connecting link between the Wasa mine yard and the U. S. Forest Service road up Douglas Creek from U. S. Highway 10A.

   "The Operator agrees herewith to assume all responsibility for snow removal over the Douglas Creek access road for the duration of the exploration project contract."

GAO

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.

AMENDMENT NO. 2

I-DMA-E 30

OCT 22 3 51 PM '51

It is agreed this 12th day of October 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Key and Durand, a limited partnership, 413 Montana Building, Missoula, Montana

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30 of June 28 1951 between the parties hereto be modified and amended as described in Exhibit "F", attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be June 28 1951.

This amendment is made by authority granted the Executive Officer, DMA Field Team, Region II in Order No. 2653 by the Acting Secretary of the Interior.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay, under the provisions of Article 13 of the contract form.

Executed in sextuplicate the day and year first above written.

KEY AND DURAND
(Operator)

By Roy W. Key

The United States of America

By A. E. Weinmann
Executive Officer, DMA
Field Team, Region II

Cont. Serv Sec.
Change Order
Noted 2/12
Reviewed

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CONTRACT SERV. SEC.
G. A. O.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D. C.

OCT 22 3 51 PM '51

KEY AND DURAND

Contract I-DMA-E30

Amendment No. 2

EXHIBIT "F"

Changes and modifications

1. In Exhibit "C", page 1, under "Rental value of equipment owned by Operator" delete Item No. 3:

   "Diesel driven air compressor .....$150.00 per mo.

2. In Exhibit "C", page 2, under "Equipment to be Rented" add under

"Item	Description	Rental Value"
"11	1-315 cfm air compressor (portable)	$414.00"

AMENDMENT NO. 1

It is agreed this 19th day of September 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration and Key and Durand - a Montana mining partnership

each acting in consideration of the agreement of the other to the terms hereinafter set forth, that the Exploration Project Contract I-DMA-E30, 946X of June 28 1951 between the parties hereto be modified and amended as described in Exhibit "F", attached hereto, which, with any maps or drawings attached thereto, is made a part of this agreement. The effective date of this amendment shall be June 28 1951.

This amendment is made by authority granted the Executive Officer, DMA Field Team, Region II in Order No. 2653 by the Acting Secretary of the Interior.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be obligated to pay, or the percentage of costs which the Government may be obligated to pay, under the provisions of Article 13 of the contract form.

Executed in sextuplicate the day and year first above written.

Key and Durand
(Operator)

By Roy W Key

The United States of America

By A. E. Weissenborn
Exec. Officer DMA: Field Team Region II

M E Nelson
Member, Field Team, Region II

OCT 8 1951

Contracts Mgr. Sec.
Contract Order
D.E.
n.c.
10/19/51

Key and Durand

Contract 1-DMA-E30

EXHIBIT "F"

Changes and Modifications

1. On Exhibit "D" of the Exploration Project Contract under Schedule of Labor add

Classification	Salary per month
Bookkeeper	$100.00

MF-200
(April 1951)

Docket No. DMA 946 X
Commodity Lead-zinc
I-DMA-E30

Index
No. Card
Card
Reviewed 12/8/57

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

It is agreed this 28 day of June, 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Key and Durand, a limited partnership, 413 Montana Building, Missoula, Montana

hereinafter called the "Operator," as follows:

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

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Montana, County of Granite described as follows: [3] 19 quartz lode mining claims, mill sites, and tunnel sites, all in the S. 1/2 of section 27 and N. 1/2 of section 34, T. 9 N., R. 12 W., M.P.M.

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

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

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

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

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

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

6. *Operating equipment.* Attached hereto, marked "Exhibit 'C'," is a detailed list of operating equipment divided into categories of items to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or rental value, as the case may be, annexed to each. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

Supplement No. 2, dated 10-12-51 Attached 11-17-51

Supplement No. 3, dated 10-16-51 Attached 11-17-51

JUL 17 1951
RECEIVED
CONTRACT SERVICE
G.A.O.

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

Supplement No. Amend't 1, dated 6-28-51 Attached 10-15-51

—64466-I

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

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

9. *Rehabilitation and repairs.* Attached hereto, marked "Exhibit 'E'," is a detailed schedule of existing facilities, buildings, installations, and fixtures, with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition, which cost shall be allowed as a cost of the project.

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

11. *Participation by the Government.* At the end of the first full calendar month after the Operator has commenced work under the project, and at the end of each succeeding calendar month, the Operator shall submit to the Government a voucher for payment with a detailed statement of work done and allowable costs (as defined in Article 10 of this agreement) incurred, in a form and with supporting data acceptable to the Government. After approving the voucher, the Government shall pay to the Operator 50 percent of the sum of such costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $ 33,250.00, which is 50 percent of the agreed estimated total cost of this project, $ 66,500.00.

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

13. *Progress reports.* The Operator shall provide the Government with monthly reports of progress in form and content satisfactory to the Government, and upon the completion of the project or termination of the contract shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

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

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

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

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

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

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

Executed in ~~triplicate~~ sextuplet the day and year first above written.

Key & Durand-A Montana Mining Partnership
(Operator)

By Roy W. Key O. J. Durand
Roy W. Key O. J. Durand

THE UNITED STATES OF AMERICA

By James Boyd
Administrator, Defense Minerals Administration

U. S. GOVERNMENT PRINTING OFFICE 16—64066-1

Docket No. DMA 946
Commodity: Lead-zinc

EXHIBIT "A"

Description of the project and the work to be performed on Key and Durand property, located in Granite County, Montana

Item	Description of Work	Amount

The purpose of the project is to explore the Wasa-Shamrock mineralized zone and the Shamrock ore body at depth. This latter body, discovered during Bureau of Mines project 15-197, is about 250 feet south of the Wasa ore body. It was further explored by the Operator in the spring of 1951. The new exposures compare favorably with the Wasa outcrop which formerly produced about 80,000 tons of zinc ore above the lower Wasa level. The Shamrock ore body is expected, by analogy, to contain an equal amount of zinc ore. Details of the initial exploration are presented on figs. 1 and 2, appended.

1	Cleaning up the Lower Wasa adit (including putting down track, air lines and hanging vent tube), a total distance of 900 feet	$ 3,000
2a	800 feet drifting on the main structure to intersect the Shamrock ore body and explore the area south of it @ $26.00	20,800
2b	800 feet crosscutting and drifting for exploration of the Shamrock and other possible ore bodies @ $26.00	20,800
2c	320 feet timbering of underground workings @ $ 6.00	1,920
3	165 hours bulldozing for surface exploration of the property @ $12.00	1,980
4	1,000 feet diamond core drilling from underground stations for exploring the main structure ahead of crosscutting and drifting @ $ 8.00	8,000
5	Sampling (underground workings, trenches, sludge and core from diamond drilling) and assaying	1,000
6	Supervision, engineering and ~~general overhead~~	6,000
7	250 hours bulldozing for road cleaning @ $12.00	3,000
	Total	$66,500

Docket No. DMA 946
Commodity: lead-zinc

EXHIBIT "B"

Detailed list of additional facilities, buildings, and fixtures to be purchased, installed or erected by Operator.

Item No.	Description	Amount
	Rail track and air lines for the Lower Wasa adit	
1	500 feet used mine rail 20# and 16#	$ 400.00
2	600 feet new mine rail 16#	700.00
3	Rail spikes, plates, bolts and nuts	200.00
4	1,200 feet new galvanized pipe, 2", and couplings	600.00
	Total	$1,900.00

Docket No. DMA 946
Commodity: Lead-zinc

EXHIBIT "C"

Detailed list of operating equipment to be rented, purchased, or furnished by the operator with the allowable rental, purchase price, or rental value.

Item	Description	Age Condition	Cost	Rental Value*
	Rental value of equipment owned by operator			
1	Model D-6 caterpillar tractor, 74" gauge, serial No. 9U-6991, equipped with trunnion group, crankcase guard, upper engine guard, sheave support and radiator guard, track roller guard, front pull hook, equalizer spring, 18" H.T. gr. tr. assm. No. 25 caterpillar cable control, arrangement 4F-3412, serial No. 9-D-18237. No. 6A caterpillar cable controlled bulldozer, arrangement 5F-3193, serial No. 16-C-5252	new	$13,237.55	$8.00/hr.**
2	Longyear Wolverine diamond core drill, electrically driven, complete with 600 feet ax. rods and all necessary drilling equipment except bits. Can be used either above or below ground. . . .	good	3,585.77	$1.50/ft.
3	Diesel driven air compressor, D-311 caterpillar engine, serial No. 7-S-5226, V-belt connected Gardner-Denver 2 stage 145 cfm compressor, type WBR-4010, serial No. 147091, complete with 30" x 84" Gardner-Denver air receiver. All units on angle iron frame mounted on three 8"x8" skids	good	2,948.06	$150.00/mo.
4	3/4 ton 4 speed Chevrolet pick-up truck. Complete with snow-mud grip tires and trailer hitch	new	1,782.48	$ 50.00/mo.
5	Mine cars - 3	good	300.00	$ 30.00/mo.
6	Coppus TM-6 vent air blower complete with manual starter and tubing	good	612.17	$ 30.00/mo.
7	Ingersol-Rand DA-35 drifter, serial number 516799, DFC 587, complete with column and safety clamp and arm	good	317.25	$ 30.00/mo.
8	Ingersol-Rand stoper, Model R-48, serial No. 513600	good	178.85	$ 20.00/mo.

EXHIBIT "C" - continued

Item	Description	Age condition	Cost	Rental Value*
	Equipment to be rented			
9	Eimco 12 B mucking machine			$250.00/mo.
10	UCD-9 International, 20 Kw, 3 phase, 220-440 volt, Diesel electric set			225.00/mo.

*Includes repairs and maintenance.

**The total amount of rental value for 12 months is $3,320.00; this is equal to the normal depreciation cost.

Docket No. DMA 946
Commodity: Lead-zinc

EXHIBIT "D"

SCHEDULE OF LABOR

Quantity	Name of Position	Wage Rate
	Wage rates patterned after current Butte, Montana, scale.	
1	Foreman	$ 400.00 per month
6	Miner	$ 1.54 per hour
1	Bulldozer man	$ 2.00 per hour
1	Core drill operator	$ 2.00 per hour
1	Core drill helper	$ 1.47½ per hour
1	Cook	$ 1.25 per hour

Above rates are for a 40-hour week with time and half paid for 8 hours on a 48-hour week. The following wage differentials are paid for afternoon, night, and graveyard shift labor:

Afternoon shift	4¢/hr.
Night shift	6¢/hr.
Graveyard shift	8¢/hr.

Miners to be paid on a footage contract basis when possible.

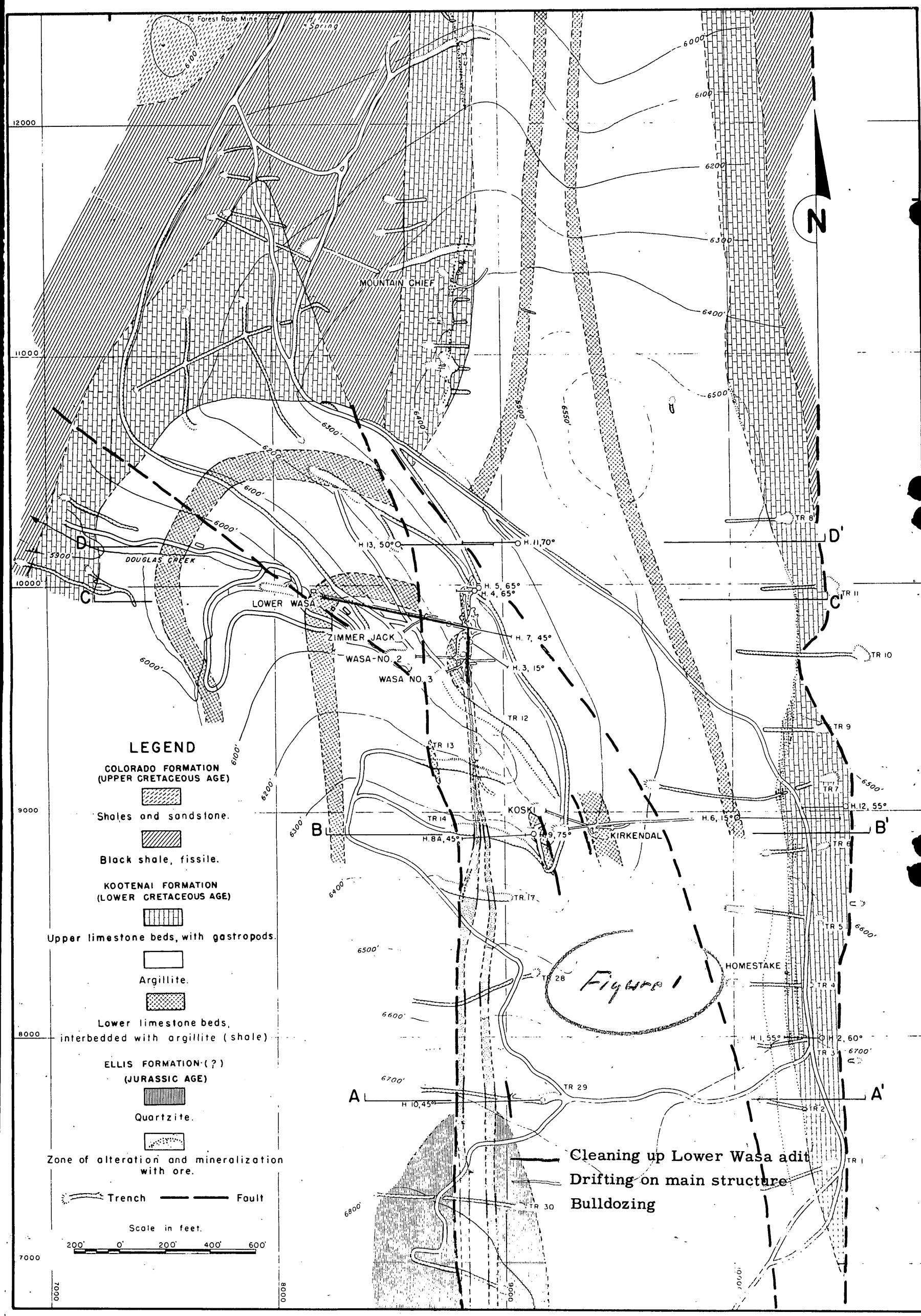
Docket No. DM. 946
Commodity: Lead-zinc

EXHIBIT "E"

Detailed schedule of existing facilities, buildings, installations and fixtures on Durand property, Granite County, Montana.

Item	Description	Quantity	Remarks
1	Cabin near Lower Wasa adit	1	Repaired in April 1951
2	Compressor shed near Lower Wasa adit	1	Usable without repairs
3	Blacksmith shed, tool shed, etc.	3	Fair condition, usable

The Lower Wasa adit is equipped by ore bins and trestle.



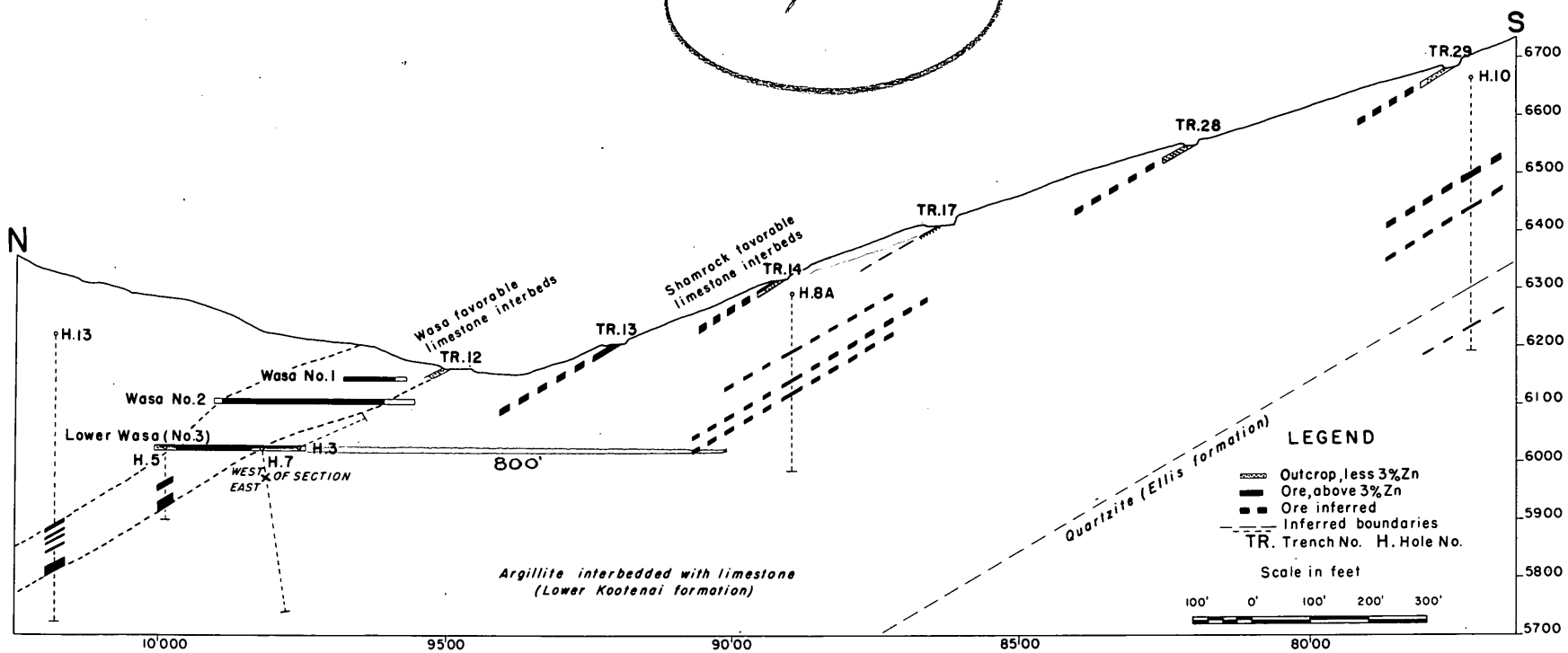
~~Figure 4.~~ — Topographical and geological map of the Wasa area.

Cleaning up Lower Wasa adit

Drifting on the main structure

Bulldozing

Figure 2



~~Figure 5a~~ — Longitudinal section of Wasa-Shamrock area.

MILLER MACHINERY COMPANY
Highway 93 South
P. O. Box 1496 Phone 2207
Missoula, Montana

RENTAL AGREEMENT

THE MILLER MACHINERY COMPANY, hereinafter designated as LESSOR, rents and leases to KEY-DURAND MINING CO. hereinafter described as LESSEE, the following described personal property, to be used in Granite County, State of Montana.

1 - 315 Cu. Ft. Worthington, 4-Wheel Trailor Mtd.
Compressor, #186-122

Rental to start July 26, 1951

Transportation charges to be paid both ways by LESSEE.

LESSEE agrees to pay LESSOR as rental for the use of the above described property, the sum of $ 414.00 per month payable monthly in advance.

Said rent is to begin on the day the said property is delivered to the LESSEE, and is to end on the day that said property is returned by LESSEE to LESSOR, at Missoula, Montana.

Said property is hereby leased for a term of indefinite and if LESSEE retains said property after the expiration of said terms, such retention shall be construed as a continuance of this lease, at the same rental, and under the same terms, until said property is so returned to the LESSOR, at the place above specified. At any time after the expiration of said original term, upon THREE (3) days written notice to be given by LESSOR to LESSEE, LESSEE agrees to return said property to LESSOR at said place.

It is expressly agreed and understood between the LESSOR and the LESSEE that all terms and conditions set forth on the reverse side of the agreement form a part of, and are hereby made part of, this contract.

The full agreement between LESSOR and LESSEE is contained herein, and time is made of the essence of this Agreement.

IN WITNESS WHEREOF the LESSOR and LESSEE have hereunto set their hands this 25th day of July, 1951 at Missoula, Montana

KEY-DURAND MINING CO.

By _____
Lessee

MILLER MACHINERY COMPANY

By /s/ D. V. Scott
Lessor

This agreement is not to be construed as a sale contract, or a conditional sale contract. The intent of this agreement is that LESSOR is hereby renting, and/or leasing said property only. It is understood and agreed that said property shall remain personal property at all times, notwithstanding the manner of its annexation to realty.

In the event that LESSEE fails to perform anything herein required and/or fails to pay any sum when the same shall be due, and/or if an attachment is levied against said property, and/or attempted, by a creditor of LESSEE, the LESSOR may, at its option, and without notice, enter the premises in which said personal property, or any part thereof, is located, and without hindrance directly or indirectly on the part of the LESSEE, take possession of said property, and the LESSEE hereby agrees to pay all expenses, including a reasonable fee for Attorney, that may be incurred by LESSOR in enforcing this agreement, and/or in collecting the rent provided herein, and/or in repossessing property.

The LESSEE hereby assumes all risks of fire or other casualty, and agrees to indemnify LESSOR for all damage or loss to said property from fire or other casualty.

LESSEE agrees to keep said property in the same condition as when received. The LESSEE agrees to keep said property in repair, at LESSEE'S expense. The receipt of said property, in good order and repair, is hereby acknowledged by LESSEE. It is expressly understood and agreed that LESSOR shall not be liable for damages of any kind whatsoever, whether to person and/or property, and/or for loss of time, and/or any other loss, arising from the use of, or in any way connected with, said property or any part thereof, from whatever cause arising LESSEE agrees to hold LESSOR free from all such damages. The LESSEE agrees to pay or reimburse the LESSOR, on return of the said property to LESSOR, for all charges incidental to all breakages, shortages, or damage, other than ordinary wear, to said property, during the term hereof.

LESSEE agrees to keep said property, during the full period LESSEE is renting same from LESSOR, in LESSEE'S custody and at the place specified herein, and not to remove and/or sublease or re-rent same without the LESSOR'S consent in writing first obtained.

LESSEE further agrees to use said property for only one shift of eight (8) hours per day of twenty-four (24) hours. If LESSEE desires to use said property for more than eight (8) hours in any one twenty-four hour day, then such additional time is to be paid for by LESSEE on a pro-rata basis at the same rate as herein provided.

It is further agreed that the LESSEE may at any time during the life of this agreement and while he is not in default hereunder have the option to purchase all the property described in this rental agreement for the sum of $7200.00 (seven-thousand two-hundred dollars), provided LESSEE gives the LESSOR written notice of his intention to exercise this option. If LESSEE so purchases said property, he shall be given credit upon the purchase price for the full amount of the initial rental payment, and for 80% of each subsequent month's rental theretofore paid under this agreement.

MILLER MACHINERY COMPANY
Highway 93 South
P. O. Box 1496 Phone 2207
Missoula, Montana

RENTAL AGREEMENT

THE MILLER MACHINERY COMPANY, hereinafter designated as LESSOR, rents and leases to KEY-DURAND MINING CO. hereinafter described as LESSEE, the following described personal property, to be used in Granite County, State of Montana.

1 - Diesel Generator Set, Radiator Cooled, 20 KW, 3 Phase, 220 or 440 Volt, with International UD9 Diesel #UDCB11376-21, Palmer Self-Regulating Generator, #D52807, with belted exciter.

Rental to start July 26, 1951

Transportation charges to be paid both ways by LESSEE.

LESSEE agrees to pay LESSOR as rental for the use of the above described property, the sum of $ 225.00 per month payable monthly in advance.

Said rent is to begin on the day the said property is delivered to the LESSEE, and is to end on the day that said property is returned by LESSEE to LESSOR, at Missoula, Montana.

Said property is hereby leased for a term of indefinite and if LESSEE retains said property after the expiration of said terms, such retention shall be construed as a continuance of this lease, at the same rental, and under the same terms, until said property is so returned to the LESSOR, at the place above specified. At any time after the expiration of said original term, upon THREE (3) days written notice to be given by LESSOR to LESSEE, LESSEE agrees to return said property to LESSOR at said place.

It is expressly agreed and understood between the LESSOR and the LESSEE that all terms and conditions set forth on the reverse side of the agreement form a part of, and are hereby made part of, this contract.

The full agreement between LESSOR and LESSEE is contained herein, and time is made of the essence of this Agreement.

IN WITNESS WHEREOF the LESSOR and LESSEE have hereunto set their hands this 25th day of July, 1951 at Missoula, Montana

KEY-DURAND MINING CO.

By _____
Lessee

MILLER MACHINERY COMPANY

By /s/ D. V. Scott
Lessor

This agreement is not to be construed as a sale contract, or a conditional sale contract. The intent of this agreement is that LESSOR is hereby renting, and/or leasing said property only. It is understood and agreed that said property shall remain personal property at all times, notwithstanding the manner of its annexation to realty.

In the event that LESSEE fails to perform anything herein required and/or fails to pay any sum when the same shall be due, and/or if an attachment is levied against said property, and/or attempted, by a creditor of LESSEE, the LESSOR may, at its option, and without notice, enter the premises in which said personal property, or any part thereof, is located, and without hindrance directly or indirectly on the part of the LESSEE, take possession of said property, and the LESSEE hereby agrees to pay all expenses, including a reasonable fee for Attorney, that may be incurred by LESSOR in enforcing this agreement, and/or in collecting the rent provided herein, and/or in repossessing property.

The LESSEE hereby assumes all risks of fire or other casualty, and agrees to indemnify LESSOR for all damage or loss to said property from fire or other casualty.

LESSEE agrees to keep said property in the same condition as when received. The LESSEE agrees to keep said property in repair, at LESSEE'S expense. The receipt of said property, in good order and repair, is hereby acknowledged by LESSEE. It is expressly understood and agreed that LESSOR shall not be liable for damages of any kind whatsoever, whether to person and/or property, and/or for loss of time, and/or any other loss, arising from the use of, or in any way connected with, said property or any part thereof, from whatever cause arising LESSEE agrees to hold LESSORfree from all such damages. The LESSEE agrees to pay or reimburse the LESSOR, on return of the said property to LESSOR, for all charges incidental to all breakages, shortages, or damage, other than ordinary wear, to said property, during the term hereof.

LESSEE agrees to keep said property, during the full period LESSEE is renting same from LESSOR, in LESSEE'S custody and at the place specified herein, and not to remove and/or sublease or re-rent same without the LESSOR'S consent in writing first obtained.

LESSEE further agrees to use said property for only one shift of eight (8) hours per day of twenty-four (24) hours. If LESSEE desires to use said property for more than eight (8) hours in any one twenty-four hour day, then such additional time is to be paid for by LESSEE on a pro-rata basis at the same rate as herein provided.

It is further agreed that the LESSEE may at any time during the life of this agreement and while he is not in default hereunder have the option to purchase all the property described in this rental agreement for the sum of $2250.00 (two-thousand two-hundred and fifty dollars), provided LESSEE gives the LESSOR written notice of his intention to exercise this option. If LESSEE so purchases said property, he shall be given credit upon the purchase price for the full amount of the initial rental payment, and for 80% of each subsequent month's rental theretofore paid under this agreement.

MILLER MACHINERY COMPANY
Highway 93 South
P. O. Box 1496 Phone 2207
Missoula, Montana

RENTAL AGREEMENT

THE MILLER MACHINERY COMPANY, hereinafter designated as LESSOR, rents and leases to Key-Durand Mining Co. hereinafter described as LESSEE, the following described personal property, to be used in Granite County, State of Montana.

1 - Eimco 12B Mine Car Loader, 24" Gauge, Serial #6044

Rental to start July 23, 1951

Transportation charges to be paid both ways by LESSEE.

LESSEE agrees to pay LESSOR as rental for the use of the above described property, the sum of $ 250.00 per month payable monthly in advance.

Said rent is to begin on the day the said property is delivered to the LESSEE, and is to end on the day that said property is returned by LESSEE to LESSOR, at Missoula, Montana.

Said property is hereby leased for a term of indefinite and if LESSEE retains said property after the expiration of said terms, such retention shall be construed as a continuance of this lease, at the same rental, and under the same terms, until said property is so returned to the LESSOR, at the place above specified. At any time after the expiration of said original term, upon THREE (3) days written notice to be given by LESSOR to LESSEE, LESSEE agrees to return said property to LESSOR at said place.

It is expressly agreed and understood between the LESSOR and the LESSEE that all terms and conditions set forth on the reverse side of the agreement form a part of, and are hereby made part of, this contract.

The full agreement between LESSOR and LESSEE is contained herein, and time is made of the essence of this Agreement.

IN WITNESS WHEREOF the LESSOR and LESSEE have hereunto set their hands this 24th day of July, 1951 at Missoula, Montana

KEY-DURAND MINING CO.

By _____
Lessee

MILLER MACHINERY COMPANY

By /s/ D. V. Scott
Lessor

This agreement is not to be construed as a sale contract, or a conditional sale contract. The intent of this agreement is that LESSOR is hereby renting, and/or leasing said property only. It is understood and agreed that said property shall remain personal property at all times, notwithstanding the manner of its annexation to realty.

In the event that LESSEE fails to perform anything herein required and/or fails to pay any sum when the same shall be due, and/or if an attachment is levied against said property, and/or attempted, by a creditor of LESSEE, the LESSOR may, at its option, and without notice, enter the premises in which said personal property, or any part thereof, is located, and without hindrance directly or indirectly on the part of the LESSEE, take possession of said property, and the LESSEE hereby agrees to pay all expenses, including a reasonable fee for Attorney, that may be incurred by LESSOR in enforcing this agreement, and/or in collecting the rent provided herein, and/or in repossessing property.

The LESSEE hereby assumes all risks of fire or other casualty, and agrees to indemnify LESSOR for all damage or loss to said property from fire or other casualty.

LESSEE agrees to keep said property in the same condition as when received. The LESSEE agrees to keep said property in repair, at LESSEE'S expense. The receipt of said property, in good order and repair, is hereby acknowledged by LESSEE. It is expressly understood and agreed that LESSOR shall not be liable for damages of any kind whatsoever, whether to person and/or property, and/or for loss of time, and/or any other loss, arising from the use of, or in any way connected with, said property or any part thereof, from whatever cause arising LESSEE agrees to hold LESSORfree from all such damages. The LESSEE agrees to pay or reimburse the LESSOR, on return of the said property to LESSOR, for all charges incidental to all breakages, shortages, or damage, other than ordinary wear, to said property, during the term hereof.

LESSEE agrees to keep said property, during the full period LESSEE is renting same from LESSOR, in LESSEE'S custody and at the place specified herein, and not to remove and/or sublease or re-rent same without the LESSOR'S consent in writing first obtained.

LESSEE further agrees to use said property for only one shift of eight (8) hours per day of twenty-four (24) hours. If LESSEE desires to use said property for more than eight (8) hours in any one twenty-four hour day, then such additional time is to be paid for by LESSEE on a pro-rata basis at the same rate as herein provided.

It is further agreed that the LESSEE may at any time during the life of this agreement and while he is not in default hereunder have the option to purchase all the property described in this rental agreement for the sum of $3073.76 (three-thousand seventy-three dollars and seventy-six cents) provided LESSEE gives the LESSOR written notice of his intention to exercise this option. If LESSEE so purchases said property, he shall be given credit upon the purchase price for the full amount of the initial rental payment, and for 80% of each subsequent month's rental theretofore paid under this agreement.

E OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

May 12, 1952

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

Re: Contract Idm-E30
Western Montana Exploration &
Div. Co.

Dear Mr. Johnson:

Enclosed are three copies of a lease agreement between the subject company and the Leonard Estate pertaining to the Wasa ground. This lease clarifies the right of the Operator to use the Wasa adit.

Additional copies of this lease have been sent to the Fiscal Officer and retained by the Field Team, Region II.

Sincerely yours,

K H Gray
Kathryn Gray
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM, Albany

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 1 8 1952

LEASE AND OPTION

THIS AGREEMENT, made and entered into this 31st day of March, 1952, by and between ED C. HUGHES, ANNA RYAN, CARL D. F. JENSEN, MARK A. JENSEN, WILLIAM S. JENSEN, AND GUADALUPE LEONARD and EDWARD F. RYAN, as Executors of the Last Will and Testament of James L. Leonard, Deceased, Lessors, and WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY, a Corporation, Lessee, WITNESSETH:

That for and in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00), lawful money of the United States, in hand paid, the receipt of which is hereby acknowledged, and other good and valuable consideration, the Lessors do hereby lease, let and demise unto the Lessee the following described mining claims located in the South Half (S½) of Section Twenty-seven (27) and the North Half (N½) of Section Thirty-four (34), Township Nine (9) North, Range Twelve (12) West, Granite County, Montana, to-wit:

JACK PINE
HOPE
HOPE FRACTION
HORN SILVER
HOPE NO. 2
MOUNTAIN CHIEF NO. 2
OUTCROP EXTENSION

The term of this lease shall be five (5) years from and after the 1st day of January, 1952. The Lessee is hereby given an option to renew this lease for an additional period of five (5) years, by giving to the Lessor written notice of its election thereof at any time during the last three months of the primary five year term hereof, if this lease is then in full force and effect.

The Lessee agrees to pay as rent for the leased premises a royalty of ten per cent (10%) of the net smelter returns of ores extracted from the above described property, and shipped to a smelter or mint either in the form of ores, concentrates or bullion.

STATE OF MONTANA
County of Missoula

Roy W. Kay being first duly sworn on oath deposes and says: That he has read the original of the attached Lease & Option executed between Ed C. Hughes and Associates and the Western Montana Exploration & Development Company and that this jurat is attached to a true and correct copy of said Lease & Option entered into on 3/March, 1952.

Roy W. Kay

ACKNOWLEDGMENT OF NOTARY

Subscribed and sworn before me this 1st day of May, 1952.

Shirley Hossack

NOTARY PUBLIC FOR THE STATE OF MONTANA
RESIDING AT MISSOULA, MONTANA
MY COMMISSION EXPIRES OCT. 1, 1954

By the term "Net smelter returns" is meant the amount realized by the Lessee from the smelter or mint for ores, concentrates or bullion; and it is agreed that from the gross value of any such ores, concentrates or bullion, the smelter or mint may deduct smelting or mint charges and the costs of shipping the ores, concentrates or bullion from the mine or mill to the smelter or mint. The Smelter or mint shall be instructed to deliver any royalty payble to the Lessors directly to an agent appointed in writing by the Lessors.

The royalties paid shall total at least $1000.00 during each of the first three years of this lease, $2,500.00 during each of the next two years, and $3,500.00 during each year of the renewal period thereof; and the amount of any deficiency in such minimum annual royalties shall be paid by Lessee direct to the Lessors within such period.

The Lessee may at any time prior to the commencement of a new calendar year, voluntarily forfeit this lease and thereby relieve itself of liability for the payment of the said minimum royalty as to all years in the future by delivering up possession of said leased property and giving to the Lessors written notice thereof.

The Lessee shall do all work on the premises in a good and minerlike fashion, shall do no work which would have the effect of destroying or impairing the existing tunnels in the said claims, and shall ship to a reputable smelter or to a United States mint or assay office all ores, concentrates and bullion therefrom.

The Lessee shall keep the ores and concentrates from the leased premises separate from ores and concentrates recovered by the Lessee on other mining operations.

The Lessee shall pay all bills for labor or materials used on the leased claims, and shall protect the property from all liens of any kind. The Lessee shall likewise cause the men employed on the

leased claims to be fully protected by Workmen's Compensation, and shall save the Lessors harmless from any claim or claims for personal injury or death arising out of the operation of the leased premises.

The Lessors shall at all times have the right to inspect the mining claims leased herein, and the operations of the Lessee thereon, and shall likewise have the right to inspect the books and records of the Lessee showing the operations on the said leased mining claims.

In further consideration hereof it is agreed that whereas the Lessee is the claimant of the STAR, LAST CHANCE, MORNING AND MORNING BIRD LODE MINING CLAIMS, which conflict with the said JACK PINE, HOPE, HOPE FRACTION, HORN SILVER AND HOPE NO. 2 LODE MINING CLAIMS, the Lessee hereby agrees that the said JACK PINE, HOPE, HOPE FRACTION, HORN SILVER and HOPE NO. 2 LODE MINING CLAIMS of the Lessors are valid and subsisting lode mining claims in good standing under the laws of the United States of America and of the State of Montana, that the Lessors may at their option proceed to patent the same, that no adverse claim or contest will be instituted against the same on behalf of the Lessee, and that the said STAR, LAST CHANCE, MORNING and MORNING BIRD LODE MINING CLAIMS of the Lessee are hereby agreed to be valid only in so far as they do not conflict with the said mining claims of the Lessors.

IT IS FURTHER UNDERSTOOD by the parties hereto that the Lessee herein is the owner of the following described mining claims:

SHAMROCK EXTENSION
SHAMROCK
ELK
MOUNTAIN VIEW
HOMESTAKE
HOMESTAKE EXTENSION,

all of which are located in the vicinity of the claims leased hereunder. It is specifically agreed that the parties hereto do not by

this lease purport to determine the extra-lateral rights of the Lessee under the mining claims above named. In other words, if under the law of Montana, the Lessee had, by reason of the existence of an apex of a vein or veins on the mining claims of the Lessee a right to ores lying under the surface boundaries of the leased claims, the acceptance by the Lessee of this lease does not waive the Lessee's rights in that respect, or prevent the Lessee from urging in any manner said rights. It is not the intention of this lease to alter the said extra-lateral rights as they now exist under the law of Montana, and the Lessee's extra-lateral rights, if any, shall continue to exist in the same manner as if this lease had not been executed.

The parties hereby agree to submit to arbitration any dispute or disputes, as to the ownership or ores arising by reason of boundary locations or claims of extra-lateral rights. In the event of such a dispute each party shall appoint one arbitrator, and the two so chosen shall appoint a third. The arbitrators shall be qualified mining engineers. Such arbitrators shall have the right to inspect the premises and take evidence. The arbitrators shall submit their report in writing, and the report of the arbitrators shall be binding on all parties. An offer to arbitrate shall be a condition precedent to the commencement of an action by either party hereto on account of any matter herein made the subject of arbitration.

The Lessee shall not sublease any part of the said properties nor assign, transfer or convey this lease and option or any part or interest therein or thereunder without the written consent of the Lessors.

The Lessors hereby give and grant unto the Lessee an option to purchase the above described mining claims for the total sum of One Hundred Forty Thousand Dollars ($140,000.00). There shall be credited

upon the said option price all sums paid as royalty hereunder including any amounts paid as deficiencies in minimum annual royalties. This option may be exercised at any time while this lease, or the renewal thereof, is in good standing and the Lessee is not in default in the terms hereof. The option shall be exercised by the Lessee tendering to the Lessors the said sum of $140,000.00, less any amounts theretofore paid as royalties, conditioned only upon the delivery by the Lessors of an abstract disclosing a merchantable title to the said mining claims, and a warranty deed for the same.

Upon the exercise of the said option of purchase, the Lessors shall furnish an abstract disclosing a merchantable title to the above described mining claims. The Lessee shall have a period of ten (10) days to examine said abstract. The Lessors hereby warrant their title to the said mining property and, in the event of a defect in or cloud upon their title shall if possible remedy the same within a reasonable time after Lessee's notice thereof.

It is further understood and agreed that time is of the essence hereof, and that if the Lessee or its assigns shall fail, neglect or refuse to pay the said royalty or any part thereof promptly when due, or to perform promptly any of the covenants of this lease required to be performed by it, the Lessors may by mailing a written notice addressed to Lessee at Philipsburg, Montana, notify Lessee of their election to terminate this lease and option for such defect, and unless within thirty days thereafter the Lessee shall remedy such default, notify Lessors thereof, and refrain from further default, this lease and option shall then become terminated and void.

Upon the termination of this lease in any way the Lessee shall have the right to remove from the premises within thirty days all tools, machinery and equipment placed thereon by it, other than

buildings and other structures, and all royalties and other payments theretofore paid shall be retained by the Lessor as rent for the said property.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed the day and year herein first above written.

(Signed) Ed C. Hughes
Ed C. Hughes

(Signed) Anna Ryan
Anna Ryan

(Signed) Carl D. F. Jensen
Carl D. F. Jensen

(Signed) Mark A. Jensen
Mark A. Jensen

(Signed) William S. Jensen
William S. Jensen

(Signed) Guadalupe Leonard
Guadalupe Leonard

ATTEST:

(Signed) Edward P. Ryan
Edward P. Ryan

(Signed) R. A. McGrew
Secretary

Seal

AS EXECUTORS OF THE LAST WILL AND TESTAMENT OF JAMES L. LEONARD, DECEASED

L E S S O R S

WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY,
a Corporation

By (Signed) Roy W. Key
President

L E S S E E

STATE OF MONTANA
County of Park

Ed C. Hughes being first duly sworn on oath deposes and says: That he is the person who executed the foregoing document; that he has read the same, knows the contents thereof and that the same is true of his own knowledge.

(Signed) Ed C. Hughes

ACKNOWLEDGMENT OF NOTARY

Subscribed and sworn to before me this 7th day of March, 1953.

(Signed) David Herner
Notary Public for the State of Montana
Residing at Livingston, Montana

Seal

My commission expires June 16, 1953

AGREEMENT

WHEREAS, C. J. Durand, party of the first part is the owner of certain unpatented mining premises known as the Durand Group situated in the Dunkleberg (unorganized) Mining District, Granite County, Montana, described as follows, to-wit:

Home Stake Extension	Quartz	Lode	Mining	Claim
Home Stake	"	"	"	"
Mountain View	"	"	"	"
Mid-Nite	"	"	"	"
Morning Bird	"	"	"	"
Morning	"	"	"	"
Bay Horse	"	"	"	"
Sunshine	"	"	"	"
Last Chance	"	"	"	"
Shamrock	"	"	"	"
Shamrock Extension	"	"	"	"
Elk	"	"	"	"
Douglas	"	"	"	"
Star	"	"	"	"

Mountain View Tunnel Site

Home Stake	Mill	Site
Home Stake Extension	"	"
Shamrock	"	"
Last Chance	"	"
Star	"	"

WHEREAS, in order to develop and properly operate said mining premises, it is necessary that the party of the first part raise funds for such development and operation, and;

WHEREAS, the party of the second part is desirous of acquiring an interest in and to said mining premises;

NOW THEREFORE, this agreement of Co-partnership made and entered into as of the 2nd day of January, 1951, by and between C. J. Durand of Hall, Montana, party of the first part and Roy W. Key of Missoula, Montana, party of the second part, WITNESSETH;

That we, agree to join and form, and do hereby join and form ourselves into a mining partnership for the purposes of exploring, developing, extracting, milling, smelting and selling ores, concentrates and metals from the above described mining

premises hereafter acquired by said partnership and to that end, we, each with the other, do here y mutually bind ourselves to the following covenants, agreement and terms:

1. The party of the first part agrees to convey to the party of the second part by proper instrument an undivided three-fourths interest in and to the mining premises above described, or any other mining premises acquired by him as a part of the Durand Dunkleberg Group. And by this agreement, the party of the first part hereby assigns to the party of the second part, an undivided three-fourths interest in and to the mining premises above described.

2. The Party of the second part agrees to contribute the use and bear the cost of operation, insofar as is necessary to the exploration, development, and operation of said mining premises, of the following described equipment:

1. MODEL D-6 CATERPILLAR TRACTOR, 74" GUAGE, SERIAL NO. 9U-6991 EQUIPPED WITH REVOLVING CROWN, CRANKCASE GUARD, UPPER ENGINE GUARD, SHAFT GUARD AND RADIATOR GUARD, TRACK ROLLER GUARD, FRONT PULL HOOK, EQUALIZER BARS, 18" H. T. OF. TP. AS R. TO. 2% CATERPILLAR CABLE CONTROL, ARRANGEMENT 4F-3412, SERIAL NO. 9-D-18237. NO 6A CATERPILLAR CABLE CONTROLLED WINCH, ARRANGEMENT 5F-3193, SERIAL NO. 16C-5252.

2. GOODYEAR WOLVERINE [illegible] DRILL, MECHANICALLY DRIVEN COMPLETE WITH 600 FEET AX [illegible] NECESSARY DRILLING EQUIPMENT INCLUDING [illegible]. MANUFACTURED IN LATTER PART OF 1948. USED IN ONLY 265' OF TOTAL. CAN BE USED EITHER ABOVE OR BELOW GROUND.

3. DIESEL DRIVEN AIR COMPRESSOR - D-311 CATERPILLAR ENGINE, SERIAL NO. 7-[illegible]-5226, V-BELT CONNECTED CARLIN R-DRIVER 2 STAGE 145 CFM COMPRESSOR, TYPE [illegible]-4,010, SERIAL NO. 147091, COMPLETE WITH 30" x 34" GARDNER-DENVER AIR RECEIVER. ALL UNITS ON ANGLE IRON FRAME MOUNTED ON 3 8" x 8" SILLS.

4. NEW 3/4 TON 4 [illegible] CHEVROLET PICK UP TRUCK. COMPLETE WITH SNOW-MUD GRIP TIRES AND TRAILER HITCH.

5. MINE CARS (3), 500 FEET USED MINE RAIL (20 & 16#), USED PIPE 400 FEET (3"-2½"). PIPE THREADER, SMALL TOOLS SUCH AS VISES, WRENCHES, HAMMERS, PICKS AND SHOVELS.

6. 7900# 16 POUND NEW MINE RAIL (CIF), 1 KEG MINE RAIL SPIKES, 82 PAIRS FISH PLATES (BARS) FOR ABOVE RAIL, 62# BOLTS & NUTS FOR BARS.

7. ONE CORPUS TM-6 VENT AIR BLOWER COMPLETE WITH MANUAL STARTER, 500 FEET NEW 16" TUBING, 40 FEET USED 16" TUBING, 150 FEET 12" TUBING WITH REDUCER.

8. 1200 FEET NEW GALVANIZED PIPE AND COUPLINGS - (600'-2", 300' -1½", AND 300'-1¼").

9. ONE INGERSOL-RAND DA-35 DRIFTER, SERIAL NUMBER, 516799, DPC 587, COMPLETE WITH COLUMN AND SAFETY CLAMP AND ARM (SURPLUS PROPERTY PURCHASE).

10. ONE INGERSOL-RAND STOPER, MODEL R-48, SERIAL NO. 513600 (SURPLUS PROPERTY PURCHASE).

The title to said above described mining equipment shall at all times be and remain solely in the party of the second part and not the partnership unless otherwise provided by written declaration or other instrument. It is understood that the party of the second part is contributing only the use of said equipment and not any title thereto, and may withdraw the use thereof and remove the same according to the provisions herein.

3. Except as otherwise herein provided, this partnership shall be governed by the laws of the State of Montana relating to mining partnerships.

IN WITNESS WHEREOF, the parties hereto have subscribed their names as of the day and year first herein above written.

O. J. Durand
Party of the First Part

Roy W. Key
Party of the Second Part

STATE OF MONTANA)
: SS.
COUNTY OF GRANITE)

On this 17th day of June, 1951, before me, J. Caudie Ether, a Notary Public for the State of Montana, personally appeared, O. J. Durand and Roy W. Key, known to me to be the persons whose names are subscribed to the within instrument and acknowledge to me that they are the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal on the day and year first above written.

/s/ Charles Stein

Notary Public for the State of Montana
Residing at Chinook, Montana
My Commission expires: [illegible]

INDEXED

COMPARED

COPIED

MAILED

Ray W. Kendall
413 Milwaukee Bldg
Missoula, Mont.

COMPARED

RECORDED

INDEXED

43406

COMPARED

RECORDED

INDEXED

STATE OF MONTANA,
County of Granite } SS.

I hereby certify that the within instrument was filed in my office on the 19th day of June A.D. 1951 at 10 minutes past 11 o'clock A.M. and is recorded on page 582 of book 10 of Miscellaneous records of Granite County, State of Montana.

Attest my hand: N. E. Mahoney
County Recorder

Fees $ 1.50 By E. Schenck
Deputy

This Indenture, *Made the* 18th *day of* June *in the year of our Lord one thousand nine hundred and* fifty-one *between* O. J. Durand and Grace Durand, husband and wife, of Hall, Montana, parties of the first part and Roy F. Key of Missoula, Montana,

*the part of the second part, WITNESSETH, that the said part*ies *of the first part, for and in consideration of the sum of* -One- *Dollars, of the United States of America, to* them *in hand paid by the said part*y *of the second part, the receipt whereof is hereby acknowledged, ha*v*e Granted, Bargained, Sold, Remised, Released and forever Quitclaimed, and these presents do grant, bargain, sell, remise, release and forever quitclaim, unto the said part*y *of the second part, and to* his *heirs, and assigns* an undivided three/fourths interest in and to unpatented quartz lode mining claims and millsites located in the Dunkleberg (unorganized) Mining District, Granite County, Montana, described as as follows:

MINING CLAIMS

MidNight as recorded in Book 22 of Locations, page 33, records of Granite County
~~MORNING BIRD as recorded in Book 22 Locations, page 13, records of Granite County~~
MORNING as recorded in Book 22 of Locations, page 15, records of Granite County
~~BAY HORSE as recorded in Book 22 of Locations, page 35, records of Granite County~~
SUNSHINE as recorded in Book 22 of Locations, page 37, records of Granite County
ELK as recorded in Book 22 of Locations, page 39, records of Granite County
DOUGLAS as recorded in Book 22 of Locations, page 41, records of Granite County
STAR as recorded in Book 22 of Locations, page 19 records of Granite County
LAST CHANCE as recorded in Book 22 of Locations, page 17, records of Granite County
SHAMROCK as recorded in Book 21 of Locations, page 22, records of Granite County
~~HOMESTAKE as recorded in Book 21 of Locations, page 23, records of Granite County~~
HOMESTAKE EXT. AS recorded in Book 21 of Locations, page 25, records of Granite County
MOUNTAIN VIEW as recorded in Book 21 of Locations, page 99, records of Granite County
SHAMROCK EXT. as recorded in Book 21 of Locations, page 106, records of Granite County

MILL SITES

HOMESTAKE as recorded in Book 21 of Locations, page 27, records of Granite County
~~HOMESTAKE EXT. as recorded in Book 21 of Locations, page 26, records of Granite~~ County
SHAMROCK EXT. as recorded in Book 22 of Locations, page 20, records of Granite County
~~LAST CHANCE as recorded in Book 22 of Locations, page 21, records of Granite County~~
STAR as recorded in Book 22 of Locations, page 22, records of Granite County

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

*TO HAVE AND TO HOLD, all and singular, the said premises, together with the appurtenances and privileges thereto incident; unto the said part*y *of the second part,* his *heirs and assigns forever. It is expressly covenanted that it is intended hereby to convey any and all right, title and estate, which may hereafter be acquired to said premises, or any part thereof, by virtue of any patent which may hereafter be issued by the United States Government therefor, under proceedings heretofore instituted in that behalf.*

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

Signed, Sealed and Delivered in the Presence of

O. J. Durand (SEAL)
Grace Durand (SEAL)
(SEAL)

ACKNOWLEDGMENT

STATE OF MONTANA,
County of Granite } ss.

On this 18th day of June nineteen hundred and fifty-one before me J. Chandice Ettien a Notary Public for the State of Montana, personally appeared O. J. Durand and Grace Durand

known to me

(xxxx

5

DEED OF MINING CLAIM. Missoulian Job Print

THIS INDENTURE, *Made the* 26th *day of* October, *in the year of our Lord one thousand nine hundred and* fifty-one *Between* ROY W. KEY and GOLDA A. KEY, husband and wife, of Missoula, Montana, and O. J. DURAND and Grace DURAND, husband and wife, of Hall, Montana, parties of the First Part, and WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY, a Montana Corporation, with its principal place of business at Missoula, Missoula County, Montana, party

of the second part, WITNESSETH, that the said parties of the first part, for and in consideration of the sum of - - -TEN AND NO/100 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ *Dollars,* lawful money *of the United States of America, to* them *in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have Granted, Bargained, Sold, Remised, Released and Forever Quitclaimed, and by these Presents do grant, bargain, sell, remise, release and forever quitclaim unto the said party of the second part, and to* its successors~~xxxx~~ *and assigns* the following described mining claims and millsites known as the Durand Group, situated in the Dunkleberg (unorganized) Mining District, Granite County, Montana, to-wit:

HOME STAKE EXTENSION QUARTZ LODE MINING CLAIM; HOMESTAKE QUARTZ LODE MINING CLAIM; MOUNTAIN VIEW QUARTZ LODGE MINING CLAIM; MID-NITE QUARTZ LODE MINING CLAIM; MORNING BIRD QUARTZ LODE MINING CLAIM; MORNING QUARTZ LODE MINING CLAIM; BAY HORSE QUARTZ LODE MINING CLAIM; SUNSHINE QUARTZ LODE MINING CLAIM; LAST CHANCE QUARTZ LODE MINING CLAIM; SHAMROCK QUARTZ LODE MINING CLAIM; SHAMROCK EXTENSION QUARTZ LODE MINING CLAIM; ELK QUARTZ LODE MINING CLAIM; DOUGLAS QUARTZ LODE MINING CLAIM; STAR QUARTZ LODE MINING CLAIM; MOUNTAIN VIEW TUNNEL SITE; HOMESTAKE MILL SITE; HOME STAKE EXTENSION MILL SITE; SHAMROCK MILL SITE; LAST CHANCE MILL SITE, STAR MILL SITE.

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

TO HAVE AND TO HOLD, *all and singular, the said premises, together with the appurtenances and privileges thereto incident; unto the said part of the second part, heirs and assigns forever. It is expressly covenanted that it is intended hereby to convey any and all right, title, interest and estate which may hereafter be acquired to said premises, or any part thereof, by virtue of any patent which may hereafter be issued by the United States Government therefor, under proceedings heretofore instituted in that behalf,* but the parties of the first part do not warrant the title to the above described mining claims and mill sites.

IN WITNESS WHEREOF, *the said parties of the first part have hereunto set* their *hands and seal the day and year first above written.*

Signed, sealed and delivered in the presence of

Roy W Key [SEAL]

Golda A. Key [SEAL]

O. J. Durand [SEAL]

Grace Durand. (SEAL)

ACKNOWLEDGMENT

STATE OF MONTANA,
County of Missoula. } *ss.*

On this 26th *day of* October, *nineteen hundred and* fifty-one

before me W. T. Boone, *a Notary Public in and for said*

County of Missoula, *State of Montana, personally appeared*

ROY W. KEY and GOLDA A. KEY, husband and wife, and O. J. DURAND

and GRACE DURAND, husband and wife,

known to me

(~~*who proved to me on the oath of*~~ .....)

*to be the person*s *whose name*s are *subscribed to the within instrument, and acknowledged to me that* they *executed the same.*

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

W. T. Boone

Notary Public in and for Missoula

County, State of Montana. Nov. 13, 1951

RECORDED COMPARED INDEXED

Deed of Mining Claim
4813

TO

STATE OF MONTANA,
County of Granite } ss.

I hereby certify that the within Deed was received for record this 5th day of Feb. A. D. 1962 at 1:05 o'clock P. M., and is duly recorded in Volume 34 of Deeds, page 389

Nellie Dougal
County Recorder.

By ..... Deputy.

Fees, $1.50

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA-946 X

Date received 5/18/51

Participation

Key and Durand-A Montana mining partnership
413 Montana Building
Missoula, Montana

Name and address of applicant

Date March 26, 1951

FILL IN THIS BLOCK

Date of application March 26, 1951

Estimated cost $48,700

Mineral or metal Zinc, lead, copper, silver

Percentage of Government participation 50%

Location of mine Dunkleberg Mining District, Granite County, Montana

Date of filing MF-100 March 26, 1951

DMA Docket Number, if available DMA-946 X

INSTRUCTIONS

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

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing. Owners

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. See attached.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? $24,350

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

16—64067-1

THE PROPERTY

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

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

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

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

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions. None.

THE EXPLORATION

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

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

THE REQUIREMENTS AND COSTS

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

CERTIFICATION

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

Key and Durand (A Montana Mining Partnership) By Roy W. Key O. J. Durand
(Name of company) (Signature of authorized official)

March 26, 1951 Roy W. Key, O. J. Durand
(Date) For the partnership (Title)

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

*Same as footnote on page 1.

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

10. (a) The following quartz lode mining claims, mill sites, and tunnel site:

Home Stake Extension	Quartz	Lode	Mining	Claim
Home Stake	"	"	"	"
Mountain View	"	"	"	"
Mid-Nite	"	"	"	"
Morning Bird	"	"	"	"
Morning	"	"	"	"
Bay Horse	"	"	"	"
Sunshine	"	"	"	"
Last Chance	"	"	"	"
Shamrock	"	"	"	"
Shamrock Extension	"	"	"	"
Elk	"	"	"	"
Douglas	"	"	"	"
Star	"	"	"	"

Mountain View Tunnel Site

Home Stake	Mill	Site
Home Stake Extension	"	"
Shamrock	"	"
Last Chance	"	"
Star	"	"

(b) South one-half of Section 27 and North one-half of Section 34 of T 9 N, Range 12 West, of the Deer Lodge National Forest, wherein the above lode mining claims, mill sites, and tunnel site, are all located.

15. If ore of shipping grade should be found in exploration work it could be trucked approximately 7 1/2 miles downgrade for loading into railroad ore cars at Sheryl siding on the Northern Pacific railway branch line which runs from Drummond to Anaconda and Butte, Montana. The present indications are that all ores in the Shamrock Area will be of milling grade and can be milled at the mine site.

20. Zinc, lead, copper and silver as replacement deposits as indicated in Mr. Popoff's report of USBM Project #15-197 as pertains to the Shamrock Area.

21. See attached modification of our original proposal submitted on March 26, 1951. If the entire proposed development work is carried out it is estimated that all the work can be completed within 15 months from date.

22. Again refer to Mr. C. C. Popoff's report as mentioned previously and all the trench assay maps, diamond core drill hole logs with slush and core assays, particularly holes #8a and #10 as indicated in Figure 4 of Mr. Popoff's report of Wasa-Shamrock Area.

23. (a) Not more than four miners, which we suggest work on a footage contract basis in driving the proposed drifts. Said miners are to be paid not more than $12.00 per linear foot of drift completed. One dozer operator at $2.00 per hour.

(b) Mr. O. J. Durand, Supervisor, salary of $250.00 per month. Mr. Durand will reside at the property during development work.

Mr. John W. Cole, mining engineer, on an occasional consulting basis, not more than $50.00 per day and expenses. It is estimated that Mr. Cole will not be needed in consultation more than twice in each thirty days. Mr. Cole resides in Spokane but will be at Black Pine Mine about 8 miles from Wasa-Shamrock during the coming months.

(c) Repairs to Wasa cabin have already been completed. No additional costs.

(d) No additional installations contemplated during development stage.

(e) Three (3) AX Diamond Core Bits (Longyear) at approximately $130.00 each, depending upon carat weights.

(f) One Eimco 12B mucking machine at $250.00 per month. One UCD-9 International, 20 KW, 3-phase 220-440 volt diesel electric set at $225.00 per month. This set to operate diamond core drill and furnish power for ventilating equipment on hand.

(g) See attached rental schedule for equipment now owned and at the property. The total monthly rental schedule for this equipment is $1986.68 per month; the total value of such equipment is $24,834.49.

(h) A. One-inch quarter octagon drill steel.

Drill steel	firsts	(32 inches)	$4.70 each
" "	seconds	(48 inches)	$5.90 each
" "	thirds	(66 inches)	$7.40 each
" "	fourths	(84 inches)	$8.75 each

B. Rock Bits (Timken)

One and seven-eighths	side hole	$0.57 each
Two-inch	side hole	$0.577 each
Two and one-eighths inch	side hole	$0.59 each

C.	Powder DuPont	40% Gelex	$22.50 per hundred (less than this in ton loads)
D.	Fuse		$12.50 per thousand feet
E.	Blasting caps		$ 2.05 per hundred

As to the total quantity required of the above items it would be difficult to estimate due to the unknown problems which will be encountered in driving the proposed drifts.

(i) Diesel fuel oil — 17 1/2 cents a gallon

which will furnish the only power necessary during development stage. Ample diesel fuel oil and greases available at Drummond, Montana, about 16 miles from Wasa-Shamrock Area.

24. See our modification of the original proposal for development of Shamrock ore bodies which was submitted first on March 26, 1951. The modification dated May 10, 1951. Letters below refer to our modified proposal - as attached.

(B) Diamond drill hole for 130 feet as indicated should be completed within ten days' drilling time. Drill is now at property.

(C) Should be completed within ten days' working time.

(D) Should be completed in 80 working days with two shifts of miners and estimating that each shift will make five feet per 8 hours.

(E) Should be completed within 60 working days after tunnel in D is completed. A total of 140 working days for the two drifts.

(J) Should be completed within 60 days.

(K) Should be completed within 30 days following the completion of dozer work in paragraph (J) of our proposal.

(Key & Durand - DMA-946)

May 10, 1951

Refer: DMA-946

Modification of original proposal for development of ~~Sharmoci~~ SHAMROCK ore bodies at Durand Lead-Zinc near Hall, Granite County, Montana (USBM Project 15-197.)

In view of findings upon completion of stripping between Trench 14 and 13 of above property (See USBM Maps No. 5A and No. 4), the recommendations of Mr. John W. Cole, a copy of whose report is attached and Mr. Herres's letter of 18 April (last paragraph), the following points are offered in modification of our original proposal submitted 26 March, 1951:

A. Stripping ground between Trench No. 14 and 13 - Has been accomplished.

B. Reduce amount of Diamond Core Drilling to 130 feet at $10.00 per foot $1,300.00
This is hole No. "A" of Mr. Popoff's original recommendation, (Coordinates 9400 North, 8790 East, dip 40 degrees, bearing east to check continuity of Shamrock ore body down nose of anticline as indicated in last paragraph of Mr. Cole's recommendation.) Estimate of cost of diamond drilling is raised from $6.00 to $10.00 per foot in view of difficulty USBM had in drilling hole 8A just south of proposed hole "A" in 1944 - '45 (?).

C. Cleaning up, putting down track, air lines and hanging vent tube in Wasa No. 3 or Lower Wasa Tunnel 1,000.00
This Tunnel is 700 feet long and is straight. See attached photographs of this tunnel made on 22nd April, 1951.

D. 800 feet 5' x 7' and 6' x 8' drift south from lower Wasa Tunnel (No. 3) into Shamrock ore body between Trenches 13 and 14 @ $26.00 per linear foot 20,800.00

E. 600 feet 5' x 7' and 6' x 8' drift south from old Wasa Tunnel starting just below Trench 13. See figure 5A and 4. This item is left in our proposal because good engineering would indicate that sooner or later this tunnel will have to be driven for adequate ventilation and safety factors, to say nothing of probable ore body development below and to the south of Trench 14 ($26.00 per linear foot) 15,600.00
This drift would be approximately 175' vertical distance above tunnel in "D".

F. Deleted: Would rather save this expense until probable construction of mill at this property. Mr. Hancock is at present well employed on a large flourspar property in Idaho. We can secure services of Mr. John W. Cole on an occasional consulting basis. Mr. Cole contemplates working at Black Pine Mine at about 8 miles southwest of Durand Lead-Zinc. Good road connects two properties.

G. Deleted: Have repaired old cabin for cook house at Wasa workings. Will not employ more than four miners at a time -

miners can live in tents this summer while development work proceeds.

H. Small tools and miscellaneous equipment. These items would be expendable and cover rock bits, carbide, drill steel and diamond core drill bits. . . . . $ 2,500.00

I. Contingencies in "H" our original proposal, reduce to 5,000.00

J. Dozer work such as leveling off on present cut between Trench 14 and 13 for sampling, cutting transverse trench one-half way between Trenches 14 and 17 and one-half way between Trenches 5 & 6. See Figure No. 4 . . . . . 2,000.00

K. Sampling and assaying in Trenches mentioned in J 500.00

Total $48,700.00

It is entirely possible that more diamond drilling should be done than is mentioned in "B", but would be more likely under ground from drift south from Wasa No. 3 or Wasa lower tunnel. We believe it expedient to keep dozer and Diamond Core Drill on hand for any indicated work while development is going on. It would be somewhat expensive to be moving this equipment in and out from and to the workings.

Respectfully,

Roy W. Key

ROY W. KEY
Key & Durand

(Key & Durand - DMA-946)

LIST OF MINING EQUIPMENT, MAY 1, 1951

THIS EQUIPMENT IS PERSONAL PROPERTY OF ROY W. KEY BUT IS COMMITTED TO USE IN ASSISTING TO DEVELOP DURAND LEAD-ZINC PROPERTY.

1. MODEL D-6 CATERPILLAR TRACTOR, 74" GUAGE, SERIAL NO. 9U-6991 EQUIPPED WITH TRUNNION GROUP, CRANKCASE GUARD, UPPER ENGINE GUARD, SHEAVE SUPPORT AND RADIATOR GUARD, TRACK ROLLER GUARD, FRONT PULL HOOK, EQUALIZER SPRING, 18" H. T. GR. TR. ASSM. NO. 25 CATERPILLAR CABLE CONTROL, ARRANGEMENT 4F-3412, SERIAL NO. 9-D-18237. NO. 6A CATERPILLAR CABLE CONTROLLED BULLDOZER, ARRANGEMENT 5F-3193, SERIAL NO. 16-C-5252 . . . . . $13,237.55

2. LONGYEAR WOLVERINE DIAMOND CORE DRILL, ELECTRICALLY DRIVEN COMPLETE WITH 600FEET AX RODS AND ALL NECESSARY DRILLING EQUIPMENT EXCEPT BITS. PURCHASED NEW LATTER PART OF 1948. USED FOR ONLY 265' OF HOLE. CAN BE USED EITHER ABOVE OR BELOW GROUND 3,585.77

3. DIESEL DRIVEN AIR COMPRESSOR - D-311 CATERPILLAR ENGINE, SERIAL NO. 7-S-5226, V-BELT CONNECTED GARDNER-DENVER 2 STAGE 145 CFM COMPRESSOR, TYPE WBR-4010, SERIAL NO. 147091, COMPLETE WITH 30" x 84" GARDNER-DENVER AIR RECEIVER. ALL UNITS ON ANGLE IRON FRAME MOUNTED ON 3 8" x 8" SKIDS. COST 2,948.06

4. NEW 3/4 TON 4 SPEED CHEVROLET PICK UP TRUCK. COMPLETE WITH SNOW-MUD GRIP TIRES AND TRAILER HITCH 1,782.48

5. MINE CARS (3), 500 FEET USED MINE RAIL (20 & 16#), USED PIPE 400 FEET (3"-2½"O. PIPE THREADER, SMALL TOOLS SUCH AS VICES, WRENCHES, HAMMERS, PICKS AND SHOVELS 1,000.00

6. 7900# 16 POUND NEW MINE RAIL (CIF), 1 KEG MINE RAIL SPIKES, 82 PAIRS FISH PLATES (BARS) FOR ABOVE RAIL, 62# BOLTS & NUTS FOR BARS 699.73

7. ONE COPPUS TM-6 VENT AIR BLOWER COMPLETE WITH MANUAL STARTER, 500 FEET NEW 16" TUBING, 40 FEET USED 16" TUBING, 150 FEET 12" TUBING WITH REDUCER 612.17

8. 1200 FEET NEW GALVANIZED PIPE AND COUPLINGS - (600'-2", 300'-1½", AND 300'-1¼") 472.63

9. ONE INGERSOL-RAND DA-35 DRIFTER, SERIAL NUMBER , 516799, DPC 587, COMPLETE WITH COLUMN AND SAFETY CLAMP AND ARM (SURPLUS PROPERTY PURCHASE) 317.25

10. ONE INGERSOL-RAND STOPER, MODEL R-48, SERIAL NO. 513600 (SURPLUS PROPERTY PURCHASE) 178.85

TOTAL . . . . . ~~$24,838.49~~ 24,834.49

Key and Durand
DMA-46

ROY W. KEY, M.D.
Missoula, Montana

Financial Statement
May 10, 1951

ASSETS

CURRENT ASSETS					
Cash on Hand and in Bank			$1184.43		
Accounts Receivable			3715.50		
Total Current Assets				$4899.93	
CAPITAL ASSETS AND REAL ESTATE					
Professional Equipment and Automobile		$8424.82			
Reserve for Depreciation		3730.42	4694.40		
Capitalized Investment and equipment in mining Property:					
Equipment,	$24833.49				
Reserve for Depreciation	1807.19	23026.30			
S & M Mine		10385.24			
Durand Lead & Zinc		1934.49	35346.03		
Residence (Market value $12000.00)			8500.00		
Total Capital Assets and Real Estate				48540.43	
TOTAL ASSETS					$53,440.36

LIABILITIES AND NET WORTH

CURRENT LIABILITIES (*)					
Note Payable, Bank	(1)	$750.00			
Note Payable, Other		600.00			
Contracts Payable	(2)	4656.00			
Accounts Payable (Including personal)		2005.19			
Total Current Liabilities			$8011.19		
TERM LIABILITIES					
Note Payable, Bank	(1)	4250.00			
Contract Payable	(2)	5980.00			
Secured Mortgage on Residence		5053.33			
Total Term Liabilities			15283.33		
Total Liabilities				$23294.52	
Net Worth				30145.84	
TOTAL LIABILITIES AND NET WORTH					$53,440.36

(*) Payments due within six months.

****

PROFIT AND LOSS ACCOUNTS
1/1/51 - 5/10/51

Receipts from Professional Services		$16450.67
Cost of Operations	$8684.41	
Depreciation	337.78	9022.19
Net Profit		$7428.48

Profit and Loss Account prepared on Cash basis, and does not include Accounts Receivable nor Accounts Payable.

(Key & Durand - DMA-946)

Monthly Rental Schedule on Equipment

Associated Equipment Distributors, 1949 Figures

1.	D-6 Caterpillar Dozer	$ 904.00
2.	Longyear Diamond Core Drill	358.00
3.	Air Compressor	252.00
4.	Chevrolet 3/4 ton pick-up truck, 1000 miles at 14¢ mile - U. S. Forest Service rate	140.00
5.	Mine cars - used rails and small tools	75.00
6.	New Rail 7900#	69.73
7.	Coppus TM-6 Vent air blower and tube	30.60
8.	New Pipe - 1200 feet	20.35
9.	Ingersol-Rand DA-35 Drifter	72.00
10.	Ingersol-Rand R-48 Stoper	65.00
	Total	~~$1,937.18~~ 1,986.68

Form MF-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

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

NOT TO BE FILLED IN BY APPLICANT

Docket No. Dma-946 X

Date received 5/18/51

Key and Durand-A Montana Mining Partnership
413 Montana Building
Missoula, Montana

Name and address of applicant

Date March 26, 1951

INSTRUCTIONS

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

GENERAL TECHNICAL DATA

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

1. Materials produced: See attached sheets for 1, 2, 3, 4, 5, 6 and 7.
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☒ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

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

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Key and Durand--a partnership under the Laws of the State of Montana							
413 Montana Building							
Missoula, Montana							
This partnership is composed of Roy W. Key, 413 Montana Building,							
Missoula, Montana, and O. J. Durand, Hall, Montana							
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production: Not in production.

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)	See Mr. C. C. Popoff's report on USBM Project No. 15-197 as pertains to Wasa-Shamrock Area.				
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change. Does not apply.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves. See USBM Project No. 15-197 as pertains to the Wasa-Shamrock Area as described in detail by Mr. Popoff. See also Figures No. 4 and 5a submitted with our original proposal as of 26 March 1951.

16—63792-1

Form MF-100

Key and Durand
DMA-946

1. (a) Chief products are zinc, lead, copper, and silver, named in order of relative percentages.

(b) Possibly some manganese; but whether this mineral can be saved in milling process remains to be determined.

2. (a) No shafts at Wasa-Shamrock Area.

(b) See Figure 8 USBM Project #15-197, C. C. Popoff's report of same. This Figure #8 will show the extent of drifts and crosscuts at east end or from the breast of the Wasa #1 tunnel, which is 700 feet in length, bearing south of east. Also see Figure 5 of same report.

(c) Lower Wasa or Wasa #3 tunnel 700 feet on straight.

Wasa #1 and #2 tunnels are shorter than Wasa #3 but of no importance now except from a standpoint of ventilation in drift, which we propose to drive south from the southerly drift in Wasa #3 tunnel as indicated in figure #5a USBM Project #15-197.

(d) See Mr. Popoff's report on this project as pertains to the Wasa workings. No portion of the old Wasa workings is flooded. There is no pumping problem.

3. (a) The Wasa-Shamrock Area is one and the same. The nearest town is Hall, Montana, approximately 10 miles northwest. The nearest shipping point is Sheryl, Montana, about 5-1/2 miles down Douglas Creek Road from mill sites at Wasa-Shamrock Area.

(b) Dunkleberg (unorganized) Mining District, Granite County, Montana.

(c) Wasa-Shamrock Area is in Sections 27 and 34 of T 9 N, Range 12 West, of the Deer Lodge National Forest.

(d) Granite County, State of Montana.

4. (a) Is not in operation.

(b) Owner.

5. See Mr. C. C. Popoff's report in the Wasa-Shamrock Area of USBM Project #15-197. It is estimated that the Shamrock ore body can possibly be brought into production within 12 months from date.

6. (a) Both the partners in this application will act as managers for the project and will follow the advice of capable mining engineers.

Mr. O. J. Durand resides at Hall, Montana, but plans to spend his entire time at the property. Mr. Durand is a native of Granite County, Montana, and grew up at Phillipsburg in the heyday of the Great Granite Bi-Metallic Mine. He formerly operated a large general mercantile business, coal and feed yard at Phillipsburg, Montana. At present, he does general contracting of a small nature, such as the construction of dwellings and painting projects. He is 65 years of age and has been in and out of mining all his adult life. It was by Mr. Durand's own hands and labor that the ore body of the Forest Rose Mine was opened just at the start of World War II. Mr. Durand is energetic and is quite active physically for his age. He has a clear concept of the Wasa-Shamrock Area from a long study of the ground itself and having been closely associated with USBM engineers while his property was being explored in 1943-44-45.

Roy W. Key, age 52, a native of the State of Texas where he resided until the age of 39, at which time he migrated from Sherman, Texas to Spokane, Washington, where he became a protegé of the late Mr. R. K. Neill, a well-known and successful mining man of the Pacific Northwest. Dr. Key graduated from the University of Texas in 1930, after which he spent three years in post graduate work in New York City. He is a naval combat veteran of both World War I and II, having attained the rank of Captain (MC) USNR at the age of 47 years. The attached financial statement will give an indication of his business.

Mr. John W. Cole, mining engineer, formerly of the US Bureau of Mines, is employed on the consulting basis during development work and if and when the mill is constructed for the benefication of Shamrock ores, Mr. Francis A. Hancock, E. M, graduate of the Royal School of Mines, London, England, will be in charge of mill construction and mining thereafter. Mr. Hancock is 65 years of age and has had wide experience in mining, ranging from the great Kennecot mine in Alaska to his present work in mining flourspar near Challis, Idaho (Meyer's Cove).

7. (a) Mr. Popoff's report previously referred to will answer this question. Operations at Wasa were suspended at the end of World War II due to the low price for zinc.

(b) Here also see Mr. Popoff's report.

(c) See Mr. John W. Cole's letter-report of May 1, 1951, copy of which is attached hereonto.

(Key & Durand - DMA-946)

DURAND LEAD ZINC, Granite County, Montana

March 26, 1951

200,000 Tons Ore averaging 5% Zinc - 100 lbs. Zinc per ton
200,000 x 100 - 20,000,000 lbs. Zinc
20,000,000 lbs. Zinc less 65% Recovery — 13,000,000 lb. Net
13,000,000 lbs. Zinc @ $.17 per lb. — $2,210,000.00

1 Ton 5% Zinc Ore - 100 lbs. Zinc per ton
Recovery from Milling & Smelter charges - 65% of 100 lbs - 65 lbs net
65 lbs Zinc @ $.17 per lb. — $11.05 per ton

Cost of Mining - per ton Ore -	4.00	
Cost of Milling per ton Ore	2.00	
Cost of Mine development	1.00	
Cost of Overhead, Taxes, Insurance	1.05	
Total Working Costs		8.05 per ton
	Profit	$ 3.00

Sinking Fund for Amortization of invested Capital for Mill and Equipment and Mine Development ($200,000.00) — 1.00 per ton

Net Profit 2.00 per ton

200,000 tons Ore @ $2.00 per ton — $400,000.00 Net Profit

Note:

The above figures do not take into account the values in Lead, Copper, and Silver contained in the Ore. It is to be noted that some of this Ore will contain a higher value in lead, than the 5% Zinc shown in the above figures.

The values of Lead, Copper, and Silver will be recovered in the mill at no extra cost for milling as the mill provides for this recovery.

(Signed)
FRANCIS A. HANCOCK, E.M.

Certified a true copy:

Ray W Key

(Key & Durand - DMA-946)

W. 1217 - 8th
Spokane, Washington
May 1, 1951

Roy W. Key, M.D.
101 E. Broadway
Missoula, Montana

My dear Dr. Key:

This is a brief summary of my visit to your Wasa-Shamrock mining property east of Hall, Montana, on Sunday, April 30.

I visited the property in company with you, Mr. Oscar Durand, and an attorney from Philipsburg.

We inspected the recent trenching between U. S. Bureau of Mines trenches 13 & 14. The stripped area is roughly 300 feet between the mentioned trenches by 100 to 125 feet wide. A leached iron stained outcrop that is continuous between the two trenches has been exposed. According to your measurements the width of this outcrop near the midpoint between the 2 trenches is 83 feet. It appears that this outcrop represents the mineralized beds where they are folded around the apex of the anticline. Trench 13 probably is near the apex of these beds. The sampling of trench 14 indicates that the apex has been eroded at this point; the 2 mineralized zones in trench 14 may represent the beds on the limbs of the anticline.

The plunge of the anticline is about 40 degrees to the north; the slope of the surface in the stripped area is about 25 degrees north; therefore, the actual horizontal length of outcrop exposed is about 1/3 of the length of the stripped area. The samples from trenches 13 and 14 indicate a possible minable ore width of 25 feet. Therefore the horizontal area of the ore is indicated roughly to be 25 x 100 ft. or 2500 ft. With a tonnage factor of 12 cu. ft. equal one ton of ore in place, roughly 200 tons per foot of depth are indicated. The lower Wasa adit is 200 feet below the outcrop; therefore, the ore reserves in this ore body are indicated to be 40 to 50,000 tons, if continuous to the depth of the lower Wasa adit.

The northward plunge of the orebody and the northward slope of the surface, coupled with a possible 50 foot depth of oxidation and depletion of zinc minerals indicates that a negligible tonnage of sulfide ore may be developed in this ore body above the altitude of trench 13. However, the depth of oxidation of outcrops exposed on steep slopes is usually less than the depth where the surface is horizontal, because erosion proceeds more rapidly on steep slopes. If the depth of oxidation in this instance is less than 20 feet, 8000 to 10,000 tons of sulfide ore may be available above trench 13 that could be mined cheaply from an open pit.

It is recommended that samples of the outcrop exposed in the stripped area be taken across a line midway between trenches 13 and 14. Start at the west wall and cut a channel or small trench across to the east wall. Divide the sampling into 5 foot lengths. Take at least 5 pounds of rock per foot of length or 25 pounds per sample. The outcrop here may be expected to be depleted of zinc to

about the same degree as trenches 13 and 14 but the assays will give information that will be needed, if work is done from the level of trench 13.

In order to ascertain the depth of oxidation if shallower than anticipated, it is recommended that an open cut be extended into the outcrop from the level of trench 13. Drilling and blasting will be required for this work. Extend the open cut about 40 feet south or until the vertical depth at the face is about 20 feet. It is hoped that this cut will expose sulfide ore in place. The work will not be wasted, however, if sulfide ore is not exposed, as it will provide a good platform for starting an adit. The cost of this work is estimated to be $750.00.

Hole "A" should be drilled as planned from the surface (coordinates, 9400 north, 8790 east) dip - 40 degrees, bearing east to check the continuity of the Shamrock orebody down the nose of the anticline before extending the lower Wasa adit to the south. If favorable results are obtained from hole "A", the drift from the lower Wasa adit should be extended 300 feet south to cut the extension of the Shamrock orebody.

Yours very truly,

John W. Cole
Mining Engineer

Certified a true copy:

Ray W Key

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

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve. See Figures 4, 5, 5a, 9 and 10 of USBM Project 15-197.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows: All tonnage is on standard ton or 2000 pounds.

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Indicated Probable ~~Measured (proved)~~	200,000	5% total metal content	$17.50	$11.05	Mining and smelting costs and milling loss
Indicated (probable)	See attached computations of Mr. Francis A. Hancock, E.M.				$14.50

(*c*) If placer: Does not apply.

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

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

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

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

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

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

13. Access Roads: Good road from Sheryl on paved highway for five and one-half miles up Douglas Creek and then two and one-half miles of dozer road to old Wasa workings. Shamrock joins Wasa on South.

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

14. Water Supply: Ample water in Douglas Creek for year round development and mill operations.

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

15. Power: During development stage diesel power will be used. If mill is constructed, only two miles to Montana Power Company lines for adequate electrical power at low commercial rates.

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

16. Labor: Propose to use four miners and one dozer operator during development stage.

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

17. Equipment and Facilities: See attached list of mining equipment now at property.

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

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain. See paragraph "G" of our modified proposal attached herewith. All surface work should be completed by October 15 due to onset of snow season. Adit of lower Wasa tunnel is 6,020 feet elevation below sea level.

CERTIFICATION

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

Key and Durand (A Montana Mining Partnership)
(Name of company)

By Roy W. Key O. J. Durand
(Signature of authorized official)

Roy W. Key O. J. Durand

March 26, 1951
(Date)

For the partnership
(Title)

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

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

946

March 26, 1951

From: Key & Durand - A Limited Partnership
413 Montana Building
Missoula, Montana

To: Director of Defense Minerals Administration
Washington 25, D. C.

Via: 1. Messrs A. E. Weissenborn and Glen Reed
Regional Office, Defense Minerals Administration
127 South Howard Street
Spokane 8, Washington

2. Mr. Otto Herres, Chief, Lead-Zinc Branch
Defense Minerals Administration
Washington 25, D. C.

Subject: Development Loan, Application and Request for same

Reference: U. S. Bureau of Mines Project No. 15-197, Durand Lead-Zinc, C. C. Popoff report on same. This report is now at USBM, Washington, D. C.

Enclosures:
A. Copies of two maps from Reference Report.
B. List of mining equipment on hand and available.
C. One set of photographs of major items of equipment on hand - photos to accompany the original of this report.

1. It is respectfully requested that the Director consider this letter as an application for Development Loan in the amount of $60,000.00 to be expended on reference project as set forth herein after:

A. Stripping surface from Trench No. 14 to Trench No. 13 as indicated in Figure 5A of enclosures - 100 hours at $10.00 hour . . . . . $ 1,000.00

B. 500 feet Diamond Core Drilling as indicated on Figures 5A & 4 of enclosures @ $6.00 per foot 3,000.00
This estimate includes rental on an International UCD-9 Diesel Electric set, 220-440 Volt, 3, 20 K.W. set to power Longyear Electric Drill, water pump and lights for night drilling, also furnish power for Coppus TM-6 ventair for ventilation in drifts mentioned next in Item C.

C. 850 feet 5' x 7' and 6' x 8' drift south from Lower Wasa Tunnel (No. 3). (See figure 5A) @ $26.00 per linear foot 22,100.00

Part of this drift would undoubtedly be in good ore, hence 6' x 8' portion to set chutes to stopes. Estimates include rental on 1 315 CFM Diesel Compressor and 1 Eimco 12-B mucking machine - 2 shifts per day and possibly 3 shifts.

D. 600 feet 5' x 7' and 6' x 8' drift south from old Wasa Tunnel just below Trench No. 13. See Figure 5A. . . .$15,600.00
Same equipment rental as in Item C.

E. Mining Engineers salary $500.00 per month for 6 months 3,000.00
Engineer to be Mr. Francis A. Hancock, E. M., Royal School of Mines, London, England. Mr. Hancock is a registered and experienced Engineer well known to Regional office of U. S. Bureau of Mines at Albany, Oregon. He is also an experienced Diamond Core Drill Engineer. Mr. Hancock will live at the property.

F. Bunkhouse and Boarding House for 12 men. 6,000.00
Estimate includes comfortable but durable furnishings.

G. Small tools and miscellaneous equipment. 2,500.00
These items would be expendable.

H. Contingencies - Industrial Accident Insurance, Unemployment Compensation Insurance, Social Security Tax and Liability Insurance. 6,800.00

Total. $60,000.00

2. The above outlined development work would block out an estimated 200,000 to 250,000 tons of zinc, lead and copper ore in Shamrock Area averaging at least 5% in total minerals, mostly zinc.

3. American Cyanamid Company's Testing Laboratory at Stamford, Connecticut, has and is still making a milling and metallurgic study of Wasa-Shamrock ore and have indicated a satisfactory recovery percentage and a zinc concentrate of 50% plus.

4. Since work has already been started on this property by the partners, miners are available to work and the equipment is on hand as indicated by Enclosure B, it is requested that this application be given quick and favorable consideration. This property has an elevation of 6000 feet plus and it is essential that all surface work be completed by October 1, 1951. If the proposed drifting and diamond drilling proves out, it would be pertinent to consider the

construction of a mill for the benefication of Shamrock Ores before snow falls circa October 20.

Roy W. Key

O. J. Durand

COPY

LIST OF MINING EQUIPMENT, MARCH 15, 1951

THIS EQUIPMENT IS PERSONAL PROPERTY OF ROY W. KEY BUT IS COMMITTED TO USE IN ASSISTING TO DEVELOP DURAND LEAD-ZINC PROPERTY.

1.	MODEL D-6 CATERPILLAR TRACTOR, 74" GAUGE, SERIAL NO. 9U-6991 EQUIPPED WITH TRUNNION GROUP, CRANKCASE GUARD, UPPER ENGINE GUARD, SHEAVE SUPPORT AND RADIATOR GUARD, TRACK ROLLER GUARD, FRONT PULL HOOK, EQUALIZER SPRING, 18" H. T. GR. TR. ASSM. NO. 25 CATERPILLAR CABLE CONTROL, ARRANGEMENT 4F-3412, SERIAL NO. 9D-18237. NO. 6A CATERPILLAR CABLE CONTROLLED BULLDOZER, ARRANGEMENT 5F-3193, SERIAL NO. 16C-5252	$ 13,237.55
2.	LONGYEAR WOLVERINE DIAMOND CORE DRILL, ELECTRICALLY DRIVEN COMPLETE WITH 600 FEET AX RODS AND ALL NECESSARY DRILLING EQUIPMENT EXCEPT BITS. PURCHASED NEW LATTER PART OF 1948. USED FOR ONLY 265' OF HOLE. CAN BE USED EITHER ABOVE OR BELOW GROUND	3,585.77
3.	DIESEL DRIVEN AIR COMPRESSOR - D-311 CATERPILLAR ENGINE, SERIAL NO. 7-S-5226, V-BELT CONNECTED GARDNER-DENVER 2 STAGE 145 CFM COMPRESSOR, TYPE WBR-4010, SERIAL NO. 147091, COMPLETE WITH 30" x 84" GARDNER-DENVER AIR RECEIVER. ALL UNITS ON ANGLE IRON FRAME MOUNTED ON 3 8" x 8" SKIDS. COST.	2,948.06
4.	NEW 3/4 TON 4 SPEED CHEVROLET PICK UP TRUCK. COMPLETE WITH SNOW-MUD GRIP TIRES AND TRAILER HITCH.	1,782.48
5.	MINE CARS (3), 500 FEET USED MINE RAIL (20 & 16#), USED PIPE 400 FEET (3"-2½"). PIPE TENDER, SMALL TOOLS SUCH AS VICES, WRENCHES, HAMMERS, PICKS AND SHOVELS	1,000.00
6.	CASH ALREADY EXPENDED ON DURAND LEAD AND ZINC PROPERTY SINCE NOVEMBER 1, 1950	837.45
7.	7900# 16 POUND NEW MINE RAIL (CIF), 1 KEG MINE RAIL SPIKES, 82 PAIRS FISH PLATES (BARS) FOR ABOVE RAIL, 62# BOLTS & NUTS FOR BARS.	699.73
8.	ONE COPPUS TM-6 VENT AIR BLOWER COMPLETE WITH MANUAL STARTER, 500 FEET NEW 16" TUBING, 40 FEET USED 16" TUBING, 150 FEET 12" TUBING WITH REDUCER.	612.17
9.	1200 FEET NEW GALVANIZED PIPE AND COUPLINGS - (600'-2", 300'-1½", AND 300'-1¼").	472.63
10.	ONE INGERSOL-RAND DA-35 DRIFTER, SERIAL NUMBER, 516799, DFC 587, COMPLETE WITH COLUMN AND SAFETY CLAMP AND ARM (SURPLUS PROPERTY PURCHASE).	317.25
11.	ONE INGERSOL-RAND STOPER, MODEL R-48, SERIAL NO. 513600 (SURPLUS PROPERTY PURCHASE).	178.85
	TOTAL	$ 25,670.94

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

500

PROJECT SUMMARY REPORT

By: W. P. Klugescheid

September 1, 1954

1. Docket No. DMEA-946X (Lead-Zinc)
Contract No. I-DMA-E30
Property: Wasa Mine
Location: Dunkleberg Mining District
Granite County, Montana

Operator: Western Montana Exploration and Development Co.
412 Western Bank Building
Missoula, Montana

Operator's Property Rights: Owner

2. Contract dated June 28, 1951. To complete - 12 months

Work Authorized

1.	Cleaning up the Lower Wasa adit (including putting down track, air lines and hanging ventube), a total distance of 900 feet	$ 3,000.00
2. (a)	800 feet of drifting on the main structure to intersect the Shamrock ore body and explore the area south of it @ $26.00 per foot	20,800.00
(b)	800 feet of crosscutting and drifting for exploration of the Shamrock and other possible ore bodies @ $26.00 per foot	20,800.00
(c)	320 feet of timbering of underground workings @ $6.00 per foot	1,920.00

3.	165 hours of bulldozing for surface exploration of the property @ $12.00 per hour	$ 1,980.00
4.	1,000 feet of diamond core drilling from underground stations for exploring the main structure ahead of crosscutting and drifting @ $8.00 per foot	8,000.00
5.	Sampling (underground workings, trenches, sludge and core from diamond drilling) and assaying	1,000.00
6.	Supervision and engineering	6,000.00
7.	250 hours of bulldozing for road cleaning @ $12.00 per hour	3,000.00
	Total Cost	$66,500.00
	Government's participation	$33,250.00

Amendments

No. 1 Dated September 19, 1951, effective June 28, 1951

Adds salary of bookkeeper to Exhibit "D".
No increase in the cost of the project.

No. 2 Dated October 12, 1951, effective June 28, 1951

1. In Exhibit "C" deletes rental value of a Diesel driven air compressor.

2. In Exhibit "C" adds rental value of one 315 c.f.m. portable air compressor.

No increase in the cost of the project.

No. 3 Dated October 18, 1951

1. In Exhibit "A" deletes item #7.

2. In Exhibit "A" adds - Access road construction in the amount of 1 5/8 miles at a total cost not to exceed $3,000.00

No increase in the cost of the project.

No. 4 Dated December 20, 1951, effective June 28, 1951.

1. In Exhibit "A" deletes items 2c, 3 and 4.

2. In Exhibit "A" add:

Item 8 -	150 feet of timbering of underground workings @ $6.00 per foot	$ 900.00
Item 9 -	10 hours of bulldozing for surface exploration of the property @ $12.00 per hour	120.00
Item 10-	700 feet of core drilling from underground stations @ $8.00 per foot	5,600.00
Item 11-	Buildings and fixtures	3,980.00
Item 12-	Purchase of 4 mine cars @ $325.00 each	1,300.00

No increase in cost of the project.

No. 5 Dated June 2, 1952

In Exhibit "D" adds salary of a geologist for one month

No increase in cost of the project.

No. 6 Dated June 26, 1952

Changes completion period from 12 to 13 months.
No increase in cost of the project.

No. 7 Dated September 17, 1952, effective June 28, 1951

Changes completion period from 13 to 18 months.

In Article 11 deletes figures $33,250.00 and $66,500.00 and replaces them respectively by the figures $42,925.00 and $85,850.00 thus providing $19,350.00 of additional funds with which to:

1. Continue south drift 280 feet to the area of U. S. Bureau of Mines Diamond Drill Hole No. 8A and crosscut east and west a total of 120 feet.

400 feet @ $39.00 per foot	$15,600.00

2. Diamond drill 500 feet in vicinity of D.D.H. #8A from above-mentioned drift or crosscut.

500 feet @ $6.00 per foot	3,000.00

3. For a part time consulting geologist for 2 months.

	750.00
Increase of cost of project	$19,350.00

No. 8 Dated November 19, 1952, effective September 1, 1952

In Amendment No. 7, it deletes Item 2 and substitutes the following:

Raise 96 feet in vicinity of Diamond Drill Hole No. 8A from the above mentioned drift or crosscut.

96 feet @ $31.25	$ 3,000.00

Work completed

Rehabilitation and cleanup of lower Wasa (No. 3) adit @ $6.54 per foot	$ 4,118.14
927 feet of laterals and drifts on Wasa No. 3 level @ $41.06 per foot	38,065.62
666.5 feet of crosscuts and slabbing for turns (Wasa No. 3) @ $41.06 per foot	27,366.45
380 feet of timbering on Wasa No. 3 (76 sets) @ $7.00 per foot	2,660.00

84.5 feet of stull raise from Wasas No. 3 level @ $50.00 per foot.	$ 4,225.00
Access road construction, 1 5/8 miles @ $2,023.22 per mile	3,277.62
Sampling and assaying	40.25
Surface mapping and exploration by consulting geologist and assistant	1,111.25
New buildings and improvements	2,559.80
Total Cost	$83,424.13
Government's participation	$41,712.07

The work was completed in December 1952. The Operator has done some additional exploration on his own account.

3. Audit - Certificate issued June 18, 1953.

Net cost claimed		$86,314.63
Exceptions:		
Prior to Audit	$ 96.04	
During the Audit	2,794.46	2,890.50
Total accepted cost		$83,424.13
Government's participation		41,712.07

4. Certification of Discovery - none issued

Ore reserves developed - none
Production - none

5. Comments:

Costs were high due to the fact that the Operator was unable to provide his share of the expenses when needed. This resulted in an intermittent one shift operation with correspondingly high equipment rental and other fixed charge costs. Two or three shift operation would have reduced the costs materially.

The project was undertaken to explore the "Wasa-Shamrock ore zone" south of the principal Wasa workings in the area where the Bureau of Mines trenching and diamond drilling had indicated the

possibility of finding ore bodies similar to the Wasa ore body.

During World War II the Wasa mine produced approximately 60,000 tons of ore.

The Dunkleberg district is in an area underlain principally by sandstones, shales and limestones. Gabbro and diorite sills have intruded some of the sedimentary rocks. Both the sedimentary rocks and sills have been tightly folded into a series of northward plunging anticlines and synclines. The deposits occur chiefly on the flanks and crest of an anticlinal structure known as the Dunkleberg anticline. Both vein and limestone replacement deposits are found within the district. Sphalerite and silver-bearing galena are the principal ore minerals; however, chalcopyrite is present in minor amounts in some of the ores.

The Wasa mine is in the southern part of the district near the axis of the Dunkleberg anticline. The principal structure at the mine is the Wasa-Shamrock fault zone, which was explored under the contract. The fault contains some minor lenses of quartz and sulphides. For the most part, however, the fault itself is but weakly mineralized. The Wasa ore body, from which all past production has come, is in the immediate hanging wall area of the fault.

There is a suggestion that the primary control of the body may be exercised by the intersection of several north striking, nearly vertical, east-dipping faults and fractures with the main Wasa-Shamrock fault. It would be well to note that this concept is different than presented at the start of the contract work. It was believed at that time that the Wasa ore body in the hanging wall of the Wasa-Shamrock fault was formed by the replacement of several thin favorable limestone beds which were tightly folded and broken along the axis of the Dunkleberg anticline.

Because of the marginal grade of the Wasa ore body, it would be of interest only during periods of unusually high prices for zinc.

Walter P. Klugescheid

W. P. Klugescheid

WPK:er 9/3/54
Copy to: Docket
Base Metals
Chron.

☒ Audited

☐ Certified

WORK ANALYSIS SHEET - DMEA PROJECT

Analysis as of 12/1/54.
Incl. Voucher for December 1954.

☒ Actual Cost

☐ Agreed Unit Costs

Name Western Montana Exploration & Development Co.

State Montana

Commodity Lead-zinc

Docket No. DMEA-946X

Idm-E No. 30

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting	2,360'	$67,496.00	1,593.5'	$59,467.16	$67,343.89
Raising	150'	4,687.50	84.5'	4,225.00	4,476.16
Shafts					
Winzes					
Drilling (Specify)					
Surface Excavation					
Underground Excavation					
Roads and Trails		3,300.00		3,277.62	3,277.62
Operating Equipment Purchased		1,300.00		1,300.00	358.00
Surface Rehabilitation & Repairs					
Underground Rehabilitation		7,700.00		6,778.14	7,675.94
New Building, Improvements, etc.		1,366.50		2,559.80	892.52
Other (Specify) See Below		9,300.00		9,298.07	9,298.07
Totals		$85,850.00		$86,905.79	$83,424.13

Other

Supervision	$ 7,871.88
Geologist	1,009.65
Sampling	416.54
	$ 9,298.07

Salvage

Explosives	$ 872.38
Drill Steel	992.08
Mining Cars	2,216.88
Buildings	1,400.32
	$ 5,481.66

Rehabilitation

Timbering	$ 2,660.00
Adit	4,118.14
	6,778.14

Prepared by A. P. Klyscheid

71626

File Copy
Surname
Griswold
J. Johnson

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

DEC 1 5 1955

Mr. Roy W. Key, President
Western Montana Exploration &
Development Company
All Western Bank Building
Missoula, Montana

Re: Docket No. DMEA-946 (Lead-Zinc)
Western Montana Exploration
and Development Company
Granite County, Montana
Contract No. Idm-X30

Dear Mr. Key:

I have your letter of December 12 regarding proposed additional work on the cited property.

The field men were correct in saying that, if additional Defense Minerals Exploration Administration assistance was given for the same mine, any new contract would incorporate the funds previously expended under the DMEA project.

Sincerely yours,

C. R. Christopher (by ESF)
Administrator

MGriswold/cr 12/16/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

Non-ferrous Metal Mining with particular reference to Uranium, Thorium, Indium, Cadmium, Tungsten, Zinc, Lead, Copper, Silver and Gold

411 WESTERN BANK BUILDING
MISSOULA, MONTANA

RECEIVED
DEC 14 1955

OFFICERS

ROY W. KEY
President & Managing Director

OSCAR J. DURAND
Vice President
In Charge of Surface Operations

FRANK M. FISCHER
Director

FRANK EICHELBERGER, Ch.E.
Consulting and Engineer-In-Charge

EDWARD D. DICKERMAN, E.M.
Engineer for Heavy Media Separation

FRANCIS A. HANCOCK, E.M.
Resident Engineer & Secretary

December 12, 1955

Dear Mitt:

Refer: Docket No. DMEA-946X (Lead-zinc)
Granite Co., Montana
Contract IDM-E30

Following up our conversation in April, 1954 regarding the Wasa-Shamrock property in above reference we met with the DMEA Field Team (USGS-USBM) in Spokane during latter part of 1954 and discussed the filing of an application for additional exploratory funds and were told to go ahead and make the application. However, the question was brought up during our conference that if a new loan was granted the Government would probably insist on writing a clause in the new contract to the effect that if we were to be certified as a producer after additional DMEA work we would then become liable for DMEA funds expended during our first contract named above.

Please let me have your opinion on this point at an early date as we may now wish to go ahead with the new application. As you know we have done some work since completing our above contract and have accomplished considerable new geological mapping of the property during summer of 1954 and the report of this mapping is now ready for publication and use.

With the Season's best wishes, I am,

Sincerely,

Roy W. Key

Roy W. Key, (M.D.)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

April 5, 1954

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

Re: Docket No. DMA-~~964~~ 946. X (lead-zinc)
Western Montana Exploration and Development Company (Successor to Key and Durand)
Wasa Mine
Granite County, Montana
Contract No. Idm-E30

Dear Mr. Selfridge:

Enclosed are four copies of a Field Team final report on the captioned exploration project contract written by John S. McNabb, mining engineer, Bureau of Mines, and James J. Quinlan, geologist.

Upon the basis of information previously submitted, the operator was informed by letter from the Administrator's office on September 2, 1953, that the Government does not intend to certify the project as a discovery or development.

Government participation in further exploration at the Wasa mine is not warranted and the Field Team concurs with the recommendation of the Field Team examiners.

By DMEA Field Team, Region II

Reviewed by
DMEA OPERATING COMMITTEE
4-14-54
(date)

Wing G. Agnew
Wing G. Agnew, Acting Exec. Officer
(U. S. Bureau of Mines)

Thor H. Kiilsgaard
Thor H. Kiilsgaard, Acting Member
(U. S. Geological Survey)

Enclosures 4
cc: USBM(2)
Quinlan

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR - 9 1954

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM, REGION II

FINAL REPORT

Contract Idm-E30

by

John S. McNabb
Mining Engineer
U. S. Bureau of Mines

James J. Quinlan
Geologist
U. S. Geological Survey

WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY
SUCCESSOR TO KEY AND DURAND
413 Western Bank Building
Missoula, Montana

Docket No.:	DMA ~~9610~~ 946
Commodity:	Lead-Zinc
Contract date:	June 28, 1951
Completion date:	December 1952

Reviewed by
DMEA OPERATING COMMITTEE
4-14-54
(date)

WASA MINE
Dunkleberg Mining District
Granite County, Montana

Spokane, Washington

March 1954

FINAL REPORT
WESTERN MONTANA EXPLORATION AND DEVELOPMENT COMPANY
SUCCESSOR TO KEY AND DURAND
Wasa Mine
Dunkleberg Mining District
Granite County, Montana

Contract Idm-E30

* * * *

INTRODUCTION

This report describes a lead-zinc exploration project conducted at the Wasa mine, Dunkleberg mining district, Granite County, Montana. The project was conducted under the terms of exploration project contract Idm-E30 by Key and Durand, a limited partnership, and their successor in interest to the property, the Western Montana Exploration and Development Company, with Defense Minerals Exploration Administration assistance.

The Dunkleberg mining district has been described in reports by Pardee 1/, Full 2/, and Popoff 3/. No specific reference will be made in the body of this report to these previous reports. However, the authors wish to acknowledge that they have borrowed freely of information contained in these previous reports and in particular from portions of Popoff's report which deals with Bureau of Mines' exploration at the Wasa mine.

Summary

The project was undertaken to explore the "Wasa-Shamrock ore zone" south of the principal Wasa workings. Trenching and diamond drilling by the Bureau of Mines prior to the contract suggested the presence of one and possibly more zinc ore bodies along this zone, 250 to 850 feet south of these workings. The ore showings uncovered by the Bureau of Mines were reported to compare favorably with the outcrop of the original Wasa ore body from which 50,000 to 60,000 tons of 4.9 percent zinc and 0.3 percent lead ore were mined during World War II. By analogy, it was hoped that a similar ore body or bodies could be found by underground exploration south of the principal Wasa workings.

1/ Pardee, J. T., The Dunkleberg Mining District, Granite County, Montana: USGS Bull. 660g, 1918, pp. 241-247.

2/ Full, R. P., Memorandum on Forest Rose Syndicate, Granite County, Montana: Confidential report for USGS, 1943.

3/ Popoff, C. C., Lead-zinc deposits of the Dunkleberg district, Granite County, Montana: USBM R.I. 5014, 1953.

Under the DMEA program, the "Wasa-Shamrock ore zone" was explored from the Wasa No. 1 level for a distance 850 feet south of the principal workings. Drifting, crosscutting, and raising within the limits of this ore zone disclosed minor amounts of zinc but no commercial ore. This work more than adequately tested the ore zone 200 to 300 feet below the most favorable surface showings and strongly indicates that the structure does not carry commercial concentrations of ore minerals at any great depth below the most favorable surface showings.

Final audit of contract expenditures has been made and accepted by the DMEA. Of the total amount of $85,350 provided for in the contract, the sum of $83,424.13 was accepted as approved expenditures, after crediting sales of equipment, buildings, and supplies. The Government's share of the cost of the project was 50 percent of the total approved expenditures or $41,712.07.

Recommendation

Upon the basis of information previously submitted, the operator was informed by letter from the Administrator's office on September 2, 1953, that the Government does not intend to certify the project as a discovery or development.

Government participation in further exploration at the Wasa mine is not warranted.

LOCATION AND ACCESSIBILITY

The Wasa mine is in the Dunkleberg mining district in the Flint Creek Range of the northern Rocky Mountains; it is west of the Continental Divide and south of the Clark Fork River. The Wasa group of mining claims are in the S½ of sec. 27 and the N½ of sec. 34, T. 9 N., R. 12 W., Montana Principle Meridian, in the northeastern corner of Granite County, Montana. The Wasa mine is about 10 miles southeast of Hall, Montana, a ranching village of about 150 inhabitants on Highway No. 10A near the northern end of the Flint Creek Valley.

The mine is reached by following Highway No. 10A 2 miles south from Hall, and then proceeding eastward on a dirt access road up Douglas Creek for a distance of 8 miles. A branch line of the Northern Pacific Railway runs through Hall, where rail loading facilities are available.

The Dunkleberg district is one of relatively strong relief; most of the mines and prospects are on an elongated, northerly trending upland, known as Dunkleberg Ridge. Altitudes within the area

range from 5,000 to 8,000 feet. Ridge slopes are heavily wooded, with the lower summits being more rocky. The climate of the region is temperate, with wide daily and seasonal temperature variations. Summer and fall are the most pleasant seasons. Winter temperatures of 20 degrees below zero are not uncommon. The first snow usually falls in September but remains on the ground only at higher altitudes. Later snowfalls cover the entire district from November to May. The Wasa mine can be made accessible throughout the winter season by occasional snow removal from the mine access road.

PROPERTY

The Wasa mining property consists of 26 quartz lode, mill site, and tunnel site claims. Nineteen of these claims are owned by the Western Montana Exploration and Development Company and are covered by the exploration project contract. These claims were owned by Key and Durand, a limited partnership, the original operator under the contract. Key and Durand assigned their interest in the property and the contract to the Western Montana Exploration and Development Company in the fall of 1951. The Government consented to the assignment of the contract June 18, 1952. The remaining seven claims are held by the Western Montana Exploration and Development Company under the terms of a lease and option agreement with the estate of James L. Leonard. This agreement was entered into in March 1952, nine months after the contract was signed. The agreement not only provided the company with additional ground but assured them of definite rights in certain claims covered in the contract but which were found to be in conflict with claims owned by the Leonard estate. When the contract was negotiated, the Government was not fully aware of the conflict.

Few of the early-day workings at the Wasa mine are now accessible, but most of the recent workings are open for inspection. The mine workings consist of several adits driven east from the northeast side of Douglas Creek, viz., Wasa No. 3 (6,140-foot altitude), Wasa No. 2 (6,100-foot altitude), Zimmer Jack (6,110-foot altitude), and lower Wasa or No. 1 adit (6,020-foot altitude). The combined length of these adits and drifts exceeds 2,500 feet. Other Wasa workings also include more than 1,000 feet of crosscutting and approximately 200 feet of raising. Also a part of the Wasa holdings is the 740-foot Kirkendal adit (6,322-foot altitude) and the 400-foot Keokl adit (6,290-foot altitude).

Surface installations at the property include a combination compressor, blacksmith and warehouse building, a cookhouse, and a four-man capacity bunkhouse.

All underground exploration under the DMEA contract was performed from Wasa No. 1 adit. Active use has not been made of the adit since World War II, and it required 630 feet of rehabilitation at a cost of $2,218.14 at the start of the DMEA program in 1951. Ground conditions are good at the Wasa property and timbering is only necessary in faulted areas. Modified shrinkage stoping with little or no timber was used when the property was last in production. Access to most workings could be gained at a modest expense for rehabilitation and cleanup.

Ventilation of mine workings is provided by a vent fan and tubing. Drainage is by ditches alongside the track in the crosscuts and drifts. Seepage from surface introduces much of the water found in the mine workings.

History and Past Production

The Wasa mine was discovered in 1910. During World War I it was extensively explored by underground openings and diamond drilling; however, no production resulted from this work. After this brief period of activity, the property lay dormant until World War II when it was purchased by the Forest Rose Syndicate of which Mr. James L. Leonard was the principal owner. The Syndicate operated the mine in conjunction with the nearby Forest Rose mine. Ore from both properties was treated in a 100-ton flotation mill at the Forest Rose mine, a mile distant from the Wasa mine. Total production from the Forest Rose Syndicate's operation between 1941 and 1946 is reported at 112,749 tons of ore which represents 97.3 percent of the total recorded crude ore production from the district. Of the total production, it is estimated that about 50 percent of it came from the Wasa mine. This is slightly lower than the figure, "about 80,000 tons", quoted in exhibit A of the contract as having come from the Wasa ore body, but it is believed to be more realistic. The ore from the Wasa is reported to have averaged 4.9 percent zinc and 0.3 percent lead. The Syndicate closed operations almost immediately after removal of the premium price following the war and little ore has been produced in the district since.

From 1946 to 1949 the Bureau of Mines conducted a trenching, diamond drilling, sampling, and mapping program in the district. The DMEA program was undertaken to explore the "Wasa-Shamrock ore zone" south of the Wasa workings which Bureau of Mines trenching and drilling indicated merited further work.

GEOLOGY

The Dunkleberg district is in an area underlain principally by sandstones, shales, and limestones. These rocks vary in age from Pennsylvanian to Upper Cretaceous and are represented by the Quadrant (Pennsylvanian), Phosphoria (Permian), Ellis (Jurassic), Kootenai (Lower Cretaceous), and Colorado (Upper Cretaceous) formations. Gabbro and diorite sills have intruded some of the sedimentary rocks. Both the sedimentary rocks and sills have been tightly folded into a series of northward plunging anticlines and synclines.

The principal base and precious metal deposits of the area are those which constitute the Dunkleberg district. These deposits occur chiefly within sandstones, shales, and limestones of the Kootenai formation on the flanks and crest of an anticlinal structure known as the Dunkleberg anticline. Both vein and limestone replacement deposits are found within the district. Sphalerite and silver-bearing galena are the principal ore minerals; however, chalcopyrite is present in minor amounts in some of the ores.

The Wasa mine is in the southern part of the district near the axis of the Dunkleberg anticline. Rocks exposed in the mine workings are a part of the lower Kootenai formation. It is difficult to distinguish the original character of the rocks because the sediments have been metamorphosed and in places silicified to form a hornfelsic rock. Within the immediate mine area appreciable amounts of disseminated pyrite occur throughout the metamorphosed sediments and weathering of this pyrite has further obscured the original character of the rocks.

The principal structure at the mine is the Wasa-Shamrock fault zone, which was explored under the contract. This fault strikes N. 25° W. and dips 19° to 68° northeast. The principal zone of shearing and brecciation varies in width from about 20 to 60 feet. Displacement along this fault is not known, but presumably it is large. Similar faults in the area are known to have normal displacements of as much as 1,000 feet. This fault zone has been traced only a short distance north of the mine. However, it can be followed in Bureau of Mines trenches for about 2,500 feet south of the mine.

The fault contains some minor lenses of quartz and sulfides. The principal sulfide minerals are pyrite, pyrrhotite, sphalerite, and galena. However, for the most part, the fault itself is but weakly mineralized. This is discussed in detail in sections of this report dealing with Bureau of Mines exploration previous to the DMEA exploration program, structure exposed by the DMEA exploration program, and work completed by the operator after the DMEA exploration program.

The Wasa ore body from which all past production from the property has come is in the immediate hanging wall area of the Wasa-Shamrock fault. Mineralization appears to be controlled by numerous small faults and fractures in the hanging wall of the Wasa-Shamrock fault. There is a suggestion that the primary control of the body may be exercised by the intersection of several north striking, near vertical east-dipping faults and fractures with the main Wasa-Shamrock fault. Several Bureau of Mines diamond drill holes have cut ore minerals in this structure below the Wasa No. 1 level. These holes encountered ore minerals at depth varying from 40 to 200 feet below the Wasa No. 1 level. Ore minerals encountered to a depth of 70 feet can definitely be correlated with the Wasa ore body; however, it is difficult to correlate the deeper ore cut with the principal Wasa ore body without additional information. Because of the marginal grade of the Wasa ore body (4.9 percent zinc and 0.3 percent lead) and the fact that ore would have to be hoisted, this body would be of interest only during periods of unusally high prices for zinc.

It would be well to note that this concept of the Wasa ore body is different than presented at the start of contract work. It was believed at that time that the Wasa ore body in the hanging wall of the Wasa-Shamrock fault was formed by the replacement of several thin favorable limestone beds which were tightly folded and broken along the axis of the Dunkleberg anticline.

Bureau of Mines Exploration Previous to DMEA Program

The Bureau of Mines conducted an exploration project at the property several years prior to the DMEA program. The DMEA project was undertaken to explore an area south of the Wasa workings which Bureau of Mines trenching and diamond drilling indicated merited further work.

Seven trenches across the "Wasa-Shamrock ore zone" traced the zone approximately 2,500 feet south of the principal Wasa workings. Samples taken in these trenches showed the zone to carry small amounts of zinc, lead, silver, and copper. The most promising showings were cut in trench 13 approximately 600 feet south of the Wasa No. 1 adit and 400 feet south of Wasa No. 3 adit workings. Two south-trending gossan zones in the trench contained significant amounts of zinc. Samples across a 10-foot portion of the east gossan outcrop averaged 4.75 percent zinc, whereas samples across the entire 22 feet of the east gossan outcrop averaged 2.70 percent zinc. Samples across 16 feet of the west gossan outcrop averaged 1.88 percent zinc. It is now apparent that these gossans are a part of the principal shear of the Wasa-Shamrock fault. However, when contract work started, they were thought to represent a replacement ore body in thin tightly folded limestone beds along the axis of the Dunkleberg anticline and similar to the Wasa ore body.

Significant amounts of zinc were also found in Bureau of Mines DDH 8A, 300 feet south of the trench. This hole was drilled from the surface on bearing West, inclination 45 degrees to a depth of 430 feet. See Annex II of this report for the Bureau of Mines log of this hole and plate 3 for a geologic cross section through the hole. The most favorable assays from the hole were obtained from the following portions of the core: 135 to 142.2 feet, 2.62 percent zinc; 207.3 to 213.4 feet, 6.17 percent zinc; and 238.8 to 243.8, 3.1 percent zinc. Small amounts of lead, copper, and silver were also present in some portion of the core (see log for details).

THE PROJECT

The project was undertaken to explore the "Wasa-Shamrock ore zone" south of the principal Wasa workings in an area where Bureau of Mines trenching and diamond drilling indicated the possibility of finding ore bodies similar to the Wasa ore body.

The original contract provided $66,500 for extension of the Wasa No. 1 adit level workings into this area. Structural conditions encountered underground were somewhat different than indicated by the Bureau of Mines trenching and diamond drilling and it was, therefore, necessary to interpret the contract rather loosely in order to accomplish the contract objectives. Whereas, the contract provided for 800 feet of drifting on the main structure to intersect the Shamrock ore body (ore exposed in trench 13) and explore the area south of it, as well as an additional 800 feet of crosscutting and drifting for exploration of the Shamrock and other possible ore bodies, it was necessary to interpret this as 300 feet of drifting and lateral work within the "ore zone" and an additional 800 feet of drifting, crosscutting, and lateral work to further explore the "ore zone." In addition, the contract provided funds for rehabilitation of 900 feet of the Wasa No. 1 adit level to allow access to the exploration area, 1,000 feet of diamond drilling for exploration ahead of crosscutting and drifting, and 165 hours of bulldozing for surface exploration. Also, 250 hours of bulldozing was allowed for road cleaning (snow removal). Separate funds were also allowed for supervision and engineering, sampling and assaying, and timbering of the underground workings.

Eight amendments were made to the contract. Amendments No. 1 and No. 5 permitted the hiring of a bookkeeper and geologist for the project. Amendments No. 2, 3, 4, and 6 were made primarily to facilitate work to meet changing operating conditions. Amendment No. 2 permitted the rental of a portable compressor, Amendment No. 3 permitted relocation of a portion of the access road which was subject to heavy drifting snow. It also made the operator responsible for snow removal

and deleted 250 hours of bulldozing in the contract for this purpose. Amendment No. 4 permitted several changes in minor items of work in the contract, construction of a mine building, boarding house and miscellaneous mine fixtures, purchase of four mine cars, and adds a superintendent-engineer to the schedule of labor. Items of work changed were: The amount of timbering provided for in the contract was reduced from 320 to 150 feet, the amount of surface exploration dozing was reduced from 165 hours to 10 hours, and the amount of diamond drilling reduced from 1,000 to 700 feet. Amendment No. 6 extended the time limit of the contract from 12 to 13 months.

Amendment No. 7 was made to provide an additional $19,350 to the contract in order to complete work authorized when original contract funds became exhausted. The amendment specifically provided for advance of the south drift within the "ore zone" 280 feet south to the area of Bureau of Mines DDH 8A; 120 feet of crosscutting east and west in this area; and for 500 feet of diamond drilling in the vicinity of hole 8A. Also, additional funds were allowed for the employment of a part-time consulting geologist, and time to complete the work was extended to 18 months. Amendment No. 8 was made to permit 96 feet of raising to cut ore exposed in hole 8A when it was found that the operator's diamond drilling equipment was inadequate and the position of the workings were such as to not allow the establishment of suitable drill sites to adequately test the area.

Except for a minor amount of dozer trenching in the vicinity of Bureau of Mines trench No. 13, actual exploration was confined to exploration of the "Wasa-Shamrock ore zone" on and from the Wasa No. 1 level. The zone was explored for a distance 350 feet south of the principal Wasa workings. This work entailed the driving of 927 feet of drift, 666.5 feet of crosscuts, and 110 feet (84 feet completed under contract) of raise.

The contract was signed June 28, 1951, and work commenced about July 1, 1951. Work was completed in December 1952.

Discussion of Structure Exposed by the Exploration Program

The geology of the DMEA workings on the Wasa No. 1 adit level is shown on plate 1 of this report.

The Wasa-Shamrock fault strikes N. 25° W. and dips 19° - 68° NE in the Wasa No. 1 adit level workings. The width of the fault appears to be about 25 feet. It appears that this structure is the "ore"-bearing structure exposed in Bureau of Mines trenches No. 13 and 14. It can also be correlated with a very low grade ore-bearing mineral zone in Bureau of Mines DDH 8A. However, the better zinc assays from this hole are in the footwall of the Wasa-Shamrock fault.

The Wasa-Shamrock fault is exposed in the main Wasa No. 1 adit crosscut 595 feet from the portal. Where exposed, it does contain traces of zinc, lead, and copper minerals. However, the significance of this fact appears to have been overlooked when contract work was planned because of the more imposing Wasa ore body in the hanging wall of the fault. It should be recalled that the Wasa ore body strikes north, dips steeply east, and plunges north.

The Wasa-Shamrock fault is well exposed at four places in the DMEA workings. It was first cut in the south lateral 137 feet south of the main adit crosscut (see plate 1). The lateral crosses the shear from hanging to footwall at an oblique angle and is within the shear for about 215 feet. Several small lenses of quartz, pyrite, and sphalerite were exposed in the shear in this section of the lateral. None of these lenses are of sufficient size or grade to be of any economic importance. Attempts were made to have the operator take car samples through this section of the lateral. However, the operator was not interested in obtaining this information and reported the zone was too low grade to be of any interest. It was also inferred that part of the operator's reluctance to take samples could be attributed to the fact that there was a possible cloud to his title to this particular part of the property which was not removed until he leased ~~out~~ the conflicting claims.

Crosscuts were driven from the south lateral at points 390 feet (No. 1 crosscut), 490 feet (No. 2 crosscut), and 640 feet (No. 3 crosscut) south of the main adit crosscut to test the fault. Several small quartz-sulfide lenses were also exposed in the fault in the crosscuts but no commercial ore, although the operator's samples showed several bands approaching or even above ore grade. The crosscuts were sampled by DMEA representatives and this data is shown on plate 2 of this report. Of thirty-seven samples cut in the crosscuts only three assayed better than 4 percent zinc, i.e., 4.1, 4.1, and 4.2 percent. In the No. 1 and No. 2 crosscuts samples were taken across both the north and south walls of the crosscut. Samples from the No. 1 crosscut across an apparent width of 48 feet averaged 1.47 percent zinc and 0.03 percent lead. Samples from the No. 2 crosscut across an apparent width of 35.5 feet average 0.80 percent zinc and 0.03 percent lead. One sample 5 feet across the only lens of sulfide exposed in the No. 3 crosscut assayed 0.9 percent zinc and 0.06 percent lead. Some of the samples taken also contained a few tenths of an ounce of silver.

The operator was advised by DMEA personnel on several occasions that it would be well to follow the hanging wall of the fault and to test the fault and the footwall area by an occasional crosscut. It is believed that such a plan would have better tested the hanging wall area of the ore zone, which is the area in which the Wasa ore body occurs. However, this advice was not followed as the operator

believed that it would be better to drive the lateral in the footwall and crosscut to test the hanging wall. He hoped by this work to find a large ore body which he believed was indicated in the footwall of the Wasa-Shamrock fault by the assays from Bureau of Mines hole 8A.

The DMEA raise to test the indicated footwall ore in Bureau of Mines DDH 8A intersected the hole 100 feet above the Wasa No. 3 adit sill. Fortunately, it cut the hole at the best ore intercept (see plate 3). Ore encountered in the raise was nothing more than two small lenticular shaped pods. These are shown in plan and section on plate 3. It will be noted that the drill hole cut the bodies at a very oblique angle, thus the width as noted in the drill hole is much wider than the true width observed in the raise. Samples cut in the west wall of the raise from 89 to 93 feet assayed no zinc and trace lead; from 93 to 98 feet 0.25 percent zinc and trace lead; and from 98 to 104 feet, 5.2 percent zinc and trace lead.

A small amount of surface trenching was completed in the vicinity of Bureau of Mines trenches 13 and 14 during the project. The two trenches were cleaned and the area north of trench 13 was stripped for about 100 feet. This work better exposed the structure but added little to the knowledge of the deposit.

Work Completed After the DMEA Project

During the early part of the summer of 1953, the Western Montana Exploration and Development Company carried on a modest company exploration program. The program consisted of deepening dozer trench 13 and the area immediately to the north and also trench 14. The two gossans in trench 13 were better exposed and could be traced for about 100 feet to the north of the trench. A sample cut across 12.8 feet of the east or hanging wall gossan assayed 4.6 percent zinc. A sample cut across 11 feet of the west gossan, or footwall gossan, assayed 3.2 percent zinc. Oxidation was prevalent in the deepened trenches but sulfides were present to a much greater degree than before the trenches were deepened.

At the present time the operator is giving some consideration to a plan to open pit this area. Undoubtedly, the trenching has uncovered a small tonnage of 3 to 4 percent zinc material. However, this is a mixture of oxide and sulfide which would be difficult to mill. It should be pointed out that the DMEA workings under this favorable

outcrop show the zone to be low grade at a depth of only 200 feet. The operator believes, however, that this ore correlates with the main Wasa ore body on rake. It should be pointed out that this ore is confined to the principal shear of the Wasa-Shamrock fault, whereas the Wasa ore body is in the hanging wall of the fault. Furthermore, in order to connect this showing with the Wasa ore body, one would have to assume a very flat rake to the ore body which is not indicated in the Wasa workings. The north end of the gossan exposed in the trench is about 300 feet south and only 50 to 60 feet higher than the upper workings on the Wasa ore body. Upon the basis of present knowledge of the deposit, this does not appear to be a valid correlation.

Summary of Factual Data

Work completed under DMEA contract Idm-E30 included the following:

Rehabilitation and cleanup of 630 feet of the Wasa No. 1 adit.

Driving of 927 feet of drift and lateral from Wasa No. 1 adit.

Driving of 666.5 feet of crosscuts and slabbing for turns from Wasa No. 1 adit.

Timbering of drifts and crosscuts (76 sets, 380 feet) in Wasa No. 1 adit.

Driving 110 feet of stull raise from Wasa No. 1 level (84.5 feet completed under the contract).

Construction of 1-5/8 miles of mine access road.

Surface exploration consisting of 1-1/3 months of surface geologic study and a minor amount of bulldozing.

Sample analyses in the amount of $40.25.

New buildings and improvements in the amount of $2,559.80.

Factual Data

In its final amended form the total amount of contract Idm-E30 was $85,850. The sum of $86,905.79 was expended on the exploration project. Equipment salvage amounted to $3,481.66, leaving an expended total of $83,424.13. The Government's share of the cost was on a 50 percent basis, or $41,712.07.

Most of the work performed under the DMEA contract was on an actual cost basis. Consequently, the conversion of project costs to the unit basis represents an approximation of expenses chargeable to individual items. Existing records do not permit an exact distribution of costs on the unit basis. However, the tabulation of unit costs compiled and entered in the annex of this report is considered to present a fairly accurate distribution.

A review of the costs chargeable to the various phases of the program reveals the work could have been performed for considerably less money. The operation was carried out in as efficient a manner as circumstances would permit. The chief contributing factor to the high costs was the operator's inability to provide his share of the expenses when needed. This resulted in an intermittent one-shift operation with the operator often finding it difficult to meet current expenses. Equipment rental costs and other fixed items of expense consequently contributed an excessive proportion of the operating costs. A steady two- or three-shift operation would have resulted in very satisfactory project costs.

Equipment and supplies purchased under the contract have been properly disposed of, and the Government has been reimbursed for its share of the depreciated value of the pertinent items.

Tabulation of Purchased Equipment and Supplies

Item	Original Purchase Price	Salvage Value	DMEA Equity
4 mine cars	$ 1,300.00	$ 942.00	$ 471.00
Miscellaneous buildings	2,559.80	2,267.28	1,133.64
1,000 lbs. dynamite	221.00	221.00	110.50
3,000 feet of fuse	36.90	36.90	18.45
800 No. 6X blasting caps	14.48	14.48	7.24
Total	$ 4,132.18	$ 3,481.66	$ 1,740.83

Conclusion

Work under the DMEA program has tested the "Wasa-Shamrock ore zone" over a length of 850 feet, 200 to 300 feet below the

most favorable surface showings. It has disclosed minor zinc mineralization but no commercial ore. The work also showed that the most favorable ore intercepts in Bureau of Mines DDH 8A were nothing more than small pods or lenses of sulfide minerals.

It is now evident that it would have been best to have confined the DMEA work more to the hanging wall area of the Wasa-Shamrock fault, as that is the area in which the Wasa ore body occurs. When this suggestion was made to the operator during the life of the contract, he did not believe it worthwhile. He believed that the best ore intercepts in Bureau of Mines DDH 8A indicated an ore body in the footwall of the fault. At that time, however, there was insufficient evidence to dispute this contention and the operator was allowed to continue work toward the target indicated in hole 8A, after early work showed the ore in trench 13 did not extend to depth.

It is conceivable that all of the Wasa-Shamrock fault zone was not intersected by the DMEA crosscuts or that a parallel shear zone may exist east of the Wasa-Shamrock fault zone, along which ore bodies similar to the Wasa could be found. It should be pointed out, however, that the DMEA crosscuts driven to explore the immediate hanging wall area of the Wasa-Shamrock fault for ore bodies similar to the Wasa ore body are believed adequate to test the immediate hanging wall area, but it would be possible to test the hanging wall area further to the east by diamond drilling from the DMEA workings. Such exploration would be more or less of a wild cat nature as there are no definite ore targets involved, and in our opinion the chances of finding any ore body of significance are considered too remote to justify Government participation.

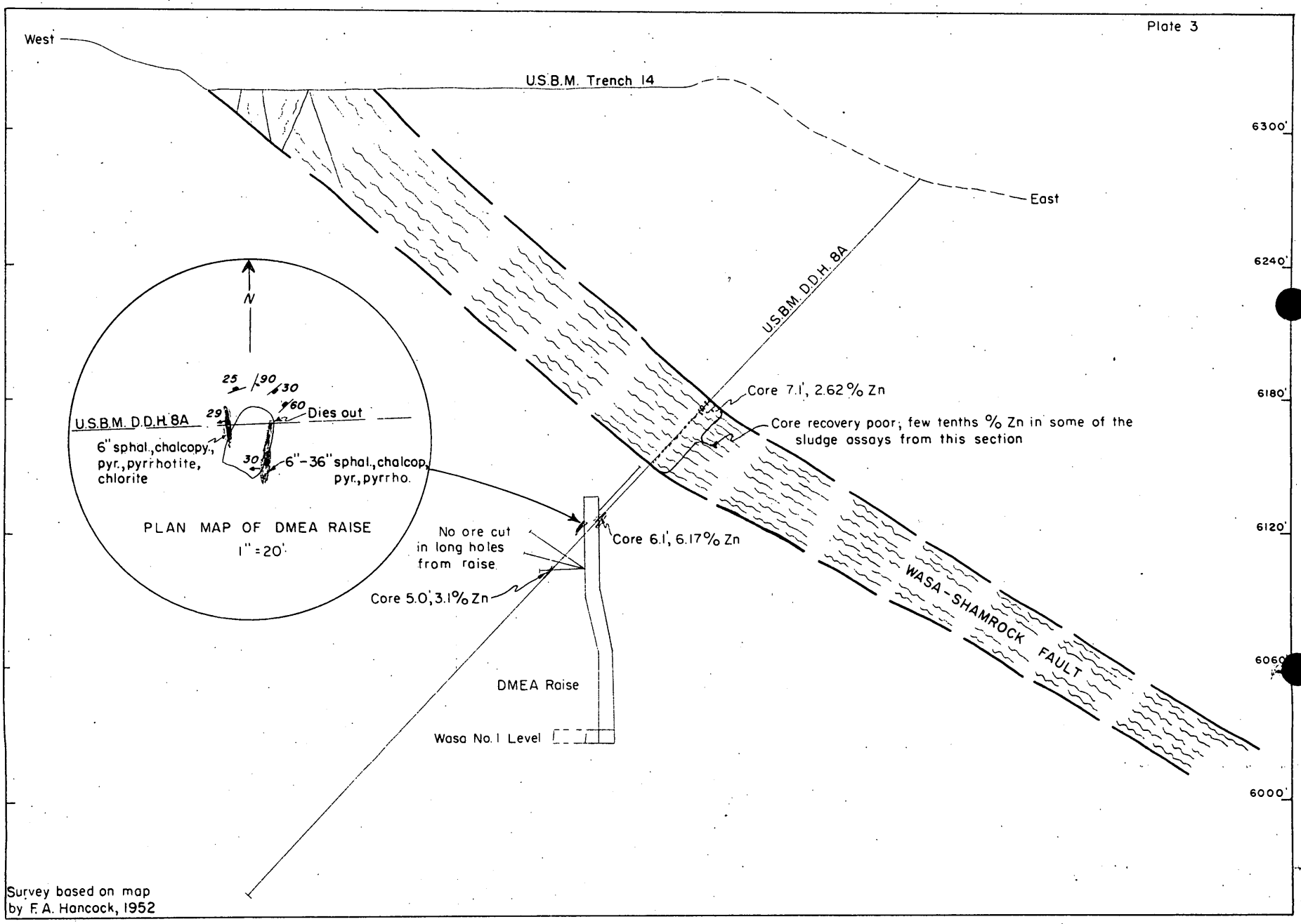
The Bureau of Mines diamond drilling to test the main Wasa ore body at depth has shown it to continue to a depth of 70 feet and possibly to a depth of 200 feet below the Wasa No. 1 adit level. Undoubtedly, additional exploration could be undertaken to further test this body at depth by mine openings. However, the marginal grade of the body (4.9 percent zinc and 0.3 percent lead) and the fact that ore would have to be hoisted makes this body of interest only during periods of unusually high prices for zinc. For this reason, exploration of the Wasa ore body at depth at this time is not considered warranted.

Enclosure 4
Distribution:
DMEA(4) Docket
USBM(5) Quinlan
USGS(SRO)

ANNEX I

Summary of Factual Data

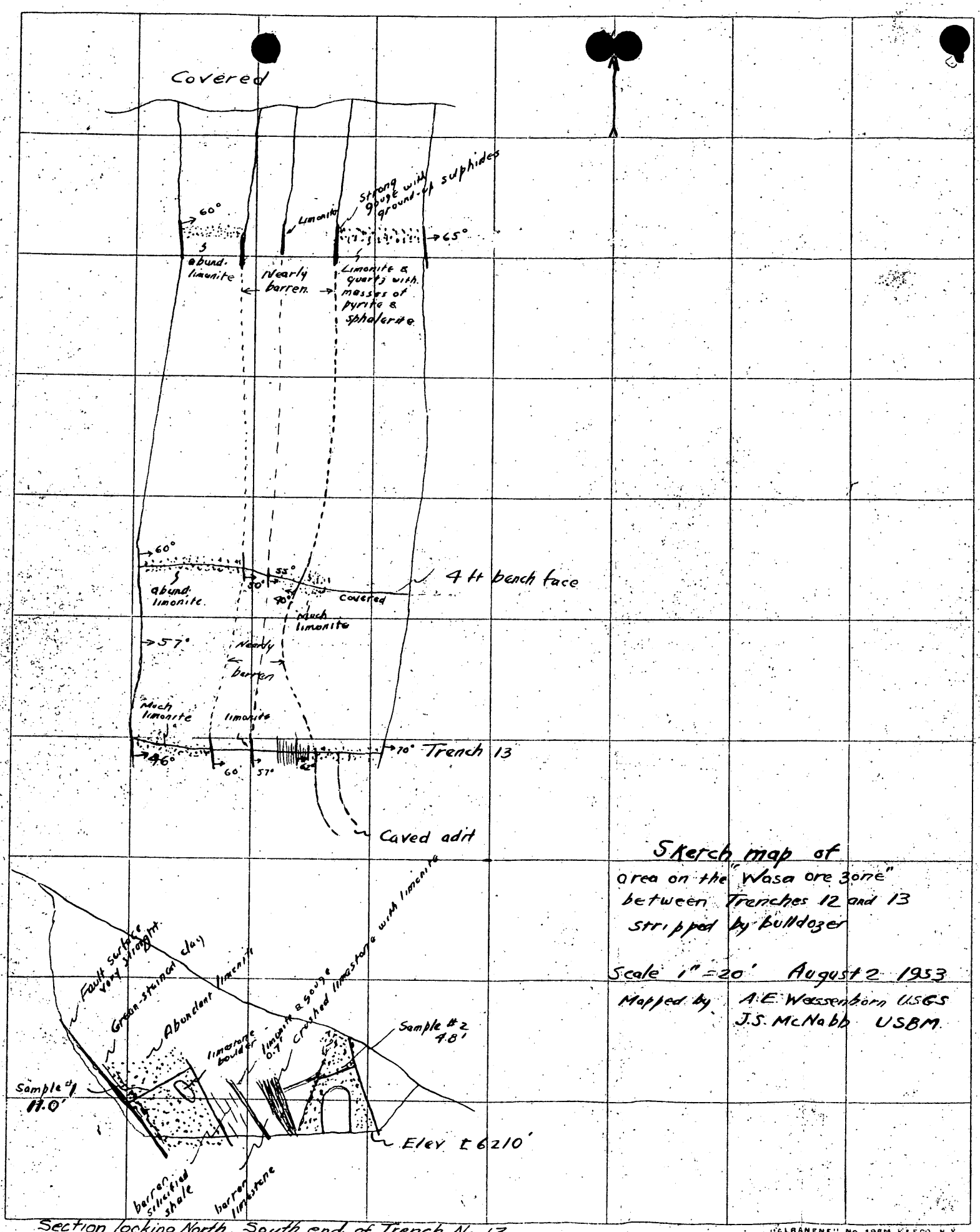
Items of Cost	Units Completed	Total Cost	Cost/unit
Rehabilitation and cleanup of lower Wasa Adit (Wasa No. 3)	630.0 feet	$ 4,118.14	$ 6.54
Laterals and drifts on Wasa No. 3 level	927.0 feet	38,065.62	41.06
Crosscuts and slabbing for turns (Wasa No. 3)	666.5 feet	27,366.45	41.06
Timbering of workings on Wasa No. 3 level	380.0 feet (76 sets)	2,660.00	7.00
Stull raise from Wasa No. 3 level	84.5 feet	4,225.00	50.00
Access road construction	1-5/8 miles	3,277.62	2,023.22
Sampling and assaying	--	40.25	--
Surface mapping and exploration by consulting geologist and assistant	1-1/3 mos.	1,111.25	835.53
New buildings and improvements (18' x 40' mine building and others)	1 Job	2,559.80	2,559.80
Total		$83,424.13	



CROSS SECTION – U.S.B.M. DIAMOND DRILL HOLE 8A, WESTERN MONTANA EXPLORATION CO., WASA MINE

Dunkleberg Mining District, Granite County, Montana

1" = 60'



Sketch map of area on the "Wasa ore zone" between Trenches 12 and 13 stripped by bulldozer

Scale 1" = 20' August 2 1953

Mapped by A.E. Weissenborn USGS
J.S. McNabb USBM

Section looking North, South end of Trench No. 13

"ALBANENE" No. 195M K&E CO., N.Y. REG. U.S. PAT. OFF

FILE COPY
SURNAME:

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

MAR 5 1954

Mr. Roy W. Key, President
Western Montana Exploration &
Development Company
412 Western Bank Building
Missoula, Montana

Dear Mr. Key:

Reference is made to your letter dated February 18, enclosing material pertinent to your application with the Small Business Administration for a loan on your Wasa-Shamrock property. You explain that you have been advised that the SBA does not have mining engineers on its staff and you have, therefore, forwarded the enclosures to me on the assumption that DMEA might be called upon to review the merits of your application.

It is not probable that the SBA would refer your application to me for comment, since they do, in fact, have a mining engineer employed for that purpose and he frequently contacts the DMEA for docket information relating to projects under their consideration. We are always glad to cooperate with the representatives of the SBA, and you may be assured we will do so in any discussion of your pending application.

I am returning the material which you submitted because I am sure it can be made available through the SBA.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

Enclosures

WRGriswold/COMittendorf/bjl/fw-3/2/54

cc: Docket
Admr R.File
Base Metals

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

500

February 25, 1954

Memorandum

To: Administrator

From: Chief, Base Metals Division

Subject: Western Montana Exploration & Development Company

This project, DMEA-946, was not certified. The work done under the contract, according to the Field, showed only sporadic and very low-grade zinc mineralization. A study of the maps seems to bear this out. I went over it the other day with an engineer from SBA, and it looked next to worthless, at least as far as any results which were secured by the DMEA work.

W R Griswold

W. R. Griswold

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.
412 WESTERN BANK BUILDING
MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE
OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
R. ALLEN McGREW,
C.P.A. SECRETARY

February 18, 1954

Dear Charlie:

Refer to DMEA 946X - I-DMA-E30

On January 25, 1954, this small corporation filed a rather well documentated application with Small Business Administration for a direct assistance of $150,000.00 credit toward the construction of a modern sink float (HMS) selective flotation mill, estimated to cost a total of $251,000.00, on our Wasa-Shamrock property, near Hall, Granite County, Montana. We discussed this loan in person with A. W. Carlson, Regional Director for SBA this area, on January 18, 1954. The application was filed in triplicate at SBA office for Montana at Helena, Montana, on date mentioned above.

We have been advised that our application to SBA went almost at once to the SBA headquarters in the Lafayette Building, Washington D.C., where it is now being considered. We are also advised the SBA does not have at this time mining engineers to advise them on the merits of our request and that our application would likely be sent to you (DMEA) for apprasial. Therefore, am enclosing to you the attached reports, map and photographs to bring you up to date in as much as our DMEA contract was completed sometime in December, 1952, and we have accomplished much since that time.

Please look this data over and be prepared to comment if and when SBA calls for your advice. We would specifically call your attention to the following points listed herewith:

1. There has been some $321,038.00 expended on Wasa-Shamrock since McKeever Brother started their 15 diamond drill holes in 1915-16.

2. We secured the services of Frank Eichelberger as consulting engineer shortly after completion of the DMEA contract.

3. During the spring and summer we did considerable surface stripping to show up sulphide ore enough to cause Mr. Eichelberger to recommend open pit mining for at least 400,000 tons.

4. It has been determined that Wasa-Shamrock ore is amenable to sink float (HMS) as mentioned in Mr. Hancock's report attached.

5. That zinc concentrates from Wasa-Shamrock contain enough cadmium, tungsten and manganese to make such concentrates attractive to the Anaconda people here nearby in Montana.

6. The report of USBM Project No. 15-197 has now been published (December 1953) and a copy is enclosed herewith - Report of Investigations 5014 by C. C. Popoff.

7. That values indicated by USBM diamond drill core assays, Mr. Hancock's sampling and Mr. Eichelberger's estimates closely parallel regardless of sampling done in our crosscuts 1-2-3 by Spokane office of USGS during our DMEA exploratory contract.

8. That a mill such as indicated above is now justified, and can be made to pay its way at the same time further developing this great Wasa-Shamrock mineralized zone.

9. That we are basing all our estimates on the Wasa-Shamrock ground, taking into no consideration the Homestake vein which is some 1300 feet east of Shamrock vein and roughly parallel to it. There has been little or no work done on Homestake vein other than USBM transverse trenches and diamond drill holes which apparently passed under the ore body.

10. That in open pit mining the Shamrock ground we are extremely fortunate in being able to work up the nose of the Dunkleberg anticline, rather than down the nose underground as was done at Forest Rose mine north of us on the same anticline.

Please be so kind as to help us if SBA does call on you. If necessary, both Mr. Eichelberger and I can come to Washington to go over this in person.

Sincerely,

Roy W. Key

Roy W. Key

Mr. C. O. Mittendorf, Director
Defense Minerals Exploration Administration
Washington 25, D.C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 24 1953

August 17, 1953

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

Re: Docket No. DMEA-946 (Lead-Zinc)
Western Montana Exploration
& Development Company
Granite County, Montana
Contract No. Idm-E30

Dear Mr. Selfridge:

Reference is made to your letter of August 10, 1953, in which you refer to the Field Team's final report on the captioned contract, and in which you ask for our recommendations as to certification.

The Field Team's final report is not being worked on at this time. The heavy work load of our short-handed staff necessitates that all available time be given to currently active contracts and to applications. We hope to resume the writing of final reports during the coming fall but will probably be unable to do so before that time.

Project work under the subject contract was successful in finding some zinc mineralization. Reference to our field examiner's inspection reports discloses that these mineralized areas are sporadic and the grade very low. It is believed that none of the mineralization found by the exploration project could be classed as commercial ore at either the current market price or at prices substantially higher. The Field Team therefore recommends that no certification of discovery be made to the Operator.

The Operator has submitted his final report and accounting and the final audit of the Operator's accounts has been made and his offer for machinery in which the Government has an equity has been accepted by the Executive Officer. Final payment to the Operator has been made, and with the exception of the Field Team's final report, we now consider the contract as closed.

By DMEA Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

Thomas E. Howard

Thomas E. Howard, Acting Member
(U. S. Bureau of Mines

cc: USBM (2)
Quinlan

500 CB

Griswold
Selfridge
Fleisman
Mattendorf

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

AUG 1 0 1953

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 946 (Lead-Zinc)
Western Montana Exploration
and Development Company
Granite County, Montana
Contract Idm-E30

Dear Mr. Weissenborn:

Referring to above completed project, we have received the final audit report and the final operator's report, but we are lacking the final report of the Field Team.

Will you kindly let us have this as soon as possible with, of course, your recommendations as to certification.

Sincerely yours,

George C. Selfridge
ES7
Chairman, Operating Committee

APPROVED:

J. H. Hedges
ES7
Member, Bureau of Mines

A. E. Kinkel, Jr.
ES7
Member, Geological Survey

WRGriswold/hmj
(8/4/53)
CC to: Docket
Adm. R. File
Operating Committee
Base Metals Division
Mr. Kinkel
Mr. Bishop
Chron.

MBB 8-10-53

E. D. Talbert

Defense Minerals Exploration Admin.

14X3923.970 Working Fund,

DMEA

July 24, 1953

Western Montana Exploration and
Development Company
413 Montana Building
Missoula, Montana

Reurtel July 24, letter of July 20, 1953, to Spokane authorized release of final audit report.

SIGNED
E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/ama
July 24, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

1201

(53)

W. P. MARSHALL, PRESIDENT

SYMBOLS

DL=Day Letter

NL=Night Letter

LT=Int'l Letter Telegram

VLT=Int'l Victory Ltr.

1953 JUL 24 PM 1 00

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

WP032 PD=MISSOULA MONT 24 1010AM=

EFENSE MINERALS EXPLORATION ADMIN,

ATTN C O MITTENDORF DIREST=DEPT OF THE INTERIOR=

REFER DMEA1 946X IDM= E30 PLEASE EXPEDITE FINAL AUDIT THIS PROJECT NOW IN YOUR OFFICE. NEED FINAL SETTLEMENT FUNDS TO PAY PHILIPSBURG BANK.

=KEY WESTERN MONTANA EXPLORATION & DEVELOPMENT CO=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

FILE COPY
SURNAME:
BOC

Chambers

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

JUL 20 1953

Mr. Robert L. Hull
DMA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Idm-130, DMA-964X
Western Montana Exploration
and Development Company

Dear Mr. Hull:

Reference is made to your transmittal letter of July 15, 1953, submitting copies of the Audit Reports and Certificates for the above-cited contract.

The corrected Certificate and Report have been accepted by this office and may be distributed in the usual manner.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
July 20, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

R.C.H.
7-20-53

FILE COPY
SURNAME:
800

Chamber

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

JUL 7 1953

Mr. Robert E. Hull
DMA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Ida-130, DMA-564X
Western Montana Exploration
and Development Company
(Key-Durand)

Dear Mr. Hull:

Reference is made to your letter of transmittal under date of June 22, 1953, and the accompanying Audit Report of June 18, 1953, of the above-cited contract.

I am returning your Audit Certificates and Reports for certain corrections and changes as follows:

Page 5, Item (4) Operating Equipment. The Air Compressor in the amount of $165.00 and the D-6 Caterpillar in the amount of $2,288.00 apparently should be reported under Depreciation. Depreciation, you will recall, pertains to amount allowed for the use of owner-operated equipment.

Page 6. Dates should be December 1951 and January 1952, rather than December 1952 and January 1953.

Page 7, Item (5) Initial Rehabilitation and Repairs. No underground work should be classified as Initial Rehabilitation and Repairs. This item pertains solely to repairs and rehabilitation of buildings, installations, etc., above ground. The $1,900.00 worth of materials reported under this item should be reported under Materials and Supplies.

Page 10. The item of $1,900.00 which the operator reported under Contingencies should have been reported under Materials and Supplies as stated above.

Page 12. You have five items classified as allowable maximums, only one of which was actually an allowable maximum. The allowable maximums in this contract were (a) $1,500.00 for consulting geologist by Amendments Nos. 5 and 7, (b) $2,000.00 for bulldozing by Amendment No. 3, (c) $15,600.00 for additional drifting by Amendment No. 7, and (d) $3,000.00 for raising by Amendment No. 8. Under the old contract the rates for labor and supervision were maximums by the contract. Other items become maximums only if specified in the exhibits or by amendments.

Apparently it will not be necessary to change the Audit Certificate but it will be necessary to change the Audit Report in accordance with instructions above. However, I am returning the Audit Certificate along with the Report in order that they may be kept together.

The Audit Certificate and Audit Report covering Contract Idm-E177, Docket No. DTA-652, South Mountain Mining Company, as submitted by your explanatory letter of June 29, 1953 has been accepted and may be distributed in the normal manner.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

Enclosure

JLChambers/ub
July 7, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
~~Sec. 157 Howard Street~~
Spokane 4, Washington

June 15, 1953

Mr. N. J. Hindman
Certifying Officer, Region II
1201 North Division
Spokane, Washington

Re: Docket No. DMEA-46X (lead-zinc)
Key Durand property
Contract Idm-530

Dear Mr. Hindman:

This is to inform you that all work under the subject contract has been completed to the satisfaction of the Government and that a full and final accounting of operations as presented by the Operator is considered acceptable to this office. A final report evaluating results of the work completed under the contract also has been presented and accepted as satisfactory.

The Operator has made the following offer for machinery used by the project in which the Government has an equity:

4 mine cars	[illegible]
Buildings	[illegible]
1,000 lbs. dynamite	221.00
3,000 ft. of fuse	36.[illegible]
300 blasting caps	14.48
Total	$ 3,481.6[illegible]

Government participation in the above total at 50 percent amounts to $1,740.83. This amount is satisfactory to the Executive Officer and it is recommended that it be deleted from funds due the Operator and that the Operator's account be closed.

A final audit of the Operator's account has been made by DMEA auditors and it is therefore recommended that the Operator's account be closed as quickly as possible.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: DMEA (2)
USBM (2)
Quinlan
A. Hull, Auditor
Cont. Adm. & Aud. Div., Wash., D. C.

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

June 16, 195[illegible]

[illegible]
[illegible] Exploration Development Co., Inc.
[illegible] Building
[illegible]

Re: Rocket [illegible] A-1163
(Lead-Zinc)
Contract No. [illegible]-30

Dear Mr. [illegible]:

Reference is made to your letter of [illegible] 16, 1953, relative to the disposition of the jointly-owned [illegible], and equipment covered under Contract No. [illegible]-30.

The Government hereby [illegible] Exploration Development Co.'s [illegible], which is as

[illegible] cars	$ 912.00
[illegible]	2,267.20
1,[illegible] [illegible]	221.00
3,[illegible] [illegible]	30.00
[illegible]	12.18

[illegible] $3,[illegible] [illegible] Government [illegible] $1,[illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible]

[illegible]
[illegible]
[illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

Howard
Keating
Betty

June 10, 1953

Dr. Roy W. Key
Western Montana Exploration and
Development Company
412 Western Bank Building
Missoula, Montana

Re: Docket No. DMEA-946X (lead-zinc)
Contract No. Idm-830

Dear Dr. Key:

In order to make final settlement of subject contract it will be necessary that you arrange disposition of the jointly-owned property and equipment acquired under Contract Idm-830. The Government's equity is in the 4 mine cars which were purchased for $1,300.00, the mine buildings with an original value of $2,559.80, and assorted mine supplies as set forth in the inventory of December 31, 1952, with an original value of $524.64. It appears that the Government has no equity in the compressor, loader, or the generator for the reason that these pieces were obtained on a rental basis with an option to purchase which was not exercised.

The Government is willing to waive its equity in the mine supplies with the exception of the approximately 1,000 pounds of dynamite which remains. We understand that you are planning further work at the mine and wish to retain the dynamite, the mine cars, and the mine buildings for use in operating the property. This could be done by obtaining bona fide bids on these items and topping the best offer. In lieu of this you could offer the OPS ceiling price of $942.00 for the mine cars, which would be acceptable even though the OPS prices are no longer in effect. A fair price for the buildings would be something more than the salvage value. As the dynamite in no way should be impaired we feel that we should receive essentially the new price.

If you bid, and it is accepted, the Government's equity will be deducted from the amount due you from the Government and will enable us to close the account.

Your prompt attention to this matter will be greatly appreciated.

By DMEA Field Team, Region II

cc: DMEA (2)
USBM (2)
R. M. Hull, Auditor, USBM
Contr. Adm. & Aud. Div., Wash., D. C.

M. E. Weissenborn, Exec. Officer (USGS)

M. F. Volin, Member (USBM)

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

[illegible] Howard Street
Spokane 4, Washington

[illegible]

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

Re: Docket No. [illegible]-40 (Lead-Zinc),
Western Montana Exploration [illegible]
Granite County, Montana
Contract Idm-[illegible]

Dear Mr. Selfridge:

Enclosed are the original and two copies of the Western Montana Exploration and Development Company's final report on the captioned project. One copy of the report has been retained for our files.

The report contains two sections. One section, prepared by [illegible] Hemlock, presents a cost analysis of the work. The other section, prepared by Albert [illegible] Stockham, is to serve as a geologic report on the project. Both sections of the reports are considered inadequate but acceptable as it is believed that the report was prepared to the best of the operator's ability. The costs presented in the Hemlock section of the report are subject to final audit.

By [illegible] Field Team, Region [illegible]

[illegible], Acting Executive Officer
(U. S. Bureau of Mines)

[illegible] Regional Director
(U. S. Geological Survey)

Enclosure
[illegible]
[illegible]

WESTERN MONTANA EXPLORATION
& DEVELOPMENT CO. INC.
412 WESTERN BANK BLDG.
MISSOULA, MONTANA, DMEA-946X,
I-DMA-E30, DMPA-2461

April 29, 1953

Project No. DMA-946-X, I-DM-E30

Dear Al:

Herewith is transmitted reports as indicated by Francis A. Hancock and Albert R. Clockzin. These reports, we hope, will suffice as final remarks on our DMEA contract, number of which is stated above. Mr. Hancock has signed his report but Professor Clockzin is out of town for a week or so, but I assure you we are sending a true and correct copy of Al's report.

In Clockzin's report he brings up the point of ore found in Raise No. 1 at D. D. [illegible] as being either metasomatic or fissure filling - it would be our feeling that these ore indications are fissure fillings between planes of the two fine limestone formations cut in crosscut E No. 3, in the south drift and the easterly most one which we followed for some 146 feet to point of Raise No. 1. In fact, if I were to do any further work on present level I should strongly urge a drift to be put in heading due west from site of start of Raise No. 1. I feel very strongly the two fine grain limestone formations mentioned above are very important regarding the control of ore depositions in Shamrock ground and we intend to someday go ahead and further explore these "beds" (?). However, our next work will be to drive a drift southward from Trench No. 12½, which is approximately 100 feet north of Trench 13 and about 20 feet lower in elevation, along foot wall into the Shamrock ground to at least Trench No. 14, at which point we will cross cut a short distance to the east and then can connect with our Raise No. 1. This maneuver will tell us a lot about the Shamrock ground as well as give us better ventilation and more safety to the lower Wasa No. 3 level. Incidently, it was my idea from the start to drive the above drift instead of going south from lower Wasa No. 3 level, but I got side-tracked somewhere along the line. We are [illegible] ready to start Trench 12½ southward drift about 15, May coming.

Mr. Frank Eichelberger is in Denver now but will return to Spokane on or about 3, May and plans to come over here about 5, May - do hope you can come along with Eichelberger; we want to show you some real indications for a large mine and there will be plenty of geology for you to whet your wits on - come on over and see what we have - we will feed you bear meat stewed in "Mountain Dew". Mr. Durand has the D-6 Caterpillar dozer at the workings now - plowing out roads and freeing more important trenches of snow so you and Frank Eichelberger can get a good look-see.

Respectfully,

Roy W. Key

Roy W. Key

Mr. D. E. Weissenborn, Executive Officer
DMEA Field Team Region II
U. S. Geological Survey
157 South Howard Street
Spokane, Washington

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APR 29 1953
U. S. G. S.
SPOKANE, WASH.

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Summary Geologic Report on the Wasa-Shamrock Ore Body

by

Albert R. Glockzin

April 18, 1953

OPERATORS
FINAL REPORT

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STRATIGRAPHIC CONSIDERATIONS

The upper Paleozoic and Mesozoic stratigraphic section in the vicinity of the Nasa-Shamrock ore body consists of the Madison, Amsden, Quadrant, Phosphoria, Ellis, Kootenai and Colorado formations. The currently observable ores are entirely within the Kootenai formation. Some of the ore is metasomatically associated with the Lower Limestones of the Kootenai. Thus, the continuity of these Limestones is of utmost importance in predicting the probable southern extension of the ore body.

Kootenai Formation

Owing to the fact that the Kootenai at the mine is metamorphosed and intensely disturbed structurally, two sections of the formation were measured. One composite generalized section was obtained along Gird Creek, four miles west-southwest of the mine, and in the vicinity of Mt. Princeton, four miles southwest of the mine. The other section was measured about 10 miles to the northwest along the facies strike in the vicinity of Kulky Gulch.

Kulky Gulch Section: Thickness

8 - Upper Shale unit eroded.

7 - Gastropod or Upper Limestone, poorly fossiliferous, only the lower few feet exposed.

6 - Shale, grey, red, maroon, green, few thin sandstone and siltstone beds, few limestone lenses and nodular layers, limestone locally crystalline. 600'

5 - Lower Limestone, locally well bedded, dark grey to black, dense, with interbedded shales. 200'

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4 - Shale, red, grey, etc. like unit 6.	200'
3 - Shale, red, grey, with interbedded siltstones. 10' bed of sandstone at the top and bottom.	60'
2 - Shale, grey, olive, with interbedded siltstone.	75'
1 - Conglomerate and pebbly sandstone.	10'
Total thickness from base of Gastropod Ls.	1145'

Gird Creek - Mt. Princeton Section:

8 - Shales, red to black, with some sandstone.	100'
7 - Gastropod Limestone, with much interbedded shale.	200'
6 - Shale, red, green, maroon, with some interbedded flaggy sandstone, very little limestone lenses and nodules.	700'
5 - Lower Limestone, lenticular, nodular, poorly bedded, discontinuous.	15'-
4, 3, 2 - Shale, red, green, maroon, with interbedded siltstone and sandstone, very few limestone stringers and nodules.	400'
1 - Conglomerate and pebbly sandstone.	15'
Total thickness -	1430'
Total thickness from base of Gastropod Ls. -	1130'

It will be noted that the stratigraphic interval from the base of the Gastropod Limestone to the base of the formation at the two localities is almost identical, that the formation is more calcareous and less clastic to the northwest and less calcareous and more clastic southeast along the facies strike, and that the Lower Limestone looses its continuity and is locally absent.

Metamorphism of the Kootenai

The ore body is stratigraphically associated with the Lower Limestone unit and the shales above and below. In the vicinity of

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the mine the Kootenai shales have been metamorphosed to hornfels and the limestone to silicated marble. The paucity of marble and the over-abundance of hornfels further attests to the decrease of lime content along the regional facies strike in this area.

Locally some of the Limestone has been so intensely silicified that it possesses physical characteristics very similar to the hornfels and in this case can only be recognized by its effervescence. Bedding planes and joints have been healed by the metamorphism, the rocks have been made much more competent and hence have been very intensely fractured. Thus, it is practically impossible to determine the attitude of the bedding planes in the Kootenai. Furthermore, it is suspected that the silicification of the limestones may have locally been so intense that carbon dioxide has been lost, complex calcium rich silicates formed and mixed with hornfelsized argillaceous material.

Near the middle of the south drift extended (see last monthly progress map) the hornfels contain metamorphosed lime nodules a few inches in diameter which are shot through with pyrrhotite and little chalcopyrite and sphalerite. The selective replacement of the limestone lenses and nodules is typical of that portion of the mineralization which is attributable to metasomatism of the limestones.

It is concluded that that portion of the total mineralization caused by metasomatism of the limestones is only in small amount, and that ores of this origin will decrease in quantity to the south.

IGNEOUS RELATIONS

Three and one-half miles due south of the mine is a stock-like

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body of granitic material which was clled Granite by Emmons and Calkins[1]. However, upon examination with the hand lens it is obvious that the ratio of orthoclase to plagioclase is about 1 to 2.2 and this together with the abundant quartz classifies the rock as a granodiorite. Since the sedimentary beds stike nearly north-south metamorphism and mineralization seem to have spread north-south rather than across the bedding by east-west fracture control. Granodiorite is a favorable parent igneous material for ore mineralization and its presence at depth below the Kasa-Shamrock ore body is most probable.

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Possibility of Ores at Depth

Contact metasomatic ores may occur at depth. In the Ellis formation about 300' below the Kootenai are several thin crystalline limestones which may be mineralized. However, the top of the thick Madison limestone is only about 700' stratigraphically below the Kootenai and is the best possibility relative to deep mineralization.

Inferences from the Gossans

Even though the depth of oxidation is very shallow the vein outcrops are almost completely oxidized, there being only a few small concentrations of relict sulphides. These local concentrations together with zinc sulphate unleached remnants account for the few assays from the gossans which show zinc in quantities greater than one percent.

The gangue in the gossans in mainly quartz which possesses the

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Emmons, W.H. and Calkins, F.C., 1913; geology and Ore Deposits of the Philipsburg Quadrangle, Montana; U.S.G.S. Prof. Paper 78, 271 pp.

appearance of the typical fissure filling type. The gangue is generally inert and the voids produced by sulphide leaching and oxidation are empty and the limonite has been transported. Owing to the presence of local concentrations of porphyroblastic pyrite in the hornfels and some micro-porphyroblastic feldspar, the gangue locally is reactive giving rise to boxworks with indigenuous limonite. Though few in number some of the boxworks show faint vestiges of the fine cellular to cellular sponge types so characteristic of sphalerite. However, the major point here to be emphasized is the paucity of both the voids produced in inert gangue and the boxworks produced in the moderately reactive gangue. Therefore, at the present level of erosion within the Shamrock ore body, very little sphalerite was originally deposited.

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SUMMARY OF STRUCTURE

It is thought that structural control of mineralization is dominant, that most of the bodies are fault-fissure fillings, and that metasomatism of the limestone is minor.

The total structural analysis indicates that the Kootenai section in the vicinity of the Kasa-Shamrock ore body was:

1. Anticlinally folded.
2. Tilted, thus producing northward plunge.
3. Overturned and isoclinally tightened by back thrusting from the east.
4. Folded into an eastward concave recess relative to the Philipsburg overthrust (or a westward convex salient relative to the back thrusting).
5. Torn by the East Gossan Fault Zone (and probably other faults)

accompanied by some strike slip so that the northeast block moved southeast.

6. The hanging wall block(s) fractured nearly vertically thus producing the fissures for the emplacement of the mined out portion of the Wasa ore body.

7. Throughout the above the structure was metamorphosed, wrinkled, crinkled, shattered and literally shredded thus producing a structural knot capable of receiving mineralization.

The writer has presented a summary of his conclusions as of July 10, 1952 in a report entitled "Progress Report No. 1 on the Geologic Analysis of the Wasa-Shamrock Ore Bodies" which contains and enclosed map illustrating the structural concepts. Since that date the writer has visited the property six times, three each in July and August of 1952. Since July 10, 1952 the following recommendations then submitted have been accomplished:

1. That the south drift be continued to a point near coordinates 9000E and 8900N, a distance of about 280' and bearing S20E. From this point, according to the dictates of the geological picture, 120' of east or west crosscutting or raising is to be recommended at the appropriate time. Raising was recommended, 100' having been completed prior to the winter shutdown.

2. 85' of the 500' of diamond drill hole recommended, this being accomplished from the top of the raise.

Since July 10, 1952 the following recommendations then submitted have not been accomplished:

1. Detailed mapping at a scale of 20' per inch of all existing underground workings of the Wasa Mine.

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2. A 50 foot horizontal diamond drill hole bearing S70W from the end of the No. 1 cross cut west.

3. 4.5' of diamond drill hole in a series of short holes from the underground workings in the vicinity of Hole 8A and in the vicinity of the three east cross cuts, the latter to test the theory of intersectional ores.

The exploration in the south drift extended and in the raise from its southern extremity accomplished since July 10, 1952 has not changed the structural opinions of the writer as recorded in the First Progress Report. The additional data obtained is insufficient to confirm, deny, augment or revise the structural conclusions previously expressed.

The vertical fracture and/or fault zones which occur in the middle of the No. 3 cross cut east(see maps previously referenced) were encountered in the south drift extended within 15' of their predicted position. The last one encountered is the stronger, strikes N10E, dips 80W, exhibits dip slip as indicated by slickensides and appears to have been normal. It is well marked by a strong wall and by sticky fibrous gouge throughout the entire drifted distance of 140'. No mineralization was encountered. In a S10W direction at a distance of about 150' it should intersect the West Gossan fault Zone with ore shoot relations. This is the only major structural feature revealed by the last explorational phase.

After the writers last visit to the property and immediately prior to the winter shutdown, he was informed that the last round blasted in the raise encountered bore hole 8A and revealed 3' of hard ore. The attitude of this ore is unknown. If the concept of

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fault-fissure filling in the hanging wall block of the West Gossan Fault Zone is tenable, this ore should continue to the south and become richer as the West Gossan Fault Zone is approached. If this ore is metasomatic and approximately parallels the West Gossan Fault Zone, its southern continuity is questioned.

SUMMARY

If the ore in hole 8A and encountered at the top of the raise is metasomatic, it is predicted that the southward extension of the ore will be discontinuous.

If the ore is of the fissure filling type, it is predicted that the southward extension of the body will be continuous.

It is recommended that this body be drifted upon to the southward as soon as possible. This final exploration should prove or disprove the possibility of the mine at this level.

It is predicted that an ore shoot exists at the intersection or adjoinment of the West and East Gossan Fault Zones as indicated on the map enclosed with the First Progress Report. This shoot should be explored by the appropriately located underground bore holes.

After the attitude of the ore revealed at the top of the raise is determined, the body should be projected toward possible intersections and probed with bore holes for possible ore shoots.

Deep development and exploration should be curtailed until all possiblities have been exhausted withing the present levels.

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FINAL REPORT & COST SHEETS

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC

PROJECT NO. DMA-946X I-DMA-E30

By Francis A. Hancock

Francis A. Hancock
Mining Engineer

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WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC PROJECT NO. DMA-946X-I-DMA-E30

FINAL REPORT

In submitting a final report on this project the writer has prepared a complete cost sheet, showing distribution of all the money expended from the time Dr. Roy W. Key, of Missoula, took over control of the property from Mr. Oscar J. Durand of Hall, Montana.

This cost sheet includes expenditures not covered under the DMA contract participation, but for our own record it was deemed advisable to show the total amount of money spent.

From this distribution of the cost, the items in which the Government participated can readily be ascertained by checking with the monthly reports submitted under the DMA contract. Our distribution of costs do not conform altogether with the monthly reports submitted, due to the fact that we endeavored to keep an accurate cost of the various phases of the work being done, and therefore, it was necessary to show more items on our distribution.

In commenting on the cost of the work accomplished on this project, it seems only fair to state that the cost was in most cases far too high. This was due to several causes, which stated briefly were lack of accommodations to house a sufficient number of men to work more than one eight hour shift in the mine; excessively high rental paid for mining equipment; inadequate equipment to do the work economically.

The sum of $6000.00 was requested for housing and camp facilities in the original application for a DMA loan contract, which would have provided proper and comfortable living and boarding conditions for an adequate crew of men for a three shift per day operation in the mine and thereby reduced the cost considerably.

In submitting the cost of $26.00 per foot for drifting and crosscutting an error was made in stating that it included rental of equipment. The writer worked out this figure, and it included the cost of labor, supplies, explosives, diesel fuel, rails, ties, pipe, etc., but not equipment rental because it was assumed that the partnership or company would supply it through ownership.

A jumbo for the drifter drill would have saved considerable money over drilling drift rounds with the stoper drill. Only short rounds was possible with the stoper drill. Only short rounds was possible with the stoper, and the breakage of drill steel was excessive in the hard rock encountered.

Mucking was slow due to having to use a horse to pull the cars in and out of the mine, and switch the loads and empty cars by hand tramming. A mancha Little Trammer would have reduced the cost of mine haulage by at least 50%.

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A summary of the actual work accomplished during the period under review is best obtained from the cost sheet which is made a part of this report. In additions another sheet is appended showing the cost per foot of the main items comprising the cost of drifting, crosscutting, raising and drilling four long holes from the No. 1 Raise. These data are best shown in tabulated form rather than described in the body of this report.

While no attempt is made to apportion all items of the cost distribution to each individual piece of work accomplished, sufficient detail is shown to make a reasonable deduction possible.

A statement showing the money spent on the project by Dr. Roy W. Key previous to the DMA contract participation is also appended, but this amount is included in the various items on the complete cost sheet.

As this is not a technical mining report on the property, but rather a summary of the work done and cost of same, further comment is not considered necessary.

In conclusion: It is the writer's considered opinion that the project is uncompleted in that from the work accomplished no definite conclusion can be formed relative to the Shamrock ore body.

The conditions found in the work done underground do not coincide with the expectations predicated in the US Bureau of Mines report by Mr. Popoff. Of course, this is not unusual in mining, especially so, considering the complex geological conditions extant on the property, and we still think that Mr. Popoff and the U. S. Bureau of Mines did excellent work.

Now that a better study of the geology underground can be made, further work is indicated to definitely find the extension, both horizontally and vertically, of the ore encountered in the several diamond drill holes. Also to follow by drifting the ore cut in Nos. 1, w, and 3 Crosscuts east. This ore found in the crosscuts may prove to be the downward extension of the first ore encountered in U. S. Bureau of Mines drill hole No. 8A.

Several up-raises at different points in the south drift and crosscuts are recommended to follow this ore up along the fault planes on which it occurs.

While the ore so far encountered underground is of low grade and of doubtful commercial value at the present price of 11 cents per pound for zinc, the mine should not be condemned on this account, as most large ore bodies are low grade, and the time will come when this ore will be needed in our economy.

Our recent preliminary heavy media test on a general mine sample of the ore lends considerable encouragement for a cheap milling

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process of heavy media followed by flotation for which the details, flow sheet and costs are now being worked out.

In this writer's opinion, based on a lifetime spent in operating mines, both large and small, over the country, when the Shamrock ore body is fully explored and developed a large tonnage of ore averaging at least 5% zinc will result, and a profitable operation become possible. This prediction is based on close observation and study of the conditions extant on the property, and the type of sulphide ore found. The Wasa is not the only ore body in such a long mineralized zone.

Respectfully submitted,

Francis A. Hancock

Francis A. Hancock
Mining Engineer

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KEY-DURAND & WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
PROJECT NO. D.M.A. -946X -I-DMA-E30
COST SHEET OF OPERATION NOVEMBER 1, 1950 to JANUARY 8, 1953

Description of Account	
Preliminary Investigation & Examination of Property and expense obtaining D.M.A.E. exploration contract	$ 704.12
Re-locating Mining Claims	349.95
Expense pertaining to production contract	30.92
Property Account - Lease Wasa Claims	203.00
Hauling & Moving Mining Machinery & Equipment	1,976.35
Preparation & Rehabilitation Lower Wasa No. 3 Level	3,122.65
Surface Stripping and Trenching on Outcrops (bulldozing)	4,058.80
Labor driving 666.5 feet Cross Cuts (contract and day work)	7,342.15
Labor driving 927.0 feet Drifting (contract and day work)	10,277.49
Labor driving 113.0 feet No. 1 Raise (contract and day work)	2,049.76
Labor making room and drilling 4 long Holes (106 feet total)	360.00
Timbering & Repairs Main Adit Tunnel	412.15
Installing & changing Mine Air and Water Lines	347.75
Mine Ventilation: Installation & Cost Vent Tubing, etc.	827.16
Mine Surface Light Wiring (Labor & Material)	52.19
Mining Equipment Rental	15,321.14
Mining Equipment Depreciation Dr. Key Equipment	3,338.45
Mining Equipment Repairs	875.03
Mining Equipment Purchased (Cars, air receivers, etc.)	2,378.54
Small Tools & Equipment Purchased	289.74
Mining Supplies (Explosives, timber, ties, steel, etc.)	7,358.71
Pipe, fittings, valves, Rails, switches, etc. Purchased	1,810.49
Air Compressor & Power Unit Operation & Maintenance	2,589.68

Mine Haulage: Care of Horse, clean tracks & ditch, Bulldoze dump, etc.	$ 2,652.06
Sharpening Tools: Drills, Bits, picks, etc.	1,081.24
Transportation: Hauling Supplies, trips to Mine etc.	2,667.64
General Camp Maintenance: Watchman, cut wood, care of bldgs.	1,805.05
Roads: New Road Construction	3,085.62
Roads: Maintenance and Snow Removal	1,395.34
New Mine Shop Construction, inc. wiring, lights, etc.	1,770.29
Camp Buildings, Improvements & Construction B. House & Bunk hse.	1,592.33
Clearing Mill Building Site	1,111.25
Power Line Survey (Montana Power Co.)	506.43
Assaying	202.87
General Supervision and Shift Bossing	4,144.23
Engineering: Surveying, Maps, etc.	1,560.35
Geological Survey of Mine & Property (inc. trenching, etc.)	3,499.74
Office: Mine & Missoula-Labor, supplies, rent, postage, etc.	3,768.96
Office Equipment Purchased (Adding machine, table, desk, etc.)	225.02
Administration Expense: Trips Missoula Office, etc.	1,176.67
Travel Expense	1,036.59
Tel. and Tel.	146.57
Payroll Taxes	4,432.35
Property Taxes, Granite County	125.83
Mill Flotation Tests on Ore	904.20
Industrial Accident Board, Safety Inspection	5.00
Legal Services	283 .20
Bank Interest on Loans	91.42
Furniture and Fixtures	106.45
Boarding House Equipment	186.51

 Cost sheet of Operation November 1, 1950 to January 8, 1953

Boarding House Labor Cooking		$ 3,330.72
Boarding House Supplies		3,254.00
Commissary Account: (deducted on payrolls)		301.00
Expense Setting up Corporation (W.M.E. & L.C., Inc.)		1,220.91
Expense Advertising & Photos for Corporation		403.95
	TOTAL	$114,128.01
Less Inventory Mining Supplies on hand	$ 524.64	
Less Payroll Board deductions	4,695.25	
Less Payroll Commissary deductions	301.00	
		5,520.89
		$108,607.12

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Certified Correct:
Francis N. Hallcock

STATEMENT SHOWING COST PER FOOT OF THE MAIN ITEMS CHARGED FOR DRIFTING, CROSSCUTTING, RAISING AND DRILLING LONG HOLES

ITEMS CHARGED TO WORK	TOTAL COST CHG'D	COST PER FOOT
Labor driving 285.0 ft 5'x7' Drift (Timbered)		$12.8300
Labor driving 642.0 ft. 5'x7' Drift (without timber)	$10,277.49	10.3130
Labor driving 98.5 ft. 5'x7' Crosscuts (timbered)		16.1076
Labor driving 568.0 ft. 5'x7' Crosscuts (without timber)	7,342.15	10.1330
Average Cost per foot Drifting & Crosscutting		11.0572
Labor driving 113.0 ft. 4'x8' No. 1 Raise (timbered)	2,049.76	18.14
Labor making room for set-up and drilling 106 feet in four long holes	360.00	3.40
Mining Supplies: explosives, track ties, lumber, timber, drill steel, bits, etc.	6,814.07	3.993
Mining Equipment rental	15,321.14	8.978
Mining Equipment Depreciation (Dr. Key Equipment)	3,338.45	1.956
Mining Equipment Repairs	873.03	.5115
Pipe, fittings, valves, rails etc. (Depreciation basis)	1,810.49	.212
Mine Air and Water lines: Changing & Installation	347.75	.203
Mine Ventilation: Installation & Cost Vent tubing	827.16	.4848
Air Compressor & Power Unit: Operation & Maintenance	2,589.68	1.5175
Mine Haulage: Care of horse, clean tracks, level dump, etc.	2,652.06	1.554
Sharpening Tools: Drills, Bits, Picks, saws, axes, etc.	1,081.24	.6336
Transportation: Hauling Supplies, trips to mine, etc.	2,667.64	1.563
General Camp Maintenance: Watchman, Care of Bldgs., cutting, wood for fuel, snow removal, etc.	1,805.05	1.058
Assaying	202.87	.119
General Supervision & Shift Bossing (75% amount chg'd)	3,108.17	1.82

page 2 Statement Showing Cost Per Foot of the Main Items Charged for Drifting, Crosscutting, Raising and Drilling Long Holes (cont'd):

ITEMS CHARGED TO WORK	TOTAL COST CHG'D	COST PER FOOT
Engineering: Surveying, mapping, etc. (75% amount chg'd)	$ 1,170.25	$ .685
Office Expense (Mine Only) Labor and supplies	1,910.16	1.12
Total Cost per foot, Drifting, Crosscutting, Raising and Long holes	$66,548.61	$36.7165
Less Equipment Rental and Depreciation		10.9340
NET COST		$25.7825

NOTE:

The Crosscuts were first driven without timber, then when the ground started to slough and cave, due to water in the ore zones, it was necessary to drill and blast to make room to stand timbers. This accounts for the higher cost of timbered crosscuts.

The cost of the No. 1 Raise is higher than estimated due to the fact that the Raise encountered diamond drill hole No. 8A from which a heavy flow of water gushed, amking it extremely difficult to work there and slowed progress considerably.

General Supervision & Shift Bossing and Engineering are apportioned on the basis of 75% of total cost in the above because the other 25% rightly belongs to the outside or surface activity.

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Certified Correct:
Francis H. Hancock

KEY-DURAND LEAD-ZINC MINE
COST SHEET-EXPENSE BY ROY W. KEY BEFORE D.M.A. PARTICIPATION
NOVEMBER, 1950 to JUNE 28, 1951

Description		
Preliminary Investigation of Property & Expense obtaining D.M.A. Loan		$ 704.12
Sampling & Shipping Ore to Am. Cy. Co. for Mill Test		300.14
Re-locating Mining Claims		349.95
Sampling & Assaying		17.50
Repairing Cabin for living quarters		197.99
Repairing Mine Building for shop		113.60
Moving Machinery & Equipment to Mine (inc. tractor rental)		1,244.41
Transportation: Hauling Supplies, trips to mine, etc.		325.78
Furniture & Fixtures		14.65
Small Tools & Equipment		25.60
Boarding House Equipment		38.09
Boarding House Supplies		143.19
Boarding House Labor (Cook: [illegible]ng)		24.00
Office Supplies		2.15
Surface Trenching & Stripping on Outcrops & Trench #14-$13		3,661.87
Payroll Taxes	$16.21, $29.46	45.67
Rehabilitation Lower Wasa No. 3 Level		191.30
Travel Expense: Roy W. Key trips to mine, etc.		116.30
	TOTAL	$7,516.31

Correct:
J.N.H.

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J.Chambers/FILE COPY-53
SURNAME:

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

cc: Docket
Admr. Reading File
Region II
Operating Committee
Messrs. Hedges, Kinkel, Grimsrud, Selfridge
Chambers, Hull

Chambers
Martin
Kirkpatrick
Johnson
Johnson
Mettenberg

MAY 21 1953

Mr. J. E. Weissenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-[illegible] (Lead-Zinc)
Exploration Contract No. [illegible]
Western Montana Exploration and
Development Company
(Kay-Barnard)

Dear Mr. Weissenborn:

Mr. Jay L. Chambers, Chief, Contract Administration and Audit Division, has referred to the Operating Committee your memorandum of May 7, 1953, to Mr. Robert H. Hull, DMEA Auditor, in regard to Amendment No. 8 of the above-cited contract. Mr. Chambers states that Amendment No. 8 was not justified sufficiently to allow payment for the work billed thereunder by the Operator, but also states that he referred the matter to Mr. Hull with the request that he consult with the Field Team for the purpose of getting a clearer justification.

Two points concern the Audit Division as follows: (1) The Amendment appears to have been created after the work was done; and (2) The Amendment was made to an "allowable maximum" item. The delegated authority to the Field Team making amendments specifically excludes amendments changing "allowable maximum" items without the approval of the Administration. One of the duties of the Audit Division is to call attention of items of this nature to the Field Team so that they may have an opportunity of correcting them in cases where the correction is both just and fair to the Operator.

The Audit Division is of the opinion that the justification outlined by you in your memorandum referred to above, is sufficient to allow the auditor to pass favorably upon reimbursing the Operator for this expenditure provided the Operating Committee approve the amendment, thereby removing any question which might be raised by the General Accounting Office should they decide to audit this particular account in the future. This letter is to approve your action and therefore should be made a part of the files of the contract.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

S.N. 5-26-53

APPROVED:

J. H. Hedges
Member, Bureau of Mines

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

May 7, 1953

Memorandum

To: Mr. Robert M. Hull, DMEA Auditor

From: DMEA Field Team, Region II

Subject: Docket No. DMEA-946, Western Montana Exploration and Development Co., Inc. (Key-Durand), Contract Idm-E30.

Reference is made to your memorandum of May 4 in which you state that Mr. Chambers has ruled that "unless the Field Team can show that it authorized the substitution of raising for drilling prior to the actual date of such work, a disallowance will have to be made."

When you previously brought this matter to my attention following receipt of Mr. Chambers' previous letter, I told you that the Field Team preferred to wait until we had further advice from the Operating Committee on this matter. The fact is that we have not been advised by the Operating Committee that there was any difficulty and as this is a new problem, we thought that we could make a better reply if we had a full explanation from the Operating Committee and perhaps the Legal Division as to just what the problem was. However, I will be glad to review the situation herewith.

The matter of raising versus diamond drilling was discussed on a number of occasions with the Operator of the property. The Field Team preferred to drill because we believe that by the same expenditure of money, considerably more information might be obtained; at least a greater stretch of ground could be tested than by raising. The Operator, however, preferred to raise feeling that if he could actually open up the ore found in the old Bureau of Mines drill hole on the property, he would get more information. Meanwhile, drifting then in progress followed a structure to a point underneath the location of the ore in the old Bureau of Mines diamond drill hole instead of to one side, as had been anticipated. Diamond drilling would have required a crosscut in order to have gotten sufficient distance from the ore found in the drill hole to intersect it in any reasonable angle. Furthermore, the Operator who, when the work was planned, had had in his possession certain equipment necessary for the drilling no longer was able to retain this equipment and had returned it. These facts favored the Operator's plan of raising rather than diamond drilling, but we hesitated to grant permission because we did not believe that there was enough money left in the contract to permit the raise to be completed. After further discussion with the

Operator, we did agree to allow him to accomplish his objective by raising rather than drilling provided that he would agree to complete the raise at his own expense if funds in the contract were insufficient to cover the cost of raising; and it was on this basis that Amendment 8 was authorized. These negotiations were carried on mostly in telephone conversations with the Operator and by our men in the field, and there is, of course, no written record of these conversations. However, although the amendment was not written until after the raise had been started, we were aware of the Operator's intentions and had agreed that we would authorize the driving of the raise under certain conditions to which the Operator subsequently agreed.

I trust that this will straighten out this matter and permit payment of the remaining amount due the Western Montana Exploration and Development Co., Inc.

A statement of the costs of raising, the items of work performed, claimed, and paid for under Amendment 8 requested in Mr. Chambers' letter has already been furnished you.

By DMEA Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

M. E. Volin

M. E. Volin, Member
(U. S. Bureau of Mines)

cc: USBM (2)

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

MAY 2 0 1953

Mr. Robert N. Hull
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

AIR MAIL

Re: Contract No. Idm-130
Docket No. DMEA-945
Western Montana Exploration
and Development Co., Inc.
(Key-Durand)

Dear Mr. Hull:

Reference is made to your letter of May 15, 1953, re Amendment No. 8 of the above-cited project.

It appears to me that the field team has justified Amendment No. 8 in the third paragraph of the memorandum to you dated May 7, 1953. For this reason I am requesting the Operating Committee to approve Amendment No. 8 so that there will not be any question of the allowance of the expenditures thereunder. I have reason to believe that the Operating Committee will accept my recommendation and approve Amendment No. 8 but I advise that you not take final action on it until you receive information from Mr. Weissenborn that the Committee has made the approval. For your advance information I am sending you a copy of a letter which I prepared for the Operating Committee's signature.

In regard to your second letter of May 15, 1953, re equipment with the above-cited project, it appears that the Government has no equity in the compressor, loader or the generator for the reason that these pieces of equipment were obtained on a rental basis with an option to purchase which was not exercised. It is my understanding that these three equipment items have been returned to the vendor. It appears that we do have an equity in the mine cars, mine buildings and the mine supplies.

You also raise the question whether the Government should pay its share of the rental of certain items when the operator had not actually paid the vendor for the rentals. You have evidence that the operator incurred these expenditures. Article 11 of the contract itself provides that the Government will furnish its share of the costs on the basis of "allowable costs incurred". Therefore, such items should be allowed in the audit.

If I have not answered your questions fully or if you have other points to raise, I shall be glad to hear from you.

May I take this opportunity of saying that you have done a very fine job on this account.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb 5-20-53

cc: Docket
Admr. Reading File
Mr. Chambers

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
MAY 18 1953

1201 N. Division St.
Spokane 2, Washington
May 15, 1953

VIA AIR MAIL

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Subject: Docket No. DMEA 946 (lead-zinc)
Contract Idm-E30
Western Montana Exploration and
Development Co., Inc. (Key-Durand)

Dear Mr. Chambers:

Reference is made to my memorandum of May 4, 1953, to the DMEA Field Team, Region II, on the above-cited contract, a copy of which was forwarded to you. I am enclosing the reply from the Field Team for your information.

When the final audit report is prepared on this project a disallowance will have to be made for the work done under Amendment No. 8 unless the Field Team's memorandum is considered adequate to show that they authorized the substitution of raising for drilling prior to the actual date of such work.

I will appreciate any comments you may care to make.

Sincerely yours,

Robert M. Hull

Robert M. Hull
DMEA Auditor

Enclosures:
Memo from F.T. dtd 5/5/53
Memo from F.T. dtd 5/7/53

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

Spokane, Washington
May 5, 1953

MEMORANDUM

To: Robert M. Hull, DMEA Auditor

From: DMEA Field Team, Region II

Subject: Docket DMEA 946 (lead-zinc)
Contract Idm-E30
Western Montana Exploration and Development Co., Inc.
(Key-Durand)

Your memorandum of May 4, 1953, asked for a statement from the Field Team outlining the work done under Amendment No. 8 to the subject contract and its dollar value.

According to our records, the items of work performed, claimed, and paid under Amendment No. 8 are as listed below:

	Feet	Claimed	Paid
Sept. 1952 - MF-104			
Making room for upraise, day work, mucking by hand		175.24	175.24
Oct. MF-104 - raising	35.5	3546.27	none
Nov. MF-104 - raising	49.0	2865.54	none
Dec. MF-104 - raising	28.5	2309.72	none
Feet	113.0		
Claimed but unpaid		$8896.77	
Paid			$175.24

By Field Team, Region II

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer

M. E. Volin

M. E. Volin, Member

C
O
P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

May 7, 1953

Memorandum

To: Mr. Robert M. Hull, DMEA Auditor

From: DMEA Field Team, Region II

Subject: Docket No. DMEA-946, Western Montana Exploration and Development Co., Inc. (Key-Durand), Contract Idm-E30.

Reference is made to your memorandum of May 4 in which you state that Mr. Chambers has ruled that "unless the Field Team can show that it authorized the substitution of rainsing for drilling prior to the actual date of such work, a disallowance will have to be made."

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accomplish his objective by raising rather than drilling provided that he would agree to complete the raise at his own expense if funds in the contract were insufficient to cover the cost of raising; and it was on this basis that Amendment 8 was authorized. These negotiations were carried on mostly in telephone conversations with the Operator any by our men in the field, and there is, or course, no written record of these conversations. However, although the amendment was not written until after the raise had been started, we were aware of the Operator's intentions and had agreed that we would authorize the driving of the raise under certain conditions to which the Operator subsequently agreed.

I trust that this will straighten out this matter and permit payment of the remaining amount due the Western Montana Exploration and Development Co., Inc.

A statement of the costs of raising, the items of work performed, claimed, and paid for under Amendment 8 requested in Mr. Chambers' letter has already been furnished you.

By DMEA Field Team, Region II

s/ A. E. Weissenborn
A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

s/ M. E. Volin
M. E. Volin, Member
(U. S. Bureau of Mines)

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.

412 WESTERN BANK BUILDING
MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
B. ALLEN McGREW,
C.P.A. SECRETARY

Gruswald
Keating
Betty

May 9, 1953

Mr. M. E. Volin, Acting Exec. Officer
Field Team, Region II
U. S. Bureau of Mines
1201 N. Division Street
Spokane, Washington

Subject: Docket No. DMEA 946X (lead-zinc)
Contract Idm-E30

Dear Mr. Volin:

Complying with request in your letter of May 8th, addressed to Dr. Key, we enclose herewith our copies of the Rental Agreement made with the Miller Machinery Co. of Missoula, Covering the rental of the following equipment:

Worthington 315 Cu. ft. portable Air Compressor
Eimco 12-B Mine Car Loader
20 KW Diesel-Electric Generator Set

For your information we wish to advise that the company was in arrear in their rental payments and therefore the Miller Machinery Company repossessed the equipment on September 1, 1952.

Please return these agreements to us when you are through with them.

Very truly yours

Western Montana Exploration
& Development Co., Inc.
By Francis A. Hancock,
Mining Engineer

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 22 1953

FAH:vnb

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

Spokane, Washington
May 8, 1953

Roy W. Key, M. D.
Western Montana Exploration & Development Co.
412 Western Bank Building
Missoula, Montana

Subject: Docket No. DMEA 946X (lead-zinc)
Contract Idm-230

Dear Dr. Key:

As a result of discussions with you at Missoula, Montana, on April 11, 1953 Mr. John McNabb, Bureau of Mines engineer, wrote a memorandum to the Field Team, Region II, recommending an arrangement for determination of the Government's equity in certain equipment to which the Government contributed payments under a rental-purchase agreement under the subject contract, namely,

Worthington 315 cu. ft. portable compressor
Eimco 12-B mine car loader
20 KW Diesel generator set

The existence of this rental-purchase contract was not previously known to the DMEA Field Team. A copy of the contract (or copies if more than one contract) is required at this time to complete our information leading to a settlement of your DMEA project. It will be very helpful to us if you will send us at once either a typewritten copy or a photostat copy or such other copy as you can obtain from the Miller Machinery Co. of the rental-purchase agreement, showing the wording on both sides of each sheet.

by Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)

N. E. Volin, Acting Exec. Officer
U. S. Bureau of Mines
1201 N. Division St.

Harold Kirkemo
for: A. E. Weissenborn
U. S. Geological Survey
157 South Howard Street

SERVING:
MINING - MILLING
CONTRACTING - SAWMILLS
LOGGING INDUSTRIES

MILLER MACHINERY CO.
(INCORPORATED)

P. O. BOX 1496
PHONE 9-2309
HIGHWAY 93-S
MISSOULA, MONTANA

Wash

April 29, 1953

Executive Officer
D.M.E.A.
Region II
S. 157 Howard Street
Spokane, Washington

Gentlemen:

In order to clarify any existing doubt relative to the status of the equipment, mainly the 20 KW Diesel Generator Set, the 315 Cu. Ft. Worthington Portable Compressor, and the 12-B Eimco Mine Car Loader, which the Western Montana Exploration & Development Co., successors to Key-Durand Mining Co., had on rental from us during the life of the D.M.E.A. contract between the above mining firm and the D.M.E.A., we wish to advise that whereas an option to purchase the equipment under our usual option terms was extended to this firm it was never exercised, nor was any indication given that the equipment would be purchased under the option during the term of contract or at the expiration of the contract.

These three items of equipment were picked up and returned to our stock due to the fact that rental payments were in arrears and also because of the indication that the development work would cease because of weather conditions.

A detailed statement of the account is not presented, because we believe it will serve no particular purpose for the records. However, it is available for examination, should you desire.

Very truly yours,

MILLER MACHINERY COMPANY

D. V. Scott

DVS/dp

Do You Wish to Acquire or Dispose of: Crushers, Ball Mills, Hoists, Screens, Engines, Generators, Sawmills, Electric Motors, Motor Control, Pumping, Conveying, Belting, Transmission Equipment, Power Shovels, Tractors, Tractor Attachments, Loaders, Mixers, Concrete Equipment, Wire Rope?

MACHINERY RENTAL

SERVING:
MINING - MILLING
CONTRACTING - SAWMILLS
LOGGING INDUSTRIES

MILLER MACHINERY CO.
(INCORPORATED)

P. O. BOX 1496
PHONE 9-2309
HIGHWAY 93-S
MISSOULA, MONTANA

Wood

May 4, 1953

M. E. Volin
Acting Executive Officer
DMEA Field Team, Region II
1201 N. Division St.
Spokane 2, Washington

Gentlemen:

We wish to acknowledge receipt of and thank you for your letter of April 30, 1952.

In replying to the request in the second paragraph of your letter, we set forth the following:

Item	Original Sales Price
Worthington 315 Cu. Ft. Portable Compressor	$7200.00
Eimco 12-B Mine Car Loader	2957.00
20 KW Diesel Generator Set	2250.00

The question relative to the estimated present sales value of each item is academic, for the reason that the compressor and the Eimco mine car loader have been sold, and also because of the fact that the option to purchase was never exercised. The diesel generator set is still in our stock, upon which a sales price of $2250.00 still obtains.

We enclose herewith a transcript of the rental account of the Western Montana Exploration & Development Co. which sets forth rental charges and credits.

We trust the above will be of some assistance to you.

Very truly yours,
MILLER MACHINERY COMPANY

D. V. Scott

DVS/dp
Enc.

Do You Wish to Acquire or Dispose of: Crushers, Ball Mills, Hoists, Screens, Engines, Generators, Sawmills, Electric Motors, Motor Control, Pumping, Conveying, Belting, Transmission Equipment, Power Shovels, Tractors, Tractor Attachments, Loaders, Mixers, Concrete Equipment, Wire Rope?

MACHINERY RENTAL

TRANSCRIPT OF RENTAL ACCOUNT

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO.

Date	Inv. No.	Item	For Period	Chgs.	Credits	Bal.
8/1/51	4587	Compressor	7/26 - 8/1	69.00		69.00
8/1/51	4588	Generator	7/26 - 8/1	37.50		106.50
8/1/51	4576	Eimco Loader	7/23 - 8/1	66.64		173.14
8/24/51	4576-1	Eimco Loader	8/1 - 9/1	250.00		423.14
8/25/51	4588-1	Generator	8/1 - 9/1	225.00		648.14
8/25/51	4587-1	Compressor	8/1 - 9/1	414.00		1062.14
9/4/51					1062.14	.00
9/27/51	4587-2	Compressor	9/1 - 10/1	414.00		414.00
9/27/51	4576-2	Eimco Loader	9/1 - 10/1	250.00		664.00
9/27/51	4588-2	Generator	9/1 - 10/1	225.00		889.00
10/29/51	4587-3	Compressor	10/1 - 11/1	414.00		1303.00
10/29/51	4576-3	Eimco Loader	10/1 - 11/1	250.00		1553.00
10/29/51	4588-3	Generator	10/1 - 11/1	225.00		1778.00
11/10/51					1000.00	778.00
11/28/51	4587-4	Compressor	11/1 - 12/1	414.00		1192.00
11/28/51	4576-4	Eimco Loader	11/1 - 12/1	250.00		1442.00
11/28/51	4588-4	Generator	11/1 - 12/1	225.00		1667.00
12/27/51	4588-5	Generator	12/1 - 1/1	225.00		1892.00
12/27/51	4587-5	Compressor	12/1 - 1/1	414.00		2306.00
12/27/51	4576-5	Eimco Loader	12/1 - 1/1	250.00		2556.00
1/14/52					500.00	2056.00
1/28/52	4588-6	Generator	1/1 - 2/1	225.00		2281.00
1/28/52	4587-6	Compressor	1/1 - 2/1	414.00		2695.00
1/28/52	4576-6	Eimco Loader	1/1 - 2/1	250.00		2945.00
2/27/52	4588-7	Generator	2/1 - 3/1	225.00		3170.00
2/27/52	4587-7	Compressor	2/1 - 3/1	414.00		3584.00
2/27/52	4576-7	Eimco Loader	2/1 - 3/1	250.00		3834.00
2/25/52					1000.00	2834.00
3/14/52					834.00	2000.00
3/27/52	4588-8	Generator	3/1 - 4/1	225.00		2225.00
3/27/52	4587-8	Compressor	3/1 - 4/1	414.00		2639.00
3/27/52	4576-8	Eimco Loader	3/1 - 4/1	250.00		2889.00
4/28/52	4588-9	Generator	4/1 - 5/1	225.00		3114.00
4/28/52	4587-9	Compressor	4/1 - 5/1	414.00		3528.00
4/28/52	4576-9	Eimco Loader	4/1 - 5/1	250.00		3778.00

TRANSCRIPT OF RENTAL ACCOUNT

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO.

Date	Inv. No.	Item	For Period	Chgs.	Credits	Bal.
5/28/52	4576-10	Eimco Loader	5/1 - 6/1	250.00		4028.00
5/28/52	4588-10	Generator	5/1 - 6/1	225.00		4253.00
5/28/52	4587-10	Compressor	5/1 - 6/1	414.00		4667.00
6/27/52	4588-11	Generator	6/1 - 7/1	225.00		4892.00
6/27/52	4587-11	Compressor	6/1 - 7/1	414.00		5306.00
6/27/52	4576-11	Eimco Loader	6/1 - 7/1	250.00		5556.00
7/31/52	4587-12	Compressor	7/1 - 8/1	414.00		5970.00
7/31/52	4576-12	Eimco Loader	7/1 - 8/1	250.00		6220.00
7/31/52	4588-12	Generator	7/1 - 8/1	225.00		6445.00
8/29/52	4587-13	Compressor	8/1 - 9/1	414.00		6859.00
8/29/52	4576-13	Eimco Loader	8/1 - 9/1	250.00		7109.00
8/29/52	4588-13	Generator	8/1 - 9/1	225.00		7334.00
9/27/52	4588-14	Generator	9/1 - 10/1	225.00		7559.00
10/27/52	4588-15	Generator	10/1 - 11/1	225.00		7784.00
11/26/52	4588-16	Generator	11/1 - 12/1	225.00		8009.00
12/29/52	4588-17	Generator	12/1 - 1/1	225.00		8234.00

U. S. GEOLOGICAL SURVEY
REFERENCE SLIP

Date 5/13/53

Referred to:

Operating Committee
Washington, D. C.

For:

- Field Examination
- Approval & Signature
- Comment
- Initials
- Mailing
- Recommendation
- Reply
- Rewriting
- Signature
- Suggestions
- ✓ Your Information
- ✓ Your Files
- Return for Filing
- Distribution

REMARKS:

Apparently this memo from Mr. Weisenborn justifies the amendment but should be approved by Op. Com.

Region II Spokane
Name of Sender

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D. C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAY 18 1953

May 7, 1953

Memorandum

To: Mr. Robert M. Hull, DMEA Auditor

From: DMEA Field Team, Region II

Subject: Docket No. DMEA-946, Western Montana Exploration and Development Co., Inc. (Key-Durand), Contract Idm-E30.

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A statement of the costs of raising, the items of work performed, claimed, and paid for under Amendment 8 requested in Mr. Chambers' letter has already been furnished you.

By DMEA Field Team, Region II

A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

M. E. Volin, Member
(U. S. Bureau of Mines)

cc: USBM (2)
DMEA (2)

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

Spokane, Washington
May 5, 1953

MEMORANDUM

To: Robert H. Hull, DMEA Auditor

From: DMEA Field Team, Region II

Subject: Docket DMEA 946 (lead-zinc)
Contract 1dm-830
Western Montana Exploration and Development Co., Inc.
(Ray-Durand)

Your memorandum of May 4, 1953, asked for a statement from the Field Team outlining the work done under Amendment No. 8 to the subject contract and its dollar value.

According to our records, the items of work performed, claimed, and paid under Amendment No. 8 are as listed below:

	Feet	Claimed	Paid
Sept. 1952 - MF-104			
Making room for upraise, day work, mucking by hand		175.24	175.24
Oct. MF-104 - raising	35.5	3546.27	none
Nov. MF-104 - raising	49.0	2865.54	none
Dec. MF-104 - raising	28.5	2309.72	none
Feet	113.0		
Claimed but unpaid		$8896.77	
Paid			$175.24

By Field Team, Region II

M. S. Weissenborn, Exec. Officer

M. S. Volin, Member

cc: USGS (2)
DMEA
AD
JSM
DF

MSV/he

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
1201 N. Division St.
Spokane 2, Washington
May 4, 1953

MEMORANDUM

To: DMEA Field Team, Region II

From: Robert M. Hull, DMEA Auditor

Subject: Docket DMEA 946 (lead-zinc)
Contract Idm-E30
Western Montana Exploration and Development Co., Inc.
(Key-Durand)

Reference is made to my letter of April 14, 1953 to Mr. Chambers regarding the above cited contract, which was the result of our discussion of Mr. Chamber's letter of April 3 in regard to the legality and propriety of Amendment No. 8. Copies of these two letters are attached.

What advice, if any, has the Field Team received from the Operating Committee regarding Amendment No. 8, and what is the present status of the situation?

I have been advised by Mr. Chambers in a letter dated April 28, 1953, that his letter of April 3 which was approved by the General Counsel was reaffirmed, namely, that "unless the Field Team can show that it authorized the substitution of raising for drilling prior to the actual date of such work, a disallowance will have to be made."

I would appreciate a statement from the Field Team outlining what work was done under Amendment No. 8 and its dollar value.

Robert M. Hull

cc: Mr. Chambers

RMH

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

C
O
P
Y

1201 N. Division St.
Spokane 2, Washington
April 14, 1953

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Docket DMEA-946
Contract Idm-E30
Western Montana Exploration and Development Co., Inc. (Key-Durand)

Dear Mr. Chambers:

Reference is made to your letter of April 3, 1953, regarding the above cited contract.

I have discussed the problem with Mr. Weissenborn and Mr. Volin. The Field Team has reviewed the amendments, but would prefer to withhold any action until advised by the Operating Committee.

The audit covering this contract will be withheld until such time as this matter has been settled.

Very sincerely yours,

Robert M. Hull
DMEA Auditor, Region II

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

C
O
P
Y

April 3, 1953

AIR MAIL

Mr. Robert M. Hull
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Docket DMEA-946
Contract Idm-E30
Western Montana Exploration
and Development Co., Inc.
(Key-Durand)

Dear Bob:

Reference is made to my letter of February 19, 1953, re the above-cited contract, in regard to the legality and propriety of Amendment No. 8.

The second paragraph of my letter stated "I have consulted the Chief Counsel on this point and it is his opinion that the Field Team had sufficient authority to issue Amendment No. 8." In considering this amendment further, in view of certain information which Mr. Talbert has given me, I discussed the matter again with the Chief Counsel. It appears that the work authorized in Amendment No. 8 as a substitute for a part of the work required in Amendment No. 7, was done prior to the issuance of Amendment No. 8. If this is the case, Amendment No. 8 violates one of the provisions of the contract form itself; viz., that payment shall not be made for costs incurred prior to date of the contract. An amendment to a contract is per se a contract. Unless the Field Team can show that it authorized the substitution of raising for drilling prior to the actual date of such work, and that mention of this fact was inadvertently omitted in the justification of the amendment, it appears that a disallowance will have to be made for costs claimed by the Operator for work done under the amendment.

Will you please discuss this problem with Mr. Volin or Mr. Weissenborn, or both, and tell them that the Chief Counsel has ruled that a further justification is necessary.

Sincerely yours,

JAY L. CHAMBERS /s/

Jay L. Chambers, Chief
Contract Administration
and Audit Division

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

BL

1201 N. Division St.
Spokane 2, Washington
April 30, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 4 1953

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA 9[illegible]6
Contract Idm-E30
Western Montana Exploration and
Development Co., Inc. (Key-Durand)

Dear Mr. Chambers:

Reference is made to your letter of April 27, 1953, concerning the above cited contract and referring to Amendment No. 2 to the contract.

It is my thought that probably this should refer to Amendment No. 8 rather than Amendment No. 2.

Sincerely yours,

Bob

Robert M. Hull
DMEA Auditor

Gaisowski
Keating
Betty

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
1201 N. Division St.
Spokane 2, Washington
April 30, 1953

Mr. Otis Miller
Miller Machinery Company
P. O. Box 1496
Missoula, Montana

Subject: Western Montana Exploration & Development Co.
Contract Idm-E30; Docket No. DMEA 946 (lead-zinc)

Dear Otis:

Your Company letter of April 29, 1953, signed by Mr. D. V. Scott, clarifying the status of equipment rented to the subject company in connection with the above DMEA contract has been referred to me for reply during the absence of the Executive Officer, DMEA Field Team, Region II.

For us to arrive at a final settlement of this contract it will be helpful if we can have a statement from you for the three items of equipment - the 20 KW Diesel Generator Set, the 315 Cu. Ft. Worthington Portable Compressor, and the 12-B Eimco Mine Car Loader - showing the original sales price of each, the amounts by months of rental paid by the Western Montana Exploration & Development Co. during the operation of the DMEA contract, and the estimated present sales value of these items of equipment.

Such a statement, though an imposition on your office, will save us the necessity of sending an auditor to Missoula to examine your records. Your help in this matter is sincerely appreciated.

One of our main difficulties in administration of these DMEA contracts is the disposal of jointly-owned equipment and determination of the Government's equity in such equipment. This part of the program was never worked out in any detail in advance, and procedures have developed as a result of particular problems which have presented themselves. Eventually we hope to iron out all these difficulties so that equipment companies such as yours will not be put to unnecessary trouble in connection with settlements of these contracts.

Sincerely yours,

M. E. Volin
Acting Executive Officer
DMEA Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)
DMEA
AD
R. R. Hull
DF

MEV/he

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

DOCKET COPY

Spokane, Washington
April 21, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 27 1953

Roy W. Key, M.D.
Western Montana Exploration & Development Co.
412 Western Bank Building
Missoula, Montana

Subject: Docket No. DMEA 946X (lead-zinc)
Contract Idm-E30
Disposition of jointly-owned property

Dear Dr. Key:

John S. McNabb, Bureau of Mines engineer, has informed us that you wish to retain certain jointly-owned items of equipment, supplies and other property purchased under the subject contract.

As explained in the attached form letter regarding disposition of property, you may yourself acquire the jointly-owned property only after first having made every effort to obtain a higher price than you are willing to pay; otherwise you may buy the Government's equity by paying for it either on the basis of the original cost or the present value as determined by OPS ceiling price, which is still considered a fair depreciated price even though the OPS is no longer in existence.

Mr. McNabb states that you and Mr. Hancock indicated during a meeting in Missoula on April 11, 1953 that you wished to reimburse the Government for its equity based on OPS ceiling prices and that a tentative schedule for such reimbursement was worked out and discussed.

For your convenience there is enclosed a revised tabulation listing the various property items, the amount of Government contribution to the cost of each item, and the value of the Government's equity in each item, calculated on the basis of depreciation tables formerly used by the Office of Price Stabilization. If the amounts shown meet with your approval please inform us by letter and we will proceed with steps to close the contract.

By Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)

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

M. E. Volin, Member
U. S. Bureau of Mines

Enclosure

WESTERN MONTANA EXPLORATION AND DEVELOPMENT CO., INC.
Docket No. DMEA 946X (lead-zinc), Contract Idm-E90

Assessed evaluation of equipment, buildings & supplies
April 11, 1953

No.	Description of equipment	Original value	DMEA contrib.	% Applicable on purchase price	% deprec. for year	Age of equipment in months	Present value of equipment	Present DMEA equity in equipment & supplies
1	Compressor, Worthington diesel, 315 cfm	$7200.00	$3381.00	80%	10%	22	$5852.40	$2209.82
1	Loader, Eimco, Model 126, bucket type	3073.76	1645.83	80%	15%	22	2223.48	954.58
1	Generator, Diesel electric, 3 phase, 220-440 volts, 20 KW	2250.00	1818.75	80%	10%	22	1838.00	1156.73
4	Mine cars, 20 cu.ft. capacity, Coeur d'Alene Iron Works roller bearing type	1300.00	650.00	100%	15%	22	942.00	471.00
	Mine buildings (mine shop 18'x40', meat house 6'x8', cellar 8'x10', bunkhouse rehabil.)	2559.80	1279.90	100%	10%	15	2267.23	1120.55
	Mine supplies (per attached inventory of Dec. 31, 1952)	524.64	262.32	100%	None	Not applicable	524.64	262.32
		$16,908.20	$9037.80				$13,682.80	$6207.00

FILE COPY
SURNAME:

800

Chamber

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

APR 27 1953

Mr. Robert M. Hall
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Docket DMEA-946
Contract Idm-830
Western Montana Exploration and Development Co., inc. (Kay-Durand)

Dear Bob:

Reference is made to your letter of April 14, 1953, concerning the above-cited contract.

I have delayed replying to your letter until the Administration here took action on the Amendment No. 2 to the contract.

The General Counsel has decided that the only way to correct the situation is to amend the termination agreement. A proposed termination agreement has been drawn and is being sent to Mr. Weissenborn for his review and approval.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

J.N.
4/27/53

JLChambers/wb
April 27, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

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

800

See pertinent

APR 2 8 1953

AIR MAIL

Mr. Robert M. Hall
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Dear Bob:

Reference is made to my letter of April 27, 1953, in which I cited Contract Idm-830, Docket 946, Western Montana Exploration Development Company, and advised that the General Counsel was preparing an amendment to the termination agreement of this contract. This citation should have been Contract Idm-8215, Docket 2013, Amador Mining Company. In the case of the Western Montana Exploration Development Company, neither the General Counsel nor the Operating Committee so far as I am aware has under consideration an amendment to the Western Montana contract.

The General Counsel approved my letter of April 3 addressed to you in which I stated that "unless the Field Team can show that it authorized the substitution of raising for drilling prior to the actual date of such work, *** that a disallowance will have to be made.

Again referring to your letter of April 14, it is not the Audit Division's responsibility to ask the Operating Committee to justify an amendment made by a Field Team. If the Executive Officer in Region II believes that further justification of Amendment No. 8 is unnecessary or has decided not to refer the matter to the Operating Committee or the General Counsel for assistance, it appears that you have no alternative in the preparation of your audit report but to show a disallowance for the item under question.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
April 28, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

Unsworth
Keating
Betty

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

April 23, 1953

Dr. Roy W. Key
Western Montana Exploration & Development Co.
412 Western Bank Building
Missoula, Montana

Re: Docket No. DMEA-946 (Lead-Zinc)
(Formerly Key-Durand)
Granite County, Montana
Completed Contract Idm-E30

Dear Doc:

This will acknowledge receipt of the reports by Albert R. Glockzin and Francis A. Hancock on the Key-Durand project.

I have not yet examined these final reports with the care they deserve, but a cursory inspection indicates that they do have the information we require. We will advise you promptly if more information is necessary.

I will not be able to look at the property with you and Mr. Eichelberger on May 5. However, I would be glad to look over the area with you at a later date, which may be preferable as the snow then should be completely off the ground.

Sincerely yours,

A. R. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: [illegible](2)
[illegible](2)
[illegible]

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

Spokane, Washington
April 21, 1953

Roy W. Key, M.D.
Western Montana Exploration & Development Co.
412 Western Bank Building
Missoula, Montana

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 27 1953

Subject: Docket No. DMEA 946X (lead-zinc)
Contract Idm-E30
Disposition of jointly-owned property

Dear Dr. Key:

John S. McNabb, Bureau of Mines engineer, has informed us that you wish to retain certain jointly-owned items of equipment, supplies and other property purchased under the subject contract.

As explained in the attached form letter regarding disposition of property, you may yourself acquire the jointly-owned property only after first having made every effort to obtain a higher price than you are willing to pay; otherwise you may buy the Government's equity by paying for it either on the basis of the original cost or the present value as determined by OPS ceiling price, which is still considered a fair depreciated price even though the OPS is no longer in existence.

Mr. McNabb states that you and Mr. Hancock indicated during a meeting in Missoula on April 11, 1953 that you wished to reimburse the Government for its equity based on OPS ceiling prices and that a tentative schedule for such reimbursement was worked out and discussed.

For your convenience there is enclosed a revised tabulation listing the various property items, the amount of Government contribution to the cost of each item, and the value of the Government's equity in each item, calculated on the basis of depreciation tables formerly used by the Office of Price Stabilization. If the amounts shown meet with your approval please inform us by letter and we will proceed with steps to close the contract.

By Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)

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

M. E. Volin, Member
U. S. Bureau of Mines

Enclosure

WESTERN MONTANA EXPLORATION AND DEVELOPMENT CO., INC.
Docket No. DMEA 946X (lead-zinc), Contract Idm-E90

Assessed evaluation of equipment, buildings & supplies
April 11, 1953

No.	Description of equipment	Original value	DMEA contrib.	% Applicable on purchase price	% deprec. for year	Age of equipment in months	Present value of equipment	Present DMEA equity in equipment & supplies
1	Compressor, Worthington diesel, 315 cfm	$7200.00	$3381.00	80%	10%	22	$5282.40	$2209.82
1	Loader, Hinco, Model 126, bucket type	3073.76	1645.83	80%	15%	22	2223.48	954.58
1	Generator, Diesel electric, 3 phase, 220-440 volts, 20 KW	2250.00	1818.75	80%	10%	22	1938.00	1188.73
4	Mine cars, 20 cu.ft. capacity, Coeur d'Alene Iron Works roller bearing type	1300.00	650.00	100%	15%	22	942.00	471.00
	Mine buildings (mine shop 18'x40', meat house 6'x8', cellar 8'x10', bunkhouse rehabil.)	2559.80	1279.90	100%	10%	15	2267.23	1120.55
	Mine supplies (per attached inventory of Dec. 31, 1952)	524.64	262.32	100%	None	Not applicable	524.64	262.32
		$16,908.20	$9037.80				$13,682.80	$6207.00

67

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
1201 N. Division St.
Spokane 2, Washington
April 14, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 20 1953

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Docket DMEA-946
Contract Idm-E30
Western Montana Exploration and Development Co., Inc. (Kay-Durand)

Dear Mr. Chambers:

Reference is made to your letter of April 3, 1953, regarding the above cited contract.

I have discussed the problem with Mr. Weissenborn and Mr. Volin. The Field Team has reviewed the amendments, but would prefer to withhold any action until advised by the Operating Committee.

The audit covering this contract will be withheld until such time as this matter has been settled.

Very sincerely yours,

Bob

Robert M. Hull
DMEA Auditor, Region II

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

1201 N. Division St.
Spokane 2, Washington
April 17, 1953

MEMORANDUM

To: DMEA Field Team, Region II

From: John S. McNabb, Mining Engineer, Bureau of Mines

Subject: Disposition of mining equipment, buildings, and supplies owned jointly by the DMEA and the Western Montana Exploration & Development Co., Key-Durand property, Granite County, Mont., Contract Idm-E30, Docket No. 946X (lead-zinc)

Arrangement for the disposition of the Government's equity in jointly-owned property acquired under Contract Idm-E30 has been established. At a meeting in Missoula, Montana, on April 11, 1953, Dr. Roy W. Key, president of the Western Montana Exploration & Development Co. stated that his company wishes to purchase the Government's equity in the subject property.

The present Government equity in the property was established by working from the DMEA contribution which applied on the purchase price of each subject item and depreciating this amount, using the standard OPS scale of depreciation. Three items of equipment, a Worthington diesel air compressor, an Eimco 12B loader, and a diesel-electric generator were procured under a rental-purchase contract between the Western Montana Exploration & Development Co. and the Miller Machinery Co. of Missoula, Mont. The existence of this rental purchase contract became known to the DMEA Field Team only on April 11, 1953. Payments for the use of this equipment were made under the category of "rental values" as was specified in Exhibit "C" of Contract Idm-E30. This resulted in a situation wherein the DMEA contribution exceeded over 50% of the original value of certain of the three subject pieces of equipment (see tabulation).

It is the opinion of Dr. Key and myself that the Government rightfully possesses an equity in the equipment covered by the rental-purchase contract although provisions approving this arrangement never became a part of Contract Idm-E30. In practice the Government actually contributed funds toward the purchase of the subject equipment and consequently should acquire an equity in it. This conclusion is borne out by paragraph 7 of Contract Idm-E30: "Title to and disposition of property. All facilities, buildings, fixtures, equipment or other items costing more than $50.00 each, paid for or purchased with funds

contributed jointly by the Operator and the Government shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account, unless the Government in writing waives its interest in any such items."

The Western Montana Exploration & Development Co. approves the method illustrated in the following tabulation as an equitable arrangement whereby the company may acquire the Government's interest in the subject equipment, buildings, and supplies. The settlement appears to be entirely satisfactory with respect to the Government's interest, and its adoption is recommended.

John S. McNabb

Orig. & 4 cys - Wash.
USGS (2)
DMEA
AD
JSM/he

WESTERN MONTANA EXPLORATION AND DEVELOPMENT CO., INC.
Docket No. DMEA 945X (lead-zinc) Contract Idm-E90

Inventory of Mining Supplies on Hand, December 31, 1952

1000 lbs.	(20 bxs.) 1-1/8x8" No. 3 Gelodyn Atlas Powder	@	.221	lb.	$221.00
9000 ft.	Black Monarch Safety Fuse	@	12.30	thous.	36.90
800	No. 6X Blasting caps (8 boxes)	@	1.81	box	14.48
30 lbs.	Miners carbide	@	.11	lb.	3.30
165 gals.	Diesel fuel	@	.173	gal.	28.55
5 gals.	White gasoline	@	.26	gal.	1.30
250	Mine wedges	@	.03575	ea.	8.94
10 lbs.	3/8"x3" track spikes	@	.17	lb.	1.70
10 lbs.	1/2"x2" track bolts	@	.20	lb.	2.00
12 prs.	18" track fish plates	@	.60	pr.	7.20
12 gals.	Standard oil Stanoil #51 compressor oil	@	.901	gal.	10.81
10 lbs.	Texaco Thuban No. 80 lube	@	.1675	lb.	1.68
12 lbs.	Texaco Regal Starfak special grease	@	.30	lb.	3.60
248 ft.	3 conductor #8 Tirex power cable (used)	@	.25	ft.	62.00
1 lot	Small bolts and washers				1.75
1 lot	Assorted pipe fittings & valves (used)				34.00
12 sets	Mine timbers	@	6.00	set	72.00
425 lbs.	5 bales hay	@	.025	lb.	10.63
80 lbs.	oats	@	.035	lb.	2.80
	Total				$524.64

WESTERN MONTANA EXPLORATION AND DEVELOPMENT CO., INC.
Docket No. DMEA 946E (lead-zinc), Contract Idm-390

Assessed evaluation of equipment, buildings & supplies
April 11, 1953

No.	Description of equipment	Original value	DMEA contrib.	% Applicable on purchase price	% deprec. for year	Age of equipment in months	Present value of equipment	Present DMEA equity in equipment & supplies
1	Compressor, Worthington diesel, 315 cfm	$7220.00	$3351.00	80%	10%	22	$5882.40	$2209.82
1	Loader, Rikco, Model 12B, bucket type	3073.76	1645.83	80%	15%	22	2223.48	954.52
1	Generator, Diesel electric, 3 phase, 220-440 volts, 20 KW	2250.00	1218.75	80%	10%	22	1838.80	1188.73
4	Mine cars, 29 cu.ft. capacity, Odour d'Alene Iron Works roller bearing type	1300.00	650.00	100%	15%	22	942.00	471.00
	Mine buildings (mine shop 18'x40', meat house 6'x8', cellar 8'x10', bunkhouse rehabil.)	2559.00	1279.50	100%	10%	15	2267.28	1129.55
	Mine supplies (per attached inventory of Dec. 31, 1952)	524.64	262.32	100%	None	Not applicable	524.64	262.32
		$16,908.20	$9037.60				$13,682.80	$6207.00

SERVING:
MINING - MILLING
CONTRACTING - SAWMILLS
LOGGING INDUSTRIES

MILLER MACHINERY CO.
(INCORPORATED)

P. O. BOX 1496
PHONE 9-2309
HIGHWAY 93-S
MISSOULA, MONTANA

April 29, 1953

Executive Officer
D.M.E.A.
Region II
S. 157 Howard Street
Spokane, Washington

Gentlemen:

In order to clarify any existing doubt relative to the status of the equipment, mainly the 20 KW Diesel Generator Set, the 315 Cu. Ft. Worthington Portable Compressor, and the 12-B Eimco Mine Car Loader, which the Western Montana Exploration & Development Co., successors to Key-Durand Mining Co., had on rental from us during the life of the D.M.E.A. contract between the above mining firm and the D.M.E.A., we wish to advise that whereas an option to purchase the equipment under our usual option terms was extended to this firm it was never exercised, nor was any indication given that the equipment would be purchased under the option during the term of contract or at the expiration of the contract.

These three items of equipment were picked up and returned to our stock due to the fact that rental payments were in arrears and also because of the indication that the development work would cease because of weather conditions.

A detailed statement of the account is not presented, because we believe it will serve no particular purpose for the records. However, it is available for examination, should you desire.

Very truly yours,

MILLER MACHINERY COMPANY

D. V. Scott

DVS/dp

Do You Wish to Acquire or Dispose of: Crushers, Ball Mills, Hoists, Screens, Engines, Generators, Sawmills, Electric Motors, Motor Control, Pumping, Conveying, Belting, Transmission Equipment, Power Shovels, Tractors, Tractor Attachments, Loaders, Mixers, Concrete Equipment, Wire Rope?

MACHINERY RENTAL

SERVING:
MINING · MILLING
CONTRACTING · SAWMILLS
LOGGING INDUSTRIES

MILLER MACHINERY CO.
(INCORPORATED)

P. O. BOX 1496
PHONE 9-2309
HIGHWAY 93 S.
MISSOULA, MONTANA

May 4, 1953

REC'D
BUREAU OF
MAY 5 1953
SPOKANE, WASH.

Mr. H. Volin
Acting Executive Officer
DMRA Field Team, Region II
1201 N. Division St.
Spokane 2, Washington

Gentlemen:

We wish to acknowledge receipt of and thank you for your letter of April 30, 1952.

In replying to the request in the second paragraph of your letter, we set forth the following:

Item	Original Sales Price
Worthington 415 Cu. Ft. Portable Compressor	$7200.00
Eimco 12-B Mine Car Loader	2957.00
20 KW Diesel Generator Set	2250.00

The question relative to the estimated present sales value of each item is academic, for the reason that the compressor and the Eimco mine car loader have been sold, and also because of the fact that the option to purchase was never exercised. The diesel generator set is still in our stock, upon which a sales price of $2250.00 still obtains.

We enclose herewith a transcript of the rental account of the Western Montana Exploration & Development Co. which sets forth rental charges and credits.

We trust the above will be of some assistance to you.

Very truly yours,
MILLER MACHINERY COMPANY

D. V. Scott

DVS/dp
Enc.

Do You Wish to Acquire or Dispose of: Crushers, Ball Mills, Hoists, Screens, Engines, Generators, Sawmills, Electric Motors, Motor Control, Pumping, Conveying, Belting, Transmission Equipment, Power Shovels, Tractors, Tractor Attachments, Loaders, Mixers, Concrete Equipment, Wire Rope?

TRANSCRIPT OF RENTAL ACCOUNT

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO.

Date	Inv. No.	Item	For Period	Chgs.	Credits	Bal.
8/1/51	4587	Compressor	7/26 - 8/1	69.00		69.00
8/1/51	4588	Generator	7/26 - 8/1	37.50		106.50
8/1/51	4576	Eimco Loader	7/23 - 8/1	66.64		173.14
8/24/51	4576-1	Eimco Loader	8/1 - 9/1	250.00		423.14
8/25/51	4588-1	Generator	8/1 - 9/1	225.00		648.14
8/25/51	4587-1	Compressor	8/1 - 9/1	414.00		1062.14
9/4/51					1062.14	.00
9/27/51	4587-2	Compressor	9/1 - 10/1	414.00		414.00
9/27/51	4576-2	Eimco Loader	9/1 - 10/1	250.00		664.00
9/27/51	4588-2	Generator	9/1 - 10/1	225.00		889.00
10/29/51	4587-3	Compressor	10/1 - 11/1	414.00		1303.00
10/29/51	4576-3	Eimco Loader	10/1 - 11/1	250.00		1553.00
10/29/51	4588-3	Generator	10/1 - 11/1	225.00		1778.00
11/10/51					1000.00	778.00
11/28/51	4587-4	Compressor	11/1 - 12/1	414.00		1192.00
11/28/51	4576-4	Eimco Loader	11/1 - 12/1	250.00		1442.00
11/28/51	4588-4	Generator	11/1 - 12/1	225.00		1667.00
12/27/51	4588-5	Generator	12/1 - 1/1	225.00		1892.00
12/27/51	4587-5	Compressor	12/1 - 1/1	414.00		2306.00
12/27/51	4576-5	Eimco Loader	12/1 - 1/1	250.00		2556.00
1/14/52					500.00	2056.00
1/28/52	4588-6	Generator	1/1 - 2/1	225.00		2281.00
1/28/52	4587-6	Compressor	1/1 - 2/1	414.00		2695.00
1/28/52	4576-6	Eimco Loader	1/1 - 2/1	250.00		2945.00
2/27/52	4588-7	Generator	2/1 - 3/1	225.00		3170.00
2/27/52	4587-7	Compressor	2/1 - 3/1	414.00		3584.00
2/27/52	4576-7	Eimco Loader	2/1 - 3/1	250.00		3834.00
2/25/52					1000.00	2834.00
3/14/52					834.00	2000.00
3/27/52	4588-8	Generator	3/1 - 4/1	225.00		2225.00
3/27/52	4587-8	Compressor	3/1 - 4/1	414.00		2639.00
3/27/52	4576-8	Eimco Loader	3/1 - 4/1	250.00		2889.00
4/28/52	4588-9	Generator	4/1 - 5/1	225.00		3114.00
4/28/52	4587-9	Compressor	4/1 - 5/1	414.00		3528.00
4/28/52	4576-9	Eimco Loader	4/1 - 5/1	250.00		3778.00

TRANSCRIPT OF RENTAL ACCOUNT

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO.

Date	Inv. No.	Item	For Period	Chgs.	Credits	Bal.
5/28/52	4576-10	Eimco Loader	5/1 - 6/1	250.00		4028.00
5/28/52	4588-10	Generator	5/1 - 6/1	225.00		4253.00
5/28/52	4587-10	Compressor	5/1 - 6/1	414.00		4667.00
6/27/52	4588-11	Generator	6/1 - 7/1	225.00		4892.00
6/27/52	4587-11	Compressor	6/1 - 7/1	414.00		5306.00
6/27/52	4576-11	Eimco Loader	6/1 - 7/1	250.00		5556.00
7/31/52	4587-12	Compressor	7/1 - 8/1	414.00		5970.00
7/31/52	4576-12	Eimco Loader	7/1 - 8/1	250.00		6220.00
7/31/52	4588-12	Generator	7/1 - 8/1	225.00		6445.00
8/29/52	4587-13	Compressor	8/1 - 9/1	414.00		6859.00
8/29/52	4576-13	Eimco Loader	8/1 - 9/1	250.00		7109.00
8/29/52	4588-13	Generator	8/1 - 9/1	225.00		7334.00
9/27/52	4588-14	Generator	9/1 - 10/1	225.00		7559.00
10/27/52	4588-15	Generator	10/1 - 11/1	225.00		7784.00
11/26/52	4588-16	Generator	11/1 - 12/1	225.00		8009.00
12/29/52	4588-17	Generator	12/1 - 1/1	225.00		8234.00

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.

412 WESTERN BANK BUILDING

MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
R. ALLEN McGREW,
C.P.A. SECRETARY

May 9, 1953

Mr. M. E. Volin, Acting Exec. Officer
Field Team, Region II
U. S. Bureau of Mines
1201 N. Division Street
Spokane, Washington

Subject: Docket No. DMEA 946X (lead-zinc)
Contract Idm-E30

Dear Mr. Volin:

Complying with request in your letter of May 8th, addressed to Dr. Key, we enclose herewith our copies of the Rental Agreement made with the Miller Machinery Co. of Missoula, Covering the rental of the following equipment:

Worthington 315 Cu. ft. portable Air Compressor
Eimco 12-B Mine Car Loader
20 KW Diesel-Electric Generator Set

For your information we wish to advise that the company was in arrear in their rental payments and therefore the Miller Machinery Company repossessed the equipment on September 1, 1952.

Please return these agreements to us when you are through with them.

Very truly yours

Western Montana Exploration
& Development Co., Inc.
By Francis A. Hancock,
Mining Engineer

FAH:vnb

FILE COPY
SURNAME:

[redacted]

Chambers
Hoffland

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

APR 3 1953

Mr. Robert H. Hall
DMEA Auditor
1301 North Division Street
Spokane 2, Washington

AIR MAIL

Re: Docket DMEA-946
Contract DMe-830
Western Montana Exploration
and Development Co., Inc.
(Nonprofit)

Dear Bob:

Reference is made to my letter of February 19, 1953, re the above-cited contract, in regard to the legality and propriety of Amendment No. 8.

The second paragraph of my letter stated "I have consulted the Chief Counsel on this point and it is his opinion that the Field Team had sufficient authority to issue Amendment No. 8." In considering this amendment further, in view of certain information which Mr. Talbert has given me, I discussed the matter again with the Chief Counsel. It appears that the work authorized in Amendment No. 8 as a substitute for a part of the work required in Amendment No. 7, was done prior to the issuance of Amendment No. 8. If this is the case, Amendment No. 8 violates one of the provisions of the contract form itself; viz., that payment shall not be made for costs incurred prior to date of the contract. An amendment to a contract is per se a contract. Unless the Field Team can show that it authorized the substitution of raising for drilling prior to the actual date of such work, and that mention of this fact was inadvertently omitted in the justification of the amendment, it appears that a disallowance will have to be made for costs claimed by the Operator for work done under the amendment.

Will you please discuss this problem with Mr. Volin or Mr. Weisenborn, or both, and tell them that the Chief Counsel has ruled that a further justification is necessary.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

J.N.
4/3/53

JLChambers/wt
April 3, 1953

Copy to: Docket
Admr. Reading File
Mr. Hoffland
Mr. Chambers
Mr. Haver - Mr. Turner
Mr. Finch - Mr. Treding

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

800

MAR 1 1 1953

Mr. Robert H. Hull
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Dear Bob:

Reference is made to the Report of Review on Chief Joseph Mines, Inc., (E297), and the Audit Report and Certificate on Western Montana Exploration and Development Company (E30), transmitted by your letter of March 6, 1952. The Report of Review on E297 is acceptable and you therefore are authorized to make the usual distribution of the copies.

The Audit Report and Certificate on E30 is returned herewith with the suggestion that it be held in suspense pending disposition of the Government's interest in the project property. The issuance of the Audit Certificate at this time, in effect, authorizes the certifying officer to approve payment to the Operator in the amount certified by you. Full payment at this time is not justified, since protection of the Government's contractual interests requires that sufficient funds be withheld to guarantee the disposition of property in accordance with Article 16 of the contract.

This is a very good report and indicates a job well done on what Mr. Talbert informs me was a rather difficult audit. There are, however, a couple of minor corrections which should be made at the time you revise this Audit Report to "final" rather than "interim". These corrections are:

(1) Indicate in I Introduction that Mr. Talbert assisted you in the audit. In any case where another auditor collaborates or assists in the audit mention thereof should be made in your report;

(2) Revise the first sentence of II General Information on Records to read: "The accounts were not maintained in a manner to be of any assistance in the audit, but the supporting documents, together with the very meticulous cost analyses and distribution sheets maintained by the Operator's mining engineer, were adequate for properly accounting for the expenditures made for the exploration project"; and

(3) Insert the words "of both the equipment owned by the Op erator and the equipment to be rented" after the words "rental value" in the asterisked note at the top of page 9.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

Enclosure

EDTalbert/wb
March 11, 1953

Copy to: Mails & Files
Admr. Reading File
Mr. Chambers

XXXXXXXXXXXXXXXXX
1201 N. Division St.
Spokane 2, Wash.
March 6, 1953

[illegible] 1953

Mr. Jay L. Chambers, Chief,
Contract Administration and Audit Division,
Defense Minerals Exploration Administration,
Interior Building,
Washington 25, D. C.

Dear Mr. Chambers:

There are attached two copies of the audit report of the Western Montana Exploration and Development Co., contract No. Idm-E30, Docket No. DMA 946X, and three copies of the audit certificate.

The Operator kept very good records. However, the distribution of the various amounts claimed was not in accordance with form MF-104, revised. This necessitated much redistributing of the various charges. The Operator has informed the executive Officer that it is his intention to submit bids for the buildings and equipment on this project within the next several months. At this time a final audit will be made.

There is also attached three copies of Report of Review of Chief Joseph Mines, Inc., contract Idm-E297, Docket No. DMEA 1499X.

Mr. Mavor has advised me that he will be ready to make the audit of the Northfield contract on March 9th. Therefore, I am leaving today enroute to Eureka, Nevada.

I have made arrangements to meet Mr. Merrill Yost either in San Francisco or Sacramento to make a final audit of contracts Idm-E350 and Idm-E351, Cosumnes Gold Dredging Co.

The Executive Officer has advised the Bradley Mining Co. that it is desirable to have audits made of contracts Idm-E41 and Idm-E173, which I will make upon completion of the Northfield and Cosumnes Gold Dredging Co. audits.

Sincerely yours,

Robert M. Hull
DMEA Auditor

cc:
Washington
R. M. Hull

500

MAR 2 1953

Mr. A. P. Weisenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMA-946 (Lead-Zinc)
Western Montana Exploration &
Development Company
Granite County, Montana
Contract No. [illegible]

Dear Mr. Weisenborn:

Referring to your letter of January 28, 1953, regarding Amendment No. 2 to the subject contract, we are attaching two copies of a memorandum from the Chief Counsel dated February 18, which clarifies the question. It appears, therefore, that the amendment is in order as written and no further action is necessary.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures 2

WRCriswold/bjl (written 2/20/53)

APPROVED:

J. H. Hedges

Member, Bureau of Mines

T. P. Thayer

Member, Geological Survey

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals Div.
Mr. Bishop
Mr. Kinkel
Mr. Alt
Chron.

February 27, 1953 BW

Memorandum

To: Miss Lanahan, Statistics & Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA HB

Subject: Amendment No. 8, Idm-E30, DMEA-946, WESTERN MONTANA EXPLORATION & DEVELOPMENT COMPANY.

Attached for filing is the docket copy of the above-referenced amendment.

On January 19, 1953 Amendment No. 8 was returned to the Field with certain questions. On February 2, 1953 we received the amendment back from the Field with a letter pointing out that it was felt the amendment alright.

See letter that went through the Operating Committee on February 27, 1953 giving approval to the amendment. This action was concurred in by the commodity division, Contract Administration and Audit Division, and the Legal Division.

Please clear me on this amendment.

Attachment

Cal 3-6

FILE COPY
SURNAME:

500

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

Forwarded
cc Kane
Hoffman
Chapman
Selfridge
Johnson

MAR 2 1953

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-946 (Lead-Zinc)
Western Montana Exploration &
Development Company
Granite County, Montana
Contract No. Idm-730

Dear Mr. Weissenborn:

Referring to your letter of January 28, 1953, regarding Amendment No. 8 to the subject contract, we are attaching two copies of a memorandum from the Chief Counsel dated February 18, which clarifies the question. It appears, therefore, that the amendment is in order as written and no further action is necessary.

Sincerely yours,

George C. Selfridge (JB)

Chairman, Operating Committee

3/2/53

Enclosures 2

WRGriswold/bjl (written 2/20/53)

APPROVED:

J. H. Hedges (JB)

Member, Bureau of Mines

T. P. Thayer (JB)

Member, Geological Survey

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals Div.
Mr. Bishop
Mr. Kinkel
Mr. Alt
Chron.

FILE COPY
SURNAME:
800
Chambers

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

FEB 19 1953

Mr. Robert H. Hull
DMEA Auditor
1201 North Division Street
Spokane 2, Washington

Re: Docket DMEA-946
Contract Idm-R30
Western Montana Exploration
and Development Co., Inc.
(Kerr-Durnell)

J.C. 2/19/53

Dear Bob:

In a letter dated February 12, 1953, Mr. Talbert questions the legality and propriety of Amendment No. 8 to the above cited contract. This amendment appears to change the purpose of Amendment No. 7 by substituting 96 feet of raise for 500 feet of diamond drilling. The 500 feet of drilling was to be done by the Operator regardless of whether the project allotment was sufficient to reimburse the Operator. On this basis, you and Talbert question the authority of the Field Team to waive the drilling and substitute the raise.

I have consulted the Chief Counsel on this point and it is his opinion that the Field Team had sufficient authority to issue Amendment No. 8.

It is admitted that the justification for the issuance of No. 8 is not too well stated. This, however, does not invalidate the amendment. Mr. Talbert asked me to write you in regard to the above point. If Amendment No. 8 is the only deterring factor in completing your audit, I would say that we will accept Amendment No. 8 and the project should be audited accordingly.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

JLChambers/wb
February 19, 1953

Copy to: Docket
Admr. Reading File
Mr. Chambers

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

February 18, 1953

Memorandum

To: Mr. G. C. Selfridge 4631
Chairman, Operating Committee

From: Chief Counsel

Subject: Western Montana Exploration & Development Company
Docket No. DMEA-946, Idm-E30, Amendment No. 8

Reference is made to a letter dated January 19 from you to the Executive Officer, Region II, and to the Executive Officer's reply to you dated January 28, all relating to Amendment No. 8 to the contract.

Your letter of January 19 was, I believe, drafted in this office. It raises some objections to Amendment No. 8 to which Mr. Weissenborn replies in his letter to you of January 28.

Upon re-examining this matter I believe that Mr. Weissenborn is entirely correct, and that there is no valid objection to Amendment No. 8 as it has been signed and executed. I suggest that you forward a copy of this memorandum to Mr. Weissenborn for his information.

J. L. Hofflund
J. L. Hofflund
Chief Counsel

WESTERN MONTANA EXPLORATION
& DEVELOPMENT CO. INC.
412 WESTERN BANK BLDG.
MISSOULA, MONTANA, DMEA-946X,
I-DMA-E30, DMPA-2461

DEPARTMENT OF THE ...
Defense Minerals Administration
RECEIVED
FEB 18 1953

February 16, 1953

Greenwood
Keating
[redacted]
Betty

Refer: DMPA-2461
DMPA-2461
Mr. Lyon

Dear Mr. Lyon:

Reference is made to your letter of 9 February, 1953 regarding the above designated file and application. The decision announced comes as no surprise to us for several reasons, and, although it was quite a blow to all of us that a contract and advance was not negotiated in the summer of 1952, we are not too discouraged about our Wasa-Shamrock ground of Durand Lead-Zinc Claims near Hall, Granite County, Montana.

It was recently brought to our attention that possibly our ore would be amenable to a Heavy Media process of treatment ahead of selective flotation, and to further explore this possibility we are now having accomplished a preliminary test toward that end by the Hammond Everly Engineering Company of Butte, Montana. Meantime, we are in correspondence with American Cyanamid Company's ore testing laboratory at Stamford, Connecticut, regarding a comprehensive test if the Butte people give us a favorable report in a few days. We are also in touch with Wilmot Engineering Company of Hazelton, Pa. in regard to their Wilmot-Daniels dual density heavy media mills, having in mind the possibility of producing a small fraction which will be shippable direct to a smelter and a middling product which would give us heads of 8-12% zinc to a smaller and less expensively operated selective flotation mill than we mentioned in our application to you and the DMAC people.

If the Wasa-Shamrock ore is amenable to the heavy media process then we can accept the dictum of the U. S. Geological Survey that our ore averages only 2% zinc and still make a producing mine.

Will you please be so kind as to send me a list of the companies which secured DMPA floor price contracts for lead and zinc, stating at what floor these contracts were executed for pig lead and slab zinc per pound. We understand this information is available in Mr. Jess Larson's office for distribution to those who request it.

Respectfully,

Roy W. Key

Mr. Tom Lyon, Director
Domestic Expansion Division
Defense Materials Procurement Agency
Washington 25, D. C.

RWK:sh

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

cae
2/2/53

January 28, 1953

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

Re: Docket DMEA 946 (Lead-Zinc)
Western Montana Exploration
and Development Company
Contract Idm-E30

Dear Mr. Selfridge:

Returned herewith are the original and two signed copies of Amendment No. 8 to the subject contract, which were returned to this office for correction with your letter of January 19, 1953.

It is our belief that the change in the effective date of Amendment No. 8 suggested in your letter is not necessary. Is there not perhaps a confusion between "effective date" and "executed date"? Amendment No. 8 was executed November 19, 1952, with an effective date of September 1, 1952, and it does change Amendment No. 7 which was not executed until September 17, 1952. However, Amendment No. 7 which was signed by the Administrator, states "that the Exploration Contract Idm-E30 of June 28, 1951. . .hereby is further modified and amended effective as of the date of the original contract. . ." Therefore, since Amendment No. 7 is effective back to June 28, 1951, it appears to us that, it is immaterial whether the effective date of Amendment No. 8 is September 1 or September 17 even though it affects Amendment No. 7. Please advise if this interpretation is not correct.//

Work on Contract Idm-E30 has been completed. The Operator is requesting additional funds, and as results of the exploration to date give little justification for further work, relations between the Operator and the Field Team are at present slightly strained. Therefore, if possible, we wish to avoid negotiating a change in date in the Amendment unless this is absolutely essential.

Sincerely yours,

A E Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: USBM(2)
Quinlan
AD, USBM

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
1201 North Division St.
Spokane 2, Washington

January 22, 1953

MEMORANDUM

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
1 1953

To: DMEA Field Team, Region II

From: E. A. Magill, Mining Engineer, Bureau of Mines

Subject: Western Montana Exploration and Development Co. (Key and Durand), Granite County, Montana, Contract I-DMA-E30, Docket 946X (lead-zinc)

A Mr. Walter E. Ingersoll of Maxville, Montana called in this office on January 20, 1953 regarding an unpaid bill for an I.R. Model R48 stoper, stoper parts and rail. This equipment was sold to Key and Durand in February 1952. The total unpaid balance amounts to about $700.

A check of our records failed to disclose that the Operators had ever submitted an invoice covering these items under the exploration project contract. However, Mr. Ingersoll claims that the equipment has been used on the project. He further stated that Key and Durand had a number of outstanding bills for equipment and supplies to various parties along with a labor lien against the property for unpaid wages. Mr. Ingersoll plans on suing the Operators if he does not receive satisfaction in the near future.

Mr. Ingersoll was informed that a check would be made with the Operators to determine if the equipment had been used on the project or if the Government had participated in its purchase. Mr. McNabb plans to contact Key or Durand the latter part of this week.

It is recommended that the company's records under exploration project contract I-DMA-E30 be audited as soon as possible to determine what financial responsibility the Government may have, if any, in unpaid bills of the project.

E. A. Magill

E. A. Magill

Orig. & 3 -- Wash.
USGS - 2
DMEA
A/D
JSM/vf
Robt. Hull

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

157 So. Howard Street
Spokane 1, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 6 1953

January 21, 1953

Mr. Roy [illegible] Ley, President
Western Montana Ore Location & Development Co., Inc.
412 Northern Trade Building
Missoula, Montana

Re: Docket No. [illegible]-46 (Lead-Zinc)
Granite Co., Montana
Contract Idn-[illegible]

Dear Mr. Ley:

This is in response to your letter of January 12, 1953 regarding further work at the Nana property.

Your two proposals have been given careful consideration and study; however, we regret to inform you that neither proposal holds enough promise of finding commercial ore to justify DMA participation.

The original DMA program was planned to explore the "Nana rock "ore body." This work has been completed, showing interesting amounts of zinc but no commercial ore body. We regret that the drifting was not done along the hanging wall side of the shear zone, as we had requested on several occasions, as we believe that this would have yielded more information. It is believed, however, that the work has inadequately tested the mineralized structures and has strongly indicated that they do not carry commercial concentrations of ore minerals, and that we would not be justified in supporting further work.

We would like to call to your attention Article 12 and 13 of the Government contract. Article 12 provides that you furnish the Government with a complete and exhaustive report of the work to date. Article 13 provides that you shall keep the Government fully and fairly accounting of your expenditures under the contract and expenditures of money. You should also account for any items of materials, supplies, and equipment for the plant including payroll and the Government. [illegible] 12 percent of the free value of the concentrate.

We sincerely regret that the exploration was not more successful. If we can be of any further assistance, please feel free to call on us.

By DMEA Field Team Region II

A. E. Weissenborn, Exec. Officer
(Geological Survey)

M. S. Volin, Member
(Bureau of Mines)

cc: DMEA (2)
USBM (2)
Quinlan

FILE COPY
SURNAME:

140

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

BW

Keating
Hofflund
Chambers
Selfridge
Weissenborn

JAN 1 9 1953

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 8, Washington

Re: Western Montana Exploration
and Development Company
Docket No. DMEA-946
Contract I-DMA-E30 (Lead-Zinc)

Dear Mr. Weissenborn:

There are returned herewith for correction the original and two signed copies of Amendment No. 8 to the subject contract, which you forwarded to me with your letter of December 18, 1952.

The amendment, the effective date of which is said to be September 1, 1952, purports to change Amendment No. 7 which was not executed until 16 days later on September 17, 1952. It is our belief that you intended the effective date of the amendment to be September 17. If our understanding is correct, please make the necessary changes.

According to Amendment No. 7, work on the contract is to be completed by December 28, 1952. It would therefore be advisable to enter into a new Amendment No. 9 extending the time for performance.

Sincerely yours,

J.C. 1/19/53

George C. Selfridge

(JHB)

Chairman, Operating Committee

Enclosures 3

AEKane/em/ema 1-12-53
cc: Mails & Files
Adm. R. File
Op. Comm.
J. H. Hedges
T. P. Thayer
J. L. Hofflund
A. E. Kane
A. G. Keating
Chron.

Approved:

J. H. Hedges (JHB)

Member, Bureau of Mines

T. P. Thayer (JHB)

Member, Geological Survey

Mr. Mittendorf

We are passing along copy of this letter as for your information as requested by Mr. Key.

F.B.Speaker

Noted
Send to Keating

DMEA's contract with them is:
DMA-946 - Western Montana Exploration & Devpt.Co. (Lead-zinc).
Contract executed.

fw

WESTERN MONTANA EXPLORATION
& DEVELOPMENT CO. INC.
412 WESTERN BANK BLDG.
MISSOULA, MONTANA, DMEA-946X,
I-DMA-E30, DMPA-2461

January 9, 1953

Dear Mr. Speaker:

The Key & Durand Mining Partnership was incorporated under Montana Laws in October, 1951 and is now known as indicated by above letterhead.

Project DMAC-719 has not even been started for the simple reason that we have not been able so far to secure a production contract for zinc, lead & copper and an advance of $200,000.00 against production with which to construct our mill covered by above project number.

Our failure so far to secure a contract and the advance mentioned in above paragraph is due mostly to a disagreement in sampling methods and contradictory assay values as carried out by the U. S. Geological Survey (Spokane Office) and our own engineer, Mr. Francis A. Hancock, an older man of long and trustworthy experience.

We have the ore and if and when we do build our mill it will likely be a combination of heavy media-("sink float")-flotation in the order named working in tandem.

Am sending along two copies of this letter; perhaps you would like to pass such on to Messrs. Larson, Howard Young, Charlie Mittendorf and Gunnard Johnson.

Respectfully,

Roy W. Key

Mr. Francis B. Speaker, Director
Mining Requirements Division
Defense Materials Procurement Agency
Washington 25, D. C.

RWK:sh

COPY

946

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 6 1953

December 30, 1952

Mr. Frank E. Johnson, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Dear Mr. Johnson:

Enclosed are the following routine inspection reports of geologists and mining engineers of the Geological Survey and the Bureau of Mines:

Docket No.	Name	Contract No.
2471	North Boulder Lead Property, Jefferson Co., Mont.	313
946	Wasa Mine, Granite County, Montana	30
525X	Talisman mine, Ferry County, Washington	137
2225	Sylvan Mine (McNabb), Jefferson Co., Mont.	238
2396	Meyers Cove Project, Lemhi County, Idaho	347
2254	Faithful Mine (Wegener), Beaverhead Co., Mont.	434
2420	Hypotheek Mining & Milling Co., Shoshone Co., Idaho	380
2260x	January Mine, Broadwater County, Montana	246
2499	Black Pine Mine, Lemhi County, Idaho	329
652	South Mountain Mine, Owyhee County, Idaho	177

Sincerely,

Eva M. Raymond

Eva M. Raymond
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures 10 (in quad.)

cc: USBM (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

BW.

December 18, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 22 1952

Mr. Frank E. Johnson, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket DMEA-946X (lead-zinc-copper)
Western Montana Expl. & Devel. Co.
Contract Idm-E30

Dear Mr. Johnson:

Attached are the original and two signed copies of Amendment No. 8 to the subject contract, with attached justification.

A copy of the amendment has been retained by the Operator, a copy is being retained for our files, and by a carbon copy of this letter we are transmitting the Finance Officer's copy.

Sincerely,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Attachment

cc: Finance Officer w/encl.
USBM (2)
Quinlan

RECEIVED
JAN 7 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

cc
12-23

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 12 1952

December 8, 1952

Roy W. Key, M.D.
Western Montana Exploration & Development
413 Western Bank Building
Missoula, Montana

Subject: Contract Idm-E30,
October, 1952 Operating Report

Dear Dr. Key:

The subject invoice has been received and processed by our Certifying Officer, to the extent indicated in his attached memorandum to the Field Team.

We are obliged to withhold final payment until your final report has been submitted and an audit of your accounts has been made by a representative of the Contract and Audit Division of the Defense Minerals Exploration Administration.

Please advise us as to the most convenient time and place for the audit.

By Field Team, Region II

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey
South 157 Howard Street

M. E. Volin, Member
U. S. Bureau of Mines
North 1201 Division Street

Enclosure
Wash - 3
USGS - 2
DMEA
A/D
D/F

C
O
P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

Betty

November 25, 1952

Through: DMEA Operating Committee

Mr. Jay L. Chambers, Chief
Contract Administration and Audit Div.
Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Dear Mr. Chambers:

Enclosed are the original and two copies of justifications for amendments to the below listed contracts, of which a copy of each is being sent to the Regional Finance Officer.

Contract No.	Docket No.	Operator	Amendment No.
E-1	DMA-432	Mines Management, Inc.	1
E-9	DMA-42	Taylor-Knapp Company	4
E-30	DMA-946X	Key and Durand	3
E-81	DMA-129X	Bennett Mining Company	2
E-81	DMA-129X	Bennett Mining Company	3
E-113	DMA-1593	Ambassador Mines Corporation	1
E-115	DMA-1177X	Elkhorn Mining Company	1
E-115	DMA-1177X	Elkhorn Mining Company	4
E-117	DMA-1727X	Hughesville Silver-Lead Mining Co.	1
E-152	DMA-1635x	Silver Star-Queens Mines, Inc.	4

These attachments are being forwarded in accordance with Mr. Chambers' letter dated August 11, 1952. The remaining justifications will be forwarded at the earliest possible date.

Sincerely yours,

Thor H. Kiilsgaard
Acting Executive Officer
DMEA Field Team, Region II

Enclosures

cc: USBM (2)
Reg. Finance Officer w/encls.

Ave

DMA Docket No. 946X
Ray and Durand
Granite County, Montana
Contract No. L-DMA-830

JUSTIFICATION FOR AMENDMENT NO.3

Amendment No. 3 to Contract No. L-DMA-830 allows for construction of 1-5/8 miles of access road from U. S. Forest Service road up Douglas Creek to the Mass mine. This amendment also makes the Operator responsible for snow removal from the access road, and deletes $3,000 from the contract for this purpose.

This amendment was made because the location of the original access road was such that it would be difficult to keep the road open because of drifting snow. The possibility existed that there would be times when it would be next to impossible to keep the road open. By relocation of the access road, the problem of drifting snow was removed and access to the property insured. The cost to the Government for the new access road was no more than the estimated cost of keeping the original access road cleared of snow.

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

[redacted]
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 5 1953

November 25, 1952

Memorandum

To: DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Routine Inspection, Docket No. DMEA-946 (Lead-Zinc), Western Montana Exploration and Development Company, Inc., Wasa Mine, Granite County, Montana, Contract No. I-DMA-530.

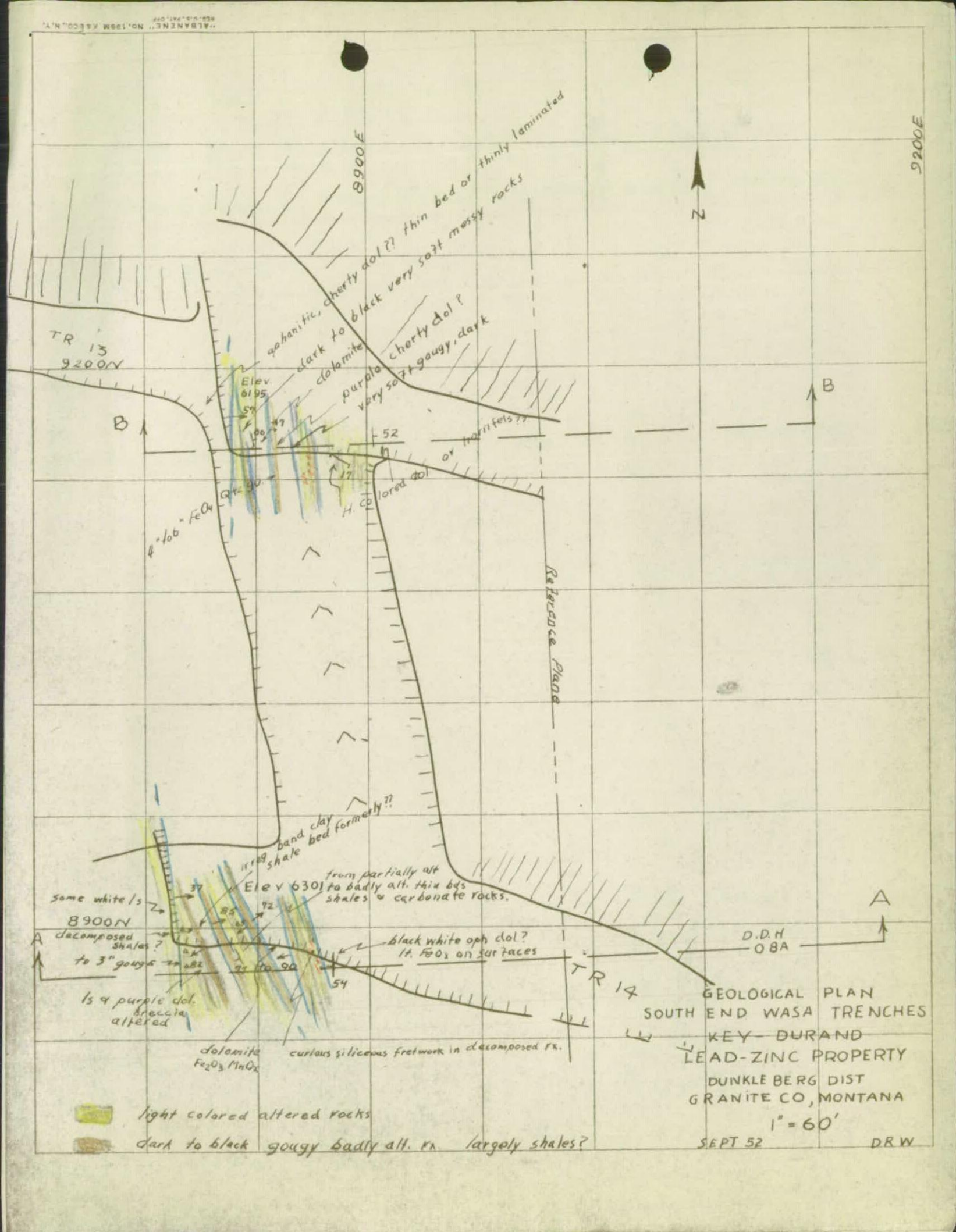
A routine inspection of the Wasa exploration project was made November 3, 1952. Results of exploration were discussed with Dr. Roy W. Kay, President of the Western Montana Exploration and Development Company, Inc., at Missoula, Montana, on November 8, 1952.

Attached is a geologic map and assay plan of the work completed under the DMEA program. The geology of the south crosscut to the No. 2 east crosscut was mapped by me and the remaining portion of the geology was mapped by Don Williamson of the American Smelting and Refining Company. Samples No. 1-S to No. 19-S were cut by John S. McNabb of the Bureau of Mines and Samples No. 1 to No. 18 were cut by me.

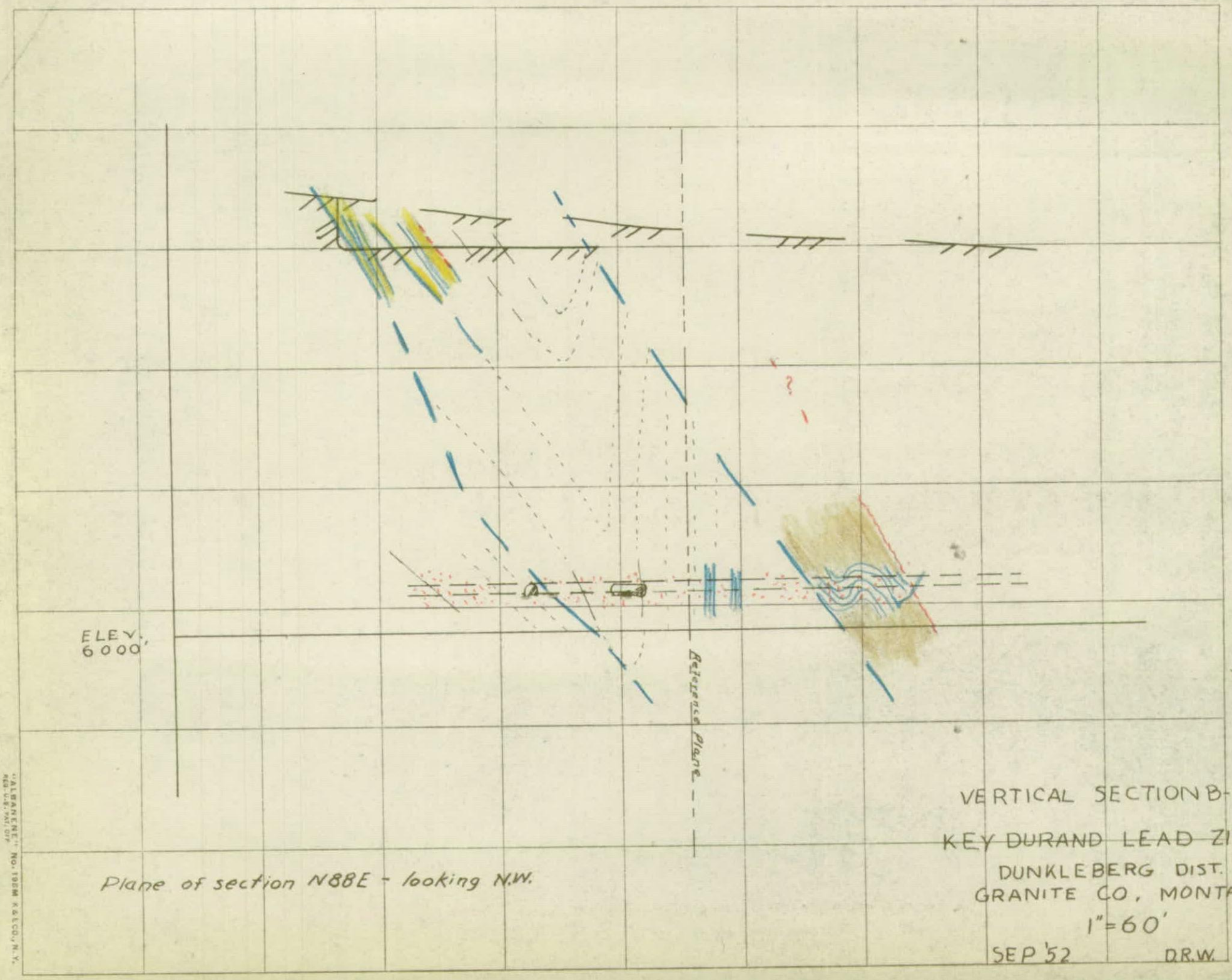
Also attached is a geologic map of trenches No. 13 and No. 14, and two geologic sections correlating the geology of the trenches with the underground geology and diamond drill data from U. S. Bureau of Mines diamond drill hole 8A. The trench map and sections were prepared by Mr. Don Williamson.

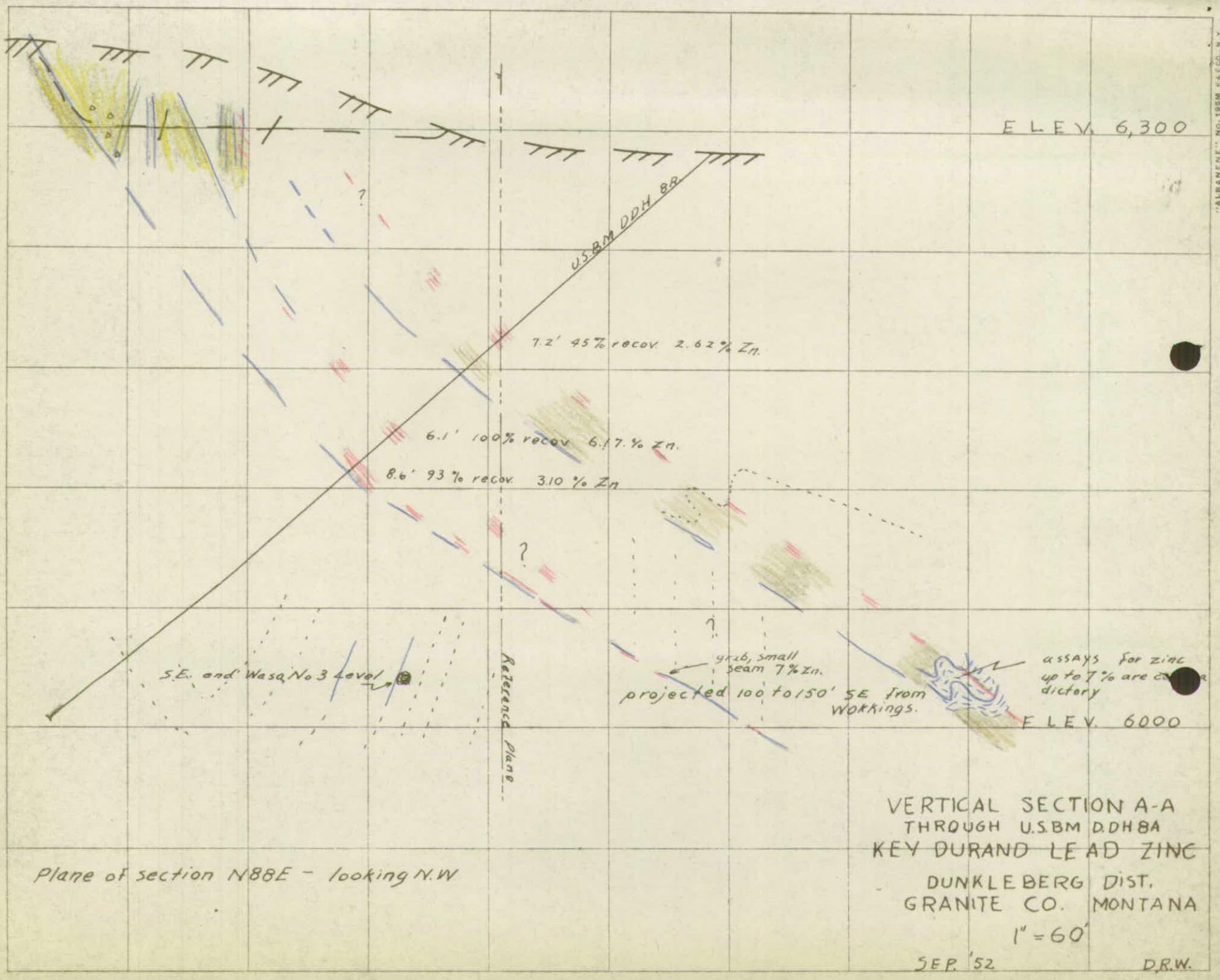
The DMEA is indebted to Mr. Williamson for furnishing the Operator and the Government with copies of his maps. The maps and sections present an interesting geologic picture and represent the type of geologic work that should be done in area. The contract was amended to allow for such work, but the geologist hired to undertake this study did not complete the work.

Enclosures 3
Dist:
DMEA-Orig. & 3
USBM (2)
Docket
Quinlan



GEOLOGICAL PLAN
SOUTH END WASA TRENCHES
KEY-DURAND
LEAD-ZINC PROPERTY
DUNKLE BERG DIST
GRANITE CO, MONTANA
1" = 60'
SEPT 52
DRW


ELEV. 6000'
Reference Plane
?
VERTICAL SECTION B-B
KEY DURAND LEAD ZINC
DUNKLEBERG DIST.
GRANITE CO., MONTANA
1"=60'
SEP '52
D.R.W.
Plane of section N88E - looking N.W.


ELEV. 6,300
U.S.B.M. DDH 8A
7.2' 45% recov. 2.62% Zn.
6.1' 100% recov. 6.17% Zn.
8.6' 93% recov. 3.10% Zn
?
S.E. and Wasa No 3 Level
Reference Plane
grab, small seam 7% Zn.
projected 100 to 150' SE from workings.
assays for zinc up to 7% are contradictory
ELEV. 6000
Plane of section N88E - looking N.W.
VERTICAL SECTION A-A
THROUGH U.S.B.M. DDH 8A
KEY DURAND LEAD ZINC
DUNKLEBERG DIST.
GRANITE CO. MONTANA
1" = 60'
SEP. '52
D.R.W.

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

Spokane, Washington
November 21, 1952

Roy W. Key, M.D.
412 Western Bank Building
Missoula, Montana

Subject: Docket No. DMEA 946X (Pb-Zn-Cu)
Western Montana Expl. & Devel. Co.
Contract Idm-E30, Amendment No. 8

Dear Dr. Key:

Enclosed are 7 copies of an amendment to the subject contract, prepared to permit the substitution of the raise you have started for the diamond drilling specified in the contract. If it meets with your approval, please sign all copies, retain one for your files and return the original and 5 copies to this office.

You will note that the amendment specifies completion of the raise to an intersection with the mineralization cut in Bureau of Mines drill hole No. 8-A. This will be at your own expense if the funds available under the contract are exhausted before the 96 feet specified are driven. The Field Team feels that this is only fair as the raise was started on your own initiative despite our objections.

We are still of the opinion that the program originally specified in Amendment No. 7 would have provided more information at a lesser cost than your present plan; we accordingly will have difficulty explaining this change to our Washington, D.C. office. We realize, on the other hand, that you have made an honest effort toward exploration of the property and thus are willing to go along with you to the extent of this amendment.

By Field Team, Region II

cc: DMEA, Wash. (2)
USGS (2)

M. E. Volin, Acting Exec. Officer
U. S. Bureau of Mines
1201 N. Division St.

For: A. E. Weissenborn
U. S. Geological Survey
157 S. Howard Street

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

October 20, 1952

Memorandum

To: DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. DMA - 246X (Lead-Zinc), Telephone conversation Western Montana Exploration and Development Company, Inc., Waza Mine, Granite County, Montana. (Key-Durand), Contract No. I-DMA-830.

This memorandum is prepared for the official record to report an agreement reached during the course of a telephone conversation between Dr. Roy W. Key, President, Western Montana Exploration and Development Company, Inc., representing the Operator, and Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II, and myself, representing the Government. Dr. Key called this office long distance from Missoula, Montana on October 10, 1952 to press the Operator's case for a raise from the DMEA exploration drift to the ore encountered in U. S. Bureau of Mines' diamond drill hole No. 8A.

Dr. Key was informed that the Government would not consider a raise at this time and it was still our considered opinion that diamond drilling was the best approach to prospecting in this area.

Dr. Key was further informed that since funds are allowed in the contract for such drilling, we did not feel justified in requesting Washington for an amendment to allocate funds allowed for diamond drilling to raising.

Dr. Key reported that the company's diamond drill machine was electrically driven; and that before he could drill in this area, it would be necessary to purchase approximately 500 feet of electric cable. He also reported that he had sectional steel for long-hole drilling.

It was decided to substitute one long-hole not to exceed

150 feet for a portion of the diamond drilling. This hole is to be drilled at a positive angle from the south crosscut face to prospect the so-called Shamrock ore zone indicated by the U. S. Bureau of Mines' work. Dr. Kay was advised to save the drill hole cuttings for each 5 feet of hole drilled.

J. J. Quinlan

cc: USBM (2)
DMEA (2)
Quinlan

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

September 19, 1952

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

Re: Contract I-DMA-E30
Docket DMA-946X, Lead-Zinc
Granite County, Montana
Western Montana Exploration and
Development Company, Inc.

Dear Mr. Johnson:

Enclosed herewith are the original and two signed copies of Amendment No. 7 to the above captioned contract. One copy has been retained by the Operator and one copy for the files of this office.

By copy of this letter, the Regional Fiscal Officer's copy is distributed.

Sincerely,

A E Weissenborn
A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosure

cc: USBM (2)
W. Rulon Lee, Albany, w/encl.

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
SEP 23 1952

gds
9/23/52

RECEIVED
OCT 1 - 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

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

September 11, 1952

Memorandum

To: H. F. Keller

From: O. M. Bishop

Subject: Application for increased fund for DMA-946X, Idm E-30, Western Montana Exploration and Development Company

The funds for the present contract, $66,500, were exhausted on July 28, 1952, before the objective was reached. The original contract was based on an estimate of $26.00 per foot for drifting and x-cutting, whereas the cost proved to be $39.021 per foot. The work was done efficiently and careful records were kept and the Field Team says that the work could not have been done any cheaper.

The Field Team recommends that the contract be extended to cover 400 feet of drifting and x-cutting and 500 feet of diamond drilling and the employment of a geologist for one month to assist in mapping the geology. This will be an additional amount to the present contract costing about $20,250.

We have examined all the reports available and believe the extra work needs to be done to determine the importance of the ore horizons cut by the U. S. Bureau of Mines, hole #8-A.

We concur with the Field Team's recommendation that the extended contract be allowed.

O. M. Bishop

O. M. Bishop
Base Metals Branch

FILE COPY
SURNAME:
500

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

SEP 8 1952

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMA-946X (Lead-Zinc)
Contract No. I-DMA-E30
Western Montana Exploration and
Development Company, Inc.
Amendment No. 7

Dear Mr. Weissenborn:

Enclosed are the original and five copies of proposed Amendment No. 7 to the subject contract, duly signed by the Government. The information that you furnished in your letter of August 22, 1952, was used as a basis for the drawing up of this amendment. The estimated costs vary only slightly from those recommended by the Operator. As recommended by Mr. Reed, the total fee for the part-time employment of a consulting geologist has been reduced to $750.00.

If the amendment meets with your approval, and that of the Operator, kindly obtain his signature and return the original and two copies to this office and distribute the other three copies in the usual manner. However, if the amendment is not approved, kindly return the original and copies to this office with your comments.

Sincerely yours,

H. F. Keller (GHB)

ACTING Chairman, Operating Committee

Enclosures 6

HFKeller/mb
September 5, 1952
Copy to: Docket
Adm. Reading File
Operating Committee
Mr. Keller (2)
Mr. McKnight
Mr. Bishop
Region

APPROVED:

J. H. Hedges (GHB)
Member, Bureau of Mines

T. P. Thayer (GHB)
Member, Geological Survey

IN REPLY REFER TO:

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

September 8, 1952

Memorandum

Re: DMA-946X
Contract Idm-E30
Western Montana Exploration and Development Company
(Key - Durand)
Lead-zinc

To: Mr. H. F. Keller

From: B. Gildersleeve

Subject: Application for extension of, and increased funds for, DMA-946X, Contract Idm-E30 Concurrence with field team recommendation of approval.

The captioned contract expired July 28, 1952 before the target zone was reached. The applicant requests an additional $21,000 to complete the exploration authorized by the original contract, and an extension of time to January 1, 1953.

The original contract, Idm-E30, for $66,500, provided for 800 feet of drifting at $26 per foot and 800 feet of crosscutting at $26 per foot. Actual exploration costs were found to be $39.021 per foot. Work accomplished under the contract was 579 feet of drifting and 647.5 feet of crosscutting. It fell short of the contract allowance by 221 feet of drifting and 152.5 feet of crosscutting.

The applicant requests the contract be amended to provide for:

1.	280 feet of drifting plus 120 feet of crosscutting at $40 per foot.....	$ 16,000
2.	500 feet of diamond drilling at $6 per foot.....	3,000
3.	Consulting geologist 2 months at $750 per month.....	1,500
4.	Sampling and assaying.....	500
		$ 21,000

A review of the applicant's request and supporting justification in the form of a consultant's report, together with memoranda from the field team indicates:

1. Present information is inconclusive as to the target sought.

2. The services of a consultant are not required for more than one month.

3. The field team approves the additional exploration and recommends the amendment be made retroactive to July 28, 1952.

From a geologic standpoint the reviewer concurs with the field team's recommendation of approval.

B. Gildersleeve
(ETMC)

B. Gildersleeve
Geologist

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

September 5, 1952

Memorandum

To: C. O. Mittendorf, Administrator

From: H. F. Keller, Chief, Base Metals Division

Subject: Justification of Amendment No. 7 to the Contract No. I-DMA-E30, Key and Durand

The proposed Amendment No. 7 to the subject contract is justified for the following reasons:

1. The estimated costs of the proposed work in the original contract were not sufficient to complete the project. Of the total of 800 feet of drifting and 800 feet of crosscutting authorized at $26.00 per foot, only 570 feet of drifting and 647.5 feet of crosscutting were completed before the funds were expended.

2. It is the opinion of this division and the regional staff, that funds should be provided to complete the work. The following is transcribed from the memorandum of August 21, 1952, from Glenn C. Reed to M. E. Volin, "I believe that every consideration should be given to the Operator's request for additional funds to complete the project".

3. The proposed work should be sufficient to prove or disprove the existence of an ore body which was indicated by previous diamond drilling.

H. F. Keller

This is FRIDAY
YOU CAN STILL GET IT DONE THIS WEEK IF YOU...
TELEGRAPH
6C44

WESTERN UNION

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
DL=Day Letter
NL=Night Letter
LT=Int'l Letter Telegram
VLT=Int'l Victory Ltr.

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

OA470 PRA736

1952 SEP 4 PM 10 05

PR MSA157 NL PD=MISSOULA MONT 4=

C O MITTENDORF=DEFENSE MINERALS EXPLORATION ADMN

DEPT OF THE INTERIOR WASHDC=

CAN YOU GIVE ME SOME INDICATION THIS MORNING OF ACTION ON

RECENT REQUEST FOR EXTENSION AND ENLARGEMENT OF DMA

946X-1-DMA-E30 CONTRACT CALL MISSOULA 5995 COLLECT IF YOU

WISH=

ROY W KEY MD=

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 5 1952

946X-1-DMA-E30 5995=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

SEP 5 7 01 AM '52
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS

DL=Day Letter

NL=Night Letter

LT=Int'l Letter Telegram

VLT=Int'l Victory Ltr.

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

1952 AUG 27 PM 7 53

•OB 009

PRD438 PR•SKA896 GOVT PD=B SPOKANE WASH 27 355P=

C O MITTENDORF ACTING ADMINISTRATOR DEFENSE

MINERALS EXPLORATION ADM=DEPARTMENT OF THE

INTERIOR WASHDC=

RETELCON DMA-946 KEY AND DURAND LEAD ZINC FIELD TEAM

RECOMMENDATION AIRMAILED TODAY FOR AMENDMENT TO PROVIDE

ADDITIONAL FUNDS AMOUNT TWENTY ONE THOUSAND DOLLARS=

M E VOLIN ACTIVE EXECUTIVE OFFICER DMEA REGION 2=

DMA-946 DMEA 2=

Defense Minerals Exploration Administration
RECEIVED
AUG 28 1952

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

1952 AUG 27 PM 8 02

DLY

AUG 28 7 22 AM '52

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.
412 WESTERN BANK BUILDING
MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE
OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
R. ALLEN McGREW,
C.P.A. SECRETARY

August 26, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 28 1952

Dear Mr. Mittendorf:

Refer: DMA-946X--I-DMA-E30

Our application for extension of above contract from 26 July, 1952 to 1 January, 1953 and increasing amount of funds from $66,500.00 to $87,500.00 (an increase of $21,000.00) as recommended by Al Weissenborn's office in Spokane is now in your hands.

Since 1 July, 1952 I have been carrying on almost entirely with my own funds and some borrowed from Flint Creek Valley Bank in Philipsburg, Montana, but am going to have to have some help very soon. Will you please be so kind as to expedite a favorable consideration of our application mentioned above?

It would ease things considerably if your office could send me a telegram just as soon as favorable action has been accomplished on our request. Please do what you can for us and oblige many times.

Respectfully,

Roy W. Key

Roy W. Key
President & General Manager

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

RWK:sh

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
SEP 2 1952

August 22, 1952

Mr. Frank E. Johnson
Chairman, Operating Committee
Defense Minerals Exploration Administration
Department of Interior
Washington 25, D. C.

Re: Docket No. DMEA 946 (Lead-Zinc)
Contract No. Idm-E30
Western Montana Exploration and
Development Co., (Key-Durand)
Granite County, Montana

Dear Mr. Johnson:

This is in response to your letter of August 13, 1952 regarding a proposed amendment to provide additional funds for subject contract. We have been endeavoring to obtain from the operator the necessary information to prepare an amendment to increase the amount of funds, and to this end we have had several conferences with the operator starting considerably before the date of your letter. Attached is a request dated August 10, 1952 from Roy W. Key asking for additional funds, together with the reports by Francis A. Hancock mining engineer and Albert R. Glutzen consulting geologist giving the geologic and engineering basis for the proposal for the additional work. Also attached are copies of memoranda from J. J. Quinlan, U. S. Geological Survey and Glenn C. Reed, U. S. Bureau of Mines commenting upon the proposal.

It is the opinion of the field team that the proposed extension of the contract will determine once and for all whether an ore body exists in the area under exploration. The present information is fairly inconclusive.

In regard to the point Mr. Reed has made concerning the employment of a fulltime consulting geologist, is is the Field Teams opinion that more mapping is required, particularly underground, but this could be done in three weeks or a maximum of, at most, a month. We would therefore favor limiting the employment of a consulting geologist to this time.

Inasmuch as the company had a crew and it would be uneconomic to let this crew scatter the company is continuing work along the lines proposed in the amendment. It is therefore suggested that the amendment be made retroactive to July 28, 1952 and be put through in a minimum of time.

By Field Team, Region II

A. E. Weissenborn, T.H.K.
A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

M. E. Volin
M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosures

cc: USBM(2)
Quinlan

M. E. Velin, Member, DMEA Field Team, Region II August 21, 1952

Glenn C. Reed, Mining Engineer, Bureau of Mines

Docket DMA-946X (lead-zinc), Contract Idm-A-E30, Western Montana Exploration and Development Company, Contract Extension.

Information pertaining to past operations under the terms of the captioned contract, as supplied by the Operator in connection with a request for a contract extension is considered accurate in all respects. The amount requested appears adequate to bring the project to completion.

It should be noted that the present contract was prepared during the early stage of the assistance program before the Field Team was fully cognizant of the sharp advance in exploration costs. Experience acquired to date indicates that "normal" drifting/cross-cutting costs will range from $35 to $45 per foot in constrast with the $25 per foot provided by Contract Idm-A-E30.

The Operator has maintained a consistent effort to comply with all provisions of the contract, to establish an efficient and safe operation, and to bring the project to a satisfactory conclusion. Work completed to date, however, has only partly explored a geologically significant structure. In view of the foregoing, I believe that every consideration should be given to the Operator's request for additional funds to complete the project.

It would appear, however, that full-time employment of a consulting geologist at a rate of $750 per month is not warranted. Accordingly, if additional funds are to be provided, it is suggested that the consulting geologist be retained on a part time basis only.

Glenn C. Reed

CC: 4-Wash
2-USGS
GCR

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Materials Administration
SEP 2 1952

August 19, 1952

Memorandum

To: A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket DMA-946X (Lead-Zinc), Western Montana Exploration and Development Company (Key-Durand), Exploration Project Contract I-DMA-E30. Review of application for extension of present contract.

Western Montana Exploration and Development Company requests an additional $21,000 to explore the Shamrock ore body. The additional funds are to be used as follows:

1. Extend south drift S. 20° E., 280 feet to a point near coordinates 8,900 N., 9,000 E. From this point, crosscut 120 feet to prospect area.

   400 feet of crosscutting and drifting at $40.00 per foot. $ 16,000

2. From workings in vicinity of coordinates 8,900 N., 9,000 E., drill several short diamond drill holes to further prospect area. Total length of holes not to exceed 500 feet. Location, direction and inclination of drill hole to be determined by geology.

   500 feet of diamond drilling at $6.00 per foot. $ 3,000

3. Consulting geologist (2 months) at $750 per month — $ 1,500

4. Sampling and Assaying — $ 500

Justification for this program is made in Albert R. Glockzin's report of July 10, 1952 and Addendum A to this report dated August 10, 1952. A copy of Mr. Glockzin's report is a part of the application for additional funds.

Mr. Glockzin was hired as a consulting geologist under Amendment No. 5 to the contract. The hiring of a consulting geologist near the end of the present exploration program was allowed to determine whether an extention of the present contract could be justified.

The proposed exploration recommended in Mr. Glockzin's report was planned at a conference between A. R. Glockzin, F. A. Hancock, and R. W. Key representing the Company; and A. E. Weissenborn, U. S. Geological Survey, G. C. Reed, U. S. Bureau of Mines and J. J. Quinlan, USGS representing the Defense Minerals Exploration Administration.

Exploration to date has shown interesting amounts of zinc, but has discovered no ore. In our opinion the mineralized zones found in the present exploration is not the lower ore zone cut in Bureau of Mines diamond drill hole No. 8a. Mr. Glockzin's analysis indicates that there still is a possibility of finding ore. It is realized that the exploration target is marginal, and that the ore cut in U. S. Bureau of Mines Diamond Drill Hole No. 8a maybe in pod-like bodies. However, considering the amount of previous work done by the U. S. Bureau of Mines and the Defense Minerals Exploration Administration, I believe that this possibility should be tested before the project is closed.

J. J. Quinlan

cc: DMEA (~~2~~ 4)
USBM (~~12~~)
USGS(SRO)
Quinlan

FILE COPY
SURNAME:

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

Mr. A. E. Weissenborn
Executive Officer, Region II
DMEA Field Team
South 157 Howard Street
Spokane 4, Washington

AUG 13 1952

Re: Docket No. DMA-946 (Lead-Zinc)
Contract No. Idm-E30
Key and Durand
Granite County, Montana

Dear Mr. Weissenborn:

We have a copy of the memorandum of G. C. Reed to M. E. Volin, dated July 29, 1952, concerning the progress being made under the subject contract and the preparation of an amendment.

Since the agreed estimated total cost of the project of $66,500.00 has been expended and work is being continued on the project, it is imperative that a proposed amendment to the contract to provide additional funds be submitted to this office as soon as possible. The sooner that such an amendment is made, the less trouble will result in the auditing of the monthly progress reports and the provision of funds for the retroactive payment of incurred costs.

In the future, we recommend that all contracts that are nearing completion either because the appropriated funds have been nearly exhausted or because the objectives have been reached be reviewed by the Field engineers. If amendments to provide additional funds to successfully complete the project are necessary and are recommended by the Field engineers, they should be made out and executed before the contract has been completed because of the lack of funds.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee

APPROVED:

C. H. Johnson
Member, Bureau of Mines

D. M. Lemmon
Member, Geological Survey

HFKeller/mb
August 8, 1952
cc to: Docket
Adm. Reading File
Operating Committee
Mr. Keller (2)
Mr. Bishop
Mr. McKnight
Region II

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.
412 WESTERN BANK BUILDING
MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE
OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
R. ALLEN McGREW,
C.P.A. SECRETARY

AUG 10 1952

From: Western Montana Exploration & Development Company, Inc.
412 Western Bank Building
Missoula, Montana

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

Via: Executive Officer, DMEA Field Team
Region II - 127 South Howard Street
Spokane, Washington

Subject: DMA-946X, contract I-DMA-E30, extension of and increased funds on same, request for.

References enclosed and attached:

A. Report of consulting geologist with recommendations.

B. Letter of transmittal from Mining Engineer with cost analysis of drifting and crosscutting accomplished so far on this project.

1. It is respectfully requested that subject contract be (a) extended from present date of expiration of 26 July, 1952 to 1 January, 1953 and (b) that amount of contract be increased by $21,000.00 to make a total of $87,500.00. (Original contract for exploration was $66,500.00).

2. The requested extension of time and increase of funds to be expended according to Recommendations in Reference A with cost to be in accordance with analysis submitted in Reference B.

3. The increase in time and funds to be expended as follows:

a. Extension of present south drift 280 feet to area of United States Bureau of Mines Diamond Drill Hole 8A and 120 feet crosscutting in that area if indicated --total of 400 feet drifting and crosscutting at $40.00 per foot $16,000.00

b. 500 feet Diamond Drilling vicinity of ore bodies cut in Diamond Drill Hole 8A if indicated at $6.00 per foot..... $ 3,000.00

c. Cost of consulting geologist for 2 additional months at $750.00 per month..... $ 1,500.00

d. Sampling and assaying with particular reference to South Drift, Crosscut No. 3E and any additional ore encountered.....$ 500.00

$21,000.00

4. The object of this additional work is to reach target zone set forth in original exploration contract, to prove or disprove ore indicated in Diamond Drill Hole 8A and to observe what happened geologically between Trenches No. 13 and No. 14 - see map attached.

5. It is also requested that if the extension of time and increase in funds is granted that such extension and increase be made continuous with present contract in order that no hiatus will exsist in DMEA participation in this project to completion.

Roy W. Key

Roy W. Key
President & General Manager

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., Inc.
412 WESTERN BANK BUILDING
MISSOULA, MONTANA

OFFICERS
ROY W. KEY,
PRESIDENT AND GENERAL MANAGER
OSCAR J. DURAND,
VICE PRESIDENT IN CHARGE
OF SURFACE OPERATIONS
FRANCIS A. HANCOCK, E.M.,
ENGINEER IN CHARGE
R. ALLEN McGREW,
C.P.A. SECRETARY

AUG 10 1952

Western Montana Exploration & Development Co., Inc.
412 Western Bank Building
Missoula, Montana

Gentlemen:

Complying with your request for a brief resume of our operation for the period June 28, 1951, to July 1,1952, I am pleased to submit the following:

The purpose of this report is to show the actual work accomplished, and why the program stipulated in our D.M.A. contract was not completed, both as to time and cost.

The purpose of the project was to explore the Wasa-Shamrock Mineralized Zone and the Shamrock ore body at depth. This latter body, discovered during Bureau of Mines project 15-197, is about 250 feet south of the Wasa ore body. It was further explored by the Operator in the spring of 1951. The new exposures compare favorably with the Wasa outcrop which formerly produced about 80,000 tons of zinc ore above the lower Wasa level. The Shamrock ore body is expected, by analogy, to contain at least an equal amount of zinc ore.

In order to present a clear picture of the actual work done and the cost of same, I have prepared and attached hereto a summary sheet of all our costs for the period under review. It will be noted that some work was done that was not stipulated in our D.M.A. Contract, although the contract was amended several times to cover some of these items. Where not covered under the contract or amendments, the other items were deleted on our monthly reports, and not charged to the contract.

The contract called for 800 feet of drifting @ $26.00 per foot and 800 feet of crosscutting @ $26.00 per foot. The actual work accomplished was 570 feet of drifting and 647.5 feet of crosscutting, a total of 1226.5 feet leaving 221 feet of drifting and 152.5 feet of crosscutting short of the contract requirements. In addition to the footage made 51 sets of timber on 5 foot centers were set in the drifting and 19 sets in the crosscutting.

In the original estimate of $26.00 per foot for drifting and crosscutting the cost of Mining Equipment Rental and Equipment to be purchased was not included. These two items together with increased cost of labor and supplies made the actual cost greater

than estimated.

The actual cost per foot for the 1226.5 feet driven as shown on the cost sheet is as follows:

Labor, contract and days pay	$10.40 per foot
Supplies, Explosives, timber, pipe, rails, ties, bits, steel, etc.	5.12 per foot
Sharpening tools, drills, repairs, etc.	.576 per foot
Mine Haulage, horse, feed, clean tracks, ditch, level dump, etc.	1.425 per foot
Air Compressor & Power Plant, maintenance and operation	1.485 per foot
Hauling supplies, transportation, etc.	.995 per foot
Sampling and Assaying	.10 per foot
General Camp Maintenance, cutting wood, watchman, etc.	.89 per foot
Total	$20.991 per foot
Mining Equipment Rental	9.77 per foot
Equipment Purchased	3.29 per foot
	$34.051 per foot
Supervision & Shift Bossing	2.33 per foot
Engineering: Surveying, maps, etc.	.96 per foot
Office Work	1.68 per foot
Total cost	$39.021 per foot

The reason the project under the contract was not completed in the time specified was due to the lack of accomodations in camp. It was only during the few months when the roads were passable for cars and the men were able to drive to work that we were able to work two shifts a day in the mine. Had it been possible to maintain a two shift operation our costs would have been reduced and the project completed well within the contract specifications

Details of all other work accomplished and cost of same are shown on the summary sheet and have been explained fully in the monthly reports submitted.

Yours very truly,

Francis A. Hancock

Francis A. Hancock
Mining Engineer in Charge

Progress Report No. 1

on

The Geologic Analysis

of

The Wasa-Shamrock

Ore Bodies

by

Albert R. Glockzin

INTRODUCTION

The chronological sequence of geologic work for the month of June was as follows:

Stage 1 - Initial reconnaissance of the Wasa-Shamrock property.

Stage 2 - Analysis of published literature on the district and of unpublished maps of the property drafted by the Bureau of Mines.

Stage 3 - Conferences in Spokane, Washington with representatives of the U. S. Bureau of Mines and the U. S. Geological Survey, and reading of the unpublished report by the Bureau of Mines on the Wasa-Shamrock and Forest Rose ore bodies.

Stage 4 - Additional reconnaissance of the Wasa-Shamrock and Forest Rose mine areas.

Stage 5 - Study of Kootenai stratigrahic sections in nonmetamorphosed areas near Drummond, Montana.

Stage 6 - Analysis of regional structures in the immediate areas north, south and west of the Wasa mine.

Stage 7 - Examination of all trenches on the Wasa-Shamrock ore bodies.

Stage 8 - Examination of the Upper, Middle and Lower Wasa mines without detailed mapping owing to lack of time.

Stage 9 - Analysis of all diamond drill core logs and assays.

Stage 10 - Trench No. 13 cleaned out, deepened and reexamined.

Stage 11 - Reexamination of the three Wasa mine levels.

Stage 12 - Conclusions and recommendations.

The base map for the enclosed Plate is the June 30, 1952 monthly progress map by Francis A. Hancock, Chief Engineer of the Western Montana Exploration and Development Co., Inc.

Summary of Recommendations

1. The existing underground workings of the Wasa Mine should be geologically mapped in detail on a scale of 20' per inch.

2. A 50' horizontal diamond drill hole bearing S70W is recommended from the end of the No. 1 cross cut west.

3. It is recommended that the south drift be continued to a point near coordinates 9000E, 8900N, a distance of about 280' and bearing S20E. From this point, according to the dictates of the geologic picture, 120' of east or west crosscutting or raising is to be recommended at the appropriate time.

4. It is recommended that about 500' of diamond drill hole be drilled is a series of short holes from the underground workings in the vicinity of Hole 8A and to test the theory of intersectional ores in the vicinity of the three east cross cuts. The sites, bearings, slopes and lengths of these holes is to be dictated by the current geologic picture after the completion of the extension of the south drift and the detailed geologic mapping.

5. It is recommended that detailed structural analysis be continued throughout the drifting 280' south.

6. It is <u>NOT</u> recommended that:

a. A raise be initiated from any site in the current underground workings.

b. Drifting be attempted on the East Gossan Fault Zone south from No. 3 cross cut east.

c. Drifting be attempted southward along the vertical shear of fracture zones in the middle of No. 3 cross cut east.

SUMMARY OF CONCLUSIONS

East Gossan Fault Zone

The two major surficial expressions of the Shamrock ore body are nearly parallel gossans trending approximately north-south. They are herein named the West Gossan (Fault Zone?) and the East Gossan Fault Zone. Their northward extension over the underground Wasa Mine workings is not clear. They may combine into a single gossan or, more probably, they may represent a cutting off of the West Gossan by the East Gossan Fault Zone.

The East Gossan Fault Zone can be currently observed in 9 places; 6 underground and 3 on the surface. The five best exposures are in the Lower Wasa Mine, in the main adit, in the southdrift and in the three cross cuts to the east (numbered 1-5 on the enclosed map). It is also exposed in the Middle Wasa Mine at map point 7. On the surface it outcrops at point 6, 8 and 9 (Trench No. 13). In Trench No. 14 the rocks are so highly weathered and structures so obliterated that the relationships are unclear.

At the surface it strikes about N23W and dips about 55 to 62NE. Underground the strike is about the same but the dips are less, from about 30 to 50 NE. Thus, the fault zone is concave in dip to the northeast. On the enclosed map the solid red lines represent the 6020, 6100, 6120, 6140 and 6200 contours on the East Gossan Fault Zone using the average dip of 47 NE. This removes the curvature but with additional details this curvature will be analyzed and applied to the structural intersections involved.

In Trench No. 13 the West Gossan strikes N5W and dips about 60 E. At the current stage of geologic analysis it is thought that this gossan is cut

by the East Gossan Fault Zone at a point about 120' north of Trench No. 13. The line of intersection between the two structures is shown on the map in blue (minus the curvature), bears N16E and plunges 34 degrees.

Hole 8A

Hole 8A bearing west and sloping 45 degrees (replotted on the base map) cut three ore zones at the map positions and depths shown. The lower two are the richer and seem to be equivalent to the West Gossan at the surface in Trench No. 14. The upper ore zone is thought to be the East Gossan Fault Zone. This conclusion is based on the projection of the outcrops in Trench 14 down to the ore zones in Hole 8A in addition to the vast difference in core recovery. The upper ore zone cored less than 45% and as low as 25%. The lower two ore zones cored between 97% and 100%.

If the strike and dip of the lower two ore zones are approximately N5W60E and if they continue northward, they should intersect the East Gossan Fault Zone as indicated, i.e., with a bearing and plunge similar to the intersection of the two gossans. The 6020' contours of each of these two lower ore bodies in Hole 8A are plotted in blue and extended northward to the points where they should have been intersected in the No. 2 and No. 3 cross cuts east. These ore zones were <u>not</u> encountered in the cross cuts and it must be concluded that:

a. Their strike and dip are different from that indicated at the surface in Trench No. 14 and their projection to Hole 8A -

b. Or there is some unknown structural disturbance between the No. 3 cross cut east and Hole 8A.

The writer believes that the latter is true and that structurally it is mandatory for the south drift to be continued about 280' and turned to

S20E in order to more closely approach the known ores in Hole 8A and to determine the nature of the structural discrepancy. This information, when combined with the detailed structural analysis and additional knowledge of the East Gossan Fault Zone, should solve the major structural problem of the Wasa-Shamrock ore bodies.

HYPOTHESIS REGARDING THE IMPORTANCE OF THE WEST AND THE EAST GOSSANS

At this early stage in the structural analysis it is apparent that the ores of the Lower and Middle Wasa which have already been mined are all located in the hanging wall block of the East Gossan Fault Zone. These ores strike nearly north-south and dip steeply to the east. It is thought that the East Gossan Fault Zone may be the feeding channel for the mineralizers and that the ores were emplaced in fracture zones in the hanging wall block. This means that southward they abut against the fault and are not continuous into the foot wall block. Of course, there may have been considerable movement along the fault following mineralization.

The nature of the movement along the East Gossan Fault Zone is not yet prooved. There is some evidence for strike slip, the northeast block and hanging wall moving southeast; but there is also some evidence that the fault is normal. It may even be reverse.

The West Gossan may be a similar type fault zone and feeding channel. It can only be observed in Trenches 13 and 14. Its details are unknown, however, the lower two ore zones in Hole 8A may represent nearly vertical ore bodies in the hanging wall block of the West Gossan Fault Zone.

These concepts may be best tested by drifting about 280' S20E with subsequent crosscutting and/or raising together with a few short underground diamond drill holes. At this stage in the exploration the details of possible structural intersection and their associated ore shoots may be well enough understood to pinpoint some short drill holes into such intersections for the final test.

Footwall in Trench No. 13

Trench No. 13 has been considerably deepened and it has been observed that the footwall of the West Gossan dips 48 E at the top of the trench and 62 E at the bottom. Analysis of bedding plane (?) faulting indicates that the tight isoclinal Wasa-Shamrock anticline is overturned to the west and that the footwall of the West Gossan is on the west limb of the anticline. Thus, the footwall at depth should become more nearly vertical and eventually dip to the west, especially since the West Gossan ores have not been encountered in any of the crosscuts. This, of course, argues against the concept that the West Gossan is a cross-cutting fault zone at Trench No. 13, but it may be at Trench No. 14.

The amount of this possible curvature is unknown but it should not be much throughout the mere 180' difference in elevation between Trench No. 13 and the No. 1 cross cut west. Therefore, it is recommended that a 50' horizontal diamond drill hole bearing S70W be commenced from the end of the west cross cut in order to explore for the ore against the footwall of the West Gossan at the 6020' level.

The significance of the thrust fault near the east end of Trench No. 13 is not clear. The thrusting has been from east to west and may be the structure which accounts for the overturning of the anticline. All other known thrusts in the region are from west to east and the presence of this back thrust is currently unaccounted for.

POSSIBLE VERTICAL ORE BODIES TO BE ENCOUNTERED IN THE SOUTH DRIFT.

It has been previously mentioned that there is a possibility the ores in Hole 8A may be vertical. If this is true they would be encountered at 50' and 125' S20E along the extension of the south drift from its present terminus.

In the middle of cross cut No. 3 east are two vertical, N10E, shear or fracture zones, completely unmineralized. These may represent a fracture system in which ores are emplaced to the south near the intersection of this structure with the West Gossan. If their attitudes remain constant this structure should be encountered at 185' S20E along the south drift extended.

ADDENDUM A

August 10, 1952

EXTENSION OF THE SOUTH DRIFT

The south drift has been extended about 185' from its March 31st face. Three N10E nearly vertical faults were encountered at 108', 137' and 164'. These zones are probably the same as the N10E vertical zones in the middle of the No. 3 crosscut east. The significance of these fault zones is not as yet clear.

The two lower ore zones known to exist in Hole 8A have not been encountered in the S20E extension of the south drift. Therefore, the following conclusions are in order:

1. If the strike of the lower two ore zones in Hole 8A is N5W, then their dip is not vertical but some value less than 75E.

2. If their dip is vertical, then their strike is more easterly than N15E.

3. If the strike is N5W and the dip 60E they will be encountered as shown on the map.

4. If the strike is N10E and the dip 60E the lowermost ore zone of Hole 8A should be cut at about 265' from the March 31st face.

5. If the strike is N5W and the dip nearly vertical, then the structures and mineralization in Hole 8A do not extend very far north.

The exposures in the extended south drift have not yet revealed the nature of the structural discrepancy previously discussed. With the known ores of Hole 8A some 95' beyond the present face it is still predicted that this discrepancy will be resolved.

Albert R. Glockzin

Albert R. Glockzin

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

July 29, 1952

M. E. Volin, Member, Field Team, DMEA
Region II, Spokane, Washington

G. C. Reed, Mining Engineer

Contract Idm-E30, Key-Durand, Granite County, Montana, routine inspection

The captioned operation was visited July 17, 1952, in company with Oscar Durand, working foreman. In general, standards of work on all phases of the project are excellent. The operator has made a consistent effort to comply with all terms of the contract and to furnish detailed records of the operation.

Progress to date, however, is considerably below that originally anticipated; over-all costs are high due to the effect of fixed charges. The rehiring of additional labor will enable the operation to go forward on a two shift basis; consequently, unit costs are expected to be considerably lowered.

Advances made in the various headings in progress since the last inspection on May 17, 1952, are tabulated in the following:

Workings	Advances (feet)	Total length driven under contract (feet)
101 LDS	32	600
102 XCE	--	88
103 XCE	--	143
104 XCE	107	233
105 XCW	58	58
Main adit XC	--	56
Totals	197	1,178

Deepening of USBM angle-dozer trenches 12 and 14 to further expose the gossan zones was in progress during the period at the request of the consulting geologist recently retained under the provisions of Amendment No. 5.

It is observed that funds allotted under the contract are practically depleted. Tacit agreement has been given by the Executive Officer to prepare an amendment providing additional funds to proceed to one of the initial target areas further designated by the consulting geologist. Preparation of this amendment, however, is contingent to date together with a detailed estimate of additional requirements. I advised both the mine superintendent and the operator by phone that the information should be submitted without delay. Meanwhile, heading

RMA946X
I-DMA-E30

MONTANA STATE UNIVERSITY
Missoula
Geology Department

Letter of Transmittal

July 10, 1952

Western Montana Exploration
and Development Company
Missoula, Montana

Gentlemen:

I have the pleasure of enclosing herewith a preliminary report entitled "Progress Report No. 1 on the Geologic Analysis of the Wasa-Shamrock Ore Bodies" which constitutes a summary of my conclusions and recommendations to date.

The research which forms the basis of this report is decidedly preliminary in nature owing to the geologic complexities involved and the insufficient time available for detailed mapping. My current geologic conclusions are subject to modifications as additional time is alloted to the problem and as new field facts are available.

Respectfully

Albert R. Glockzin

Albert R. Glockzin

Consulting Geologist

Montana State University is a unit of the University of Montana, the other component institutions of which are Montana State College at Bozeman, Montana School of Mines at Butte, Montana State Normal College at Dillon, Eastern Montana State Normal School at Billings, and Northern Montana College at Havre.

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

So. 157 Howard Street
Spokane 4, Washington

July 7, 1952

Memorandum

To: Operating Committee, DMEA

From: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

Subject: Amendment No. 5, Western Montana Exploration and Development Company, Inc., Docket DMEA-946, Lead-Zinc (formerly Key-Durand)

Reference is made to my memorandum to you dated June 25, 1952 transmitting subject amendment.

The delay in getting the amendment to you was occasioned by the necessity of rewriting the amendment to reflect the change in company name in accordance with the Consent to Assignment which was effective June 1, 1952. The amendment was effective June 2, 1952. It was returned to the operator for resigning and received in this office just today.

Thor H. Kiilsgaard
Thor H. Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

cc: USBM, Spokane

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 9 - 1952

SOS 7-9-52

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

No. 157 Howard Street
Spokane 4, Washington

July 3, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
[illegible]

JUL 11 1952

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

Dear Mr. Johnson:

Enclosed are three copies of Amendment No. 6 to the Western Montana Exploration and Development Co., Inc., contract I-MA-30, which requires an extension of one month on the termination date of the contract. The time extension is necessary to permit the work to be completed. One copy has been retained for our files, one copy for the Operator, and one copy for the Fiscal Officer, Albany, Oregon.

Sincerely yours,

Thos. A. Hillquist
Thos. A. A. Disenhorn
Executive Officer, [illegible]
Field Team, Region [illegible]

Enclosures:

cc: [illegible], Spokane
[illegible], Albany

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

[illegible]

[illegible] 8, 1952

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

Dear Sir:

[illegible] copies of [illegible] for the original [illegible]. The other [illegible] have been [illegible] on all copies.

Sincerely yours,

[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

JUL 7 - 1952

DIVISION COPY

CONSENT TO ASSIGNMENT
(Key and Durand
Docket No. DMA-946
Contract Idm-E30)

To: Key and Durand, a partnership composed of Roy W. Key and O. J. Durand

and

To: Western Montana Exploration and Development Company, a Montana corporation, with principal place of business at Missoula, Montana.

Reference is made to the following:

1. Exploration Project Contract, Docket No. DMA-946, Idm-E30, dated June 28, 1951, between the United States of America, hereinafter called the "Government", and Key and Durand, hereinafter called the "Operator", for the performance of exploration work on certain lode mining claims, mill sites and tunnel sites; and

2. To Deed of Mining Claim dated October 26, 1951, recorded in Volume 34 of Deeds, page 389, records of said County, by said Operator to Western Montana Exploration and Development Company, hereinafter called "Assignee"; and

3. Assignment of Contract dated November 21, 1951, by which said Operator transfers and assigns to said Assignee all of its right, title and interest in and to said contract; to which is attached the "Acceptance of Assignment" of said Assignee dated November 27, 1951.

The Government, without releasing said Operator, hereby consents to said Assignment; Provided, That the cut-off date for contributions by the Government under the terms of said contract, as between the Operator and the Assignee, shall be June 1, 1952, the Government's contributions up to and including said date being for the account of the Operator, and after that date being for the account of the Assignee.

Dated June 18, 1952.

THE UNITED STATES OF AMERICA

JUL 7 1952

By O O Mittendorf
Acting Administrator
Defense Minerals Exploration
Administration

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 9 - 1952

So. 157 Howard Street
Spokane 4, Washington

June 25, 1952

Memorandum

To: Operating Committee, DMEA

From: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

Subject: Employment of Geologist under Key-Durand, I-DMA-E-30, Docket DMEA-946, Lead-Zinc.

Enclosed are the original and two copies of Amendment No. 5 to the subject contract to permit the employment of a geologist for a period not to exceed one month. The exploration to date at the Key-Durand property has shown interesting amounts of mineralization, but to date has discovered no ore. It is felt that perhaps we are missing a bet by lack of understanding of the details of the geologic control of the ore, which in part was uncovered in some of the trenches on the outcrop. The structure is exceedingly complex and the Field Team has long urged that some geologic studies be made so that exploration could be properly directed. Even though the hiring of a geologist comes near the end of the last date of the exploration, we feel it is distinctly worthwhile in appraising and trying to determine whether an extension of the contract should be requested to permit additional exploration. The geologist selected is on the geological staff of the University of Montana and is well known to us and his selection has our approval.

There may be some question as to the salary of $750 a month. However, I should like to point out that this same geologist received a salary of $600 a month last summer with an oil company, in addition to which he received his living and travel expenses. He will not be paid any expenses on this present job. The $750 salary will take care of all his salary and living expenses. Furthermore, if it were possible to employ this man for a longer period he would probably have been willing to work for a lesser monthly salary, but for the short-time period of one month he felt that he should receive this salary. We feel that because of the quality of the man, this is not unreasonable.

Additional justification from Mr. Quinlan of the U. S. Geological Survey is attached.

A. E. Weissenborn, Exec. Officer
DMEA Field Team, Region II

Enclosures
cc: USBM

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

So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
JUL 9 - 1952

June 24, 1952

Memorandum

To: A. E. Weissenborn, Exec. Officer, DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. 946, Key-Durand, Wasa Mine, Granite County, Montana, Amendment No. 5 to Exploration Project Contract I-DMA-E-30.

Results of exploration to date under Exploration Project Contract I-DMA-E30 have shown a need for re-evaluation of the project. Some of the basic geologic interpretation upon which the project was planned appears to be in error. No ore body similar to the Wasa ore body has been found.

The geologic problems involved are not simple. The sediments in the vicinity of the mine are folded into tight folds; metamorphism and faulting causes further complication. Mineralization is supposed to be controlled by these folds and accompanying faults.

The mine management realizes the geologic problems with which it is confronted, and has asked for the services of a consulting geologist. It will take several weeks of detailed study and mapping in the area before many of the problems are solved. As the DMEA is not staffed to undertake such studies, it is recommended that the applicant's request to hire a competent consulting geologist be approved.

J. J. Quinlan
J. J. Quinlan
Geologist

cc: USBM, Albany
USBM, Spokane
USGS, (SRO)

140

FILE COPY
SURNAME:

Hofflund
Tschert

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

DMEA 946

JUN 19 1952

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 8, Washington

Dear Mr. Weissenborn:

Reference is made to your letter to the Chief Counsel, dated April 29, with enclosures.

Attached is the consent of the Government to the assignment of the subject contract to Western Montana Exploration and Development Company.

You are authorized to fill in the cut-off date as between assignor and assignee as of any suitable date between the date of the assignment and the date of the consent. This is necessary inasmuch as this office is not advised as to the current status of the work or of vouchers for payment under the contract.

Very truly yours,

C. O. Mittendorf

6/19/52

Acting Administrator

Attachments
6/17/52

JLHofflund/em

Copy to: Mails and Files
J. L. Chambers
C. O. Mittendorf
Adm. Reading File
J. L. Hofflund
chron.

M. E. Volin, Member, DMEA Field Team, Reg. II June 18, 1952

Glenn C. Reed, Mining Engineer, Bureau of Mines

Routine inspection, Contract Idm-E30, Key-Durand, Granite County, Mont., Docket 946 (lead-zinc)

The above indicated contract operation was inspected in company with Frank Hancock, superintendent, on May 17, 1952. Since the previous inspection date (March 7, 1952) 195 feet of crosscutting and/or drifting has been completed for an aggregate of 939 feet.

Although standards of work are considered excellent, performance on a unit cost basis is low. Nevertheless, the Operator is making a consistent effort to maintain a "clean shop" and to date is meticulous in observance of the state mine safety code. Inasmuch as geologic control of the operation appears inadequate, it was suggested that a consulting geologist be retained on approval of an appropriate contract amendment by the Executive Officer. This step has been taken and a detailed mapping campaign currently is in progress.

Work to date has resulted in the probing by crosscutting at four places of a strong mineralized shear zone disclosed by earlier surface trenching and diamond drilling. Although the three intersections of this zone seen to date contain no minable ore at the horizon scope, they are considered encouraging. A recent communication from the Operator indicates that the fourth crosscut on penetrating this shear showed an ore face assaying about 8 percent zinc. This showing may be analogous to material exposed earlier by surface exploration.

It should be noted that the greater part of the contract allotment will have been expended at the expiration date on June 28, 1952. The original program, however, will not have been completed. Inasmuch as results to date appear encouraging from an exploration standpoint, an appropriate extension of the program should be anticipated and a justification prepared in support of a request for additional funds.

Glenn C. Reed

Orig. to files
cc: USGS (2)
Wash., D.C. (2) ✓
GCR

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

So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 5 1952

May 29, 1952

Memorandum

To: A. E. Weissenborn, Exec. Officer, DMA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Routine inspection, Project No. DMA-246, Exploration Project Contract I-DMA-130, May-Durand, Wasa Mine, Granite County, Montana.

A routine inspection of Exploration Project I-DMA-B-30, Wasa mine, Granite County, Montana, was made May [illegible] and [illegible], 1952.

The No. 3 east crosscut has been advanced to a point approximately 75 feet east of the main south crosscut. The crosscut has not been advanced far enough to cut the mineralized fault zone.

Samples were cut across the fault zone in the No. 1 and No. 2 east crosscuts. Assay results of these samples are not yet available.

The results of the exploration program to date have shown a need for re-evaluation of the project. No ore body similar to the Wasa ore body has been found.

As soon as snow conditions permit, I plan to make a study of surface and underground workings in the vicinity of the mine. Mr. G. C. Popoff, U. S. Bureau of Mines, who has done considerable work in the area for the U. S. Bureau of Mines and upon the strength of whose report the loan was granted, plans to go over the area with me.

J. J. Quinlan
Geologist

cc: UMM, Spokane
DMA ✓
USGS (GRO)

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

So. 157 Howard Street
Spokane 4, Washington

April 29, 1952

Through: Operating Committee

ans. 6/17/52
JLH/lem

Mr. J. L. Hofflund, Chief Counsel
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Key-Durand, DMEA-946
Idm-E30

Dear Mr. Hofflund:

Enclosed are photostats of instruments showing the transfer of title of the Key-Durand mining claims to the Western Montana Exploration and Development Company, Inc., as requested in your memorandum of March 19, 1952. Also enclosed is an Assignment of Contract to the Western Montana Exploration and Development Company which you returned to this office with your memorandum.

Please review and take appropriate action as requested in the Field Team's memorandum of February 29, 1952.

Sincerely yours,

Elton A. Youngberg

Elton A. Youngberg
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY - 2 1952

Enclosures.

RECEIVED
MAY - 5 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

cc: USBM

Mr. L. G. Houk calling Mr. Needham, Region V.

Mr. Needham: The third one is for zinc-lead.

Mr. Houk: I don't have zinc-lead, but I can transfer a message to Mr. Moulds who has that.

Mr. Needham: It is under Docket DMEA-2141; Contract Idm-E239. New Dall Mining Company. The Government signed contracts were sent to him. We had a letter from him stating: We wish to advise that our work will be delayed for two weeks, and we will notify you.

Mr. Houk: What was the date on the letter.

Mr. Needham: It was written March 3rd.
That is another one that is deferred by the owner.

140

FILE COPY
SURNAME:

Guthrie

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

March 19, 1952

Memorandum

To: Mr. A. E. Weissenborn, Executive Officer
Field Team, Region II

From: J. L. Hofflund
Chief Counsel

Subject: Key - Durand -- DMEA 946

Reference is made to your memo of February 29, 1952, to the Operating Committee concerning the assignment of the captioned contract.

The assignment is in proper form but there is no accompanying evidence that an appropriate right in the property has been conveyed to the new operator. As indicated in General Counsel's letter of August 24, 1951, to Mr. Key, the property upon which the project is to be performed should be deeded or leased to the new operator and in the latter case the owners should execute the standard consent agreement. Copies of the documents showing the arrangements which have been made with respect to the property should be sent to us for consideration along with the request for the approval of the assignment.

J. L. Hofflund

cc 3/20

J. L. Hofflund
Chief Counsel

RRGuthrie/ema
Copy to: Mails & Files
J. L. Hofflund
R. R. Guthrie
~~G. C. Selfridge~~ D. E. Moulds
Chron.

assignment with the instrument

So

Possible Extension

R. E. Volin, Member, DMEA Field Team, Reg. II March 18, 1952

Glenn C. Reed, mining engineer, Bureau of Mines

Contract Idm-E30, Key-Durand Mine, Granite County, Mont.

Work accomplished under DMEA contract at the subject property was inspected on March 7, 1952. Since the effective date of this contract an aggregate of 744 lineal feet of crosscutting and/or drifting has been performed, and 308 lineal feet of sill timber has been placed. In addition to the foregoing, a 1-5/8 mile access road has been constructed and a mine shop has been built.

Although performance may be considered low, work completed is in accord with good operating practice and standards are high. The operation has been hampered by labor turnover and, more recently, by absenteeism resulting from a flu epidemic.

The three crosscuts driven to date have probed a mineralized shear zone ranging in width from 1 foot to more than 30 feet wide over a strike extent of about 480 feet. Locally, this shear zone contains small lenses, fragments, and rounded nodules of marmatite accompanied by sparse galena and occasional pyrite in a siliceous gangue. In my estimation, however, no part of this shear zone as exposed to date can be considered minable. Nevertheless, this zone should be explored to the fullest extent within the limitations of available funds. With an advance of 60 feet the main heading will be directly under USBM Trench #13 where an unusually encouraging mineralized zone was exposed. From this point, a crosscut east should be driven to probe the shear zone. If mineralization is found to be sufficiently intense at this intersection it should be prospected both north and south by drifting and succeeded by raising to surface for ventilation.

The above plan was discussed with the mine manager in general terms only. The Field Team should review the situation as soon as convenient and advise the operator accordingly. In order that the exploration may be concluded successfully it is essential that sound geologic advice be provided.

Glenn C. Reed

cc: USGS, Spokane (with 2 cys for Wash.)
GCR

946

MONTANA

GRANITE COUNTY

February 1, 1952

Key and Durand, Idm-E30, Pb-Zn

50-50 of $33,250.00

1 year

The purpose of this project is to explore the Wasa-Shamrock mineralized zone and the Shamrock ore body at depth.

The work to be done includes:

1. 800 feet of drifting on the main structure to intersect the Shamrock ore body.

2. 800 feet of crosscutting and drifting for exploration of the Shamrock and other possible ore bodies.

3. 10 hours of surface exploration by bulldozer.

4. 700 feet of diamond drilling from underground stations.

5. 150 feet of timbering of old workings.

Mining has been much more difficult than anticipated, costs have been high, and progress slow.

The main Wasa-Shamrock shear zone has been intersected in two crosscuts and has proved to contain interesting amounts of sphalerite and galena. Present sampling results indicate that the entire shear zone is below ore grade but that the hanging wall portion may be of minable grade and thickness. Further sampling is required.

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C. 200

JAN 29 1952

Mr. Roy W. Key
Key & Durand
413 Western Bank Building
Missoula, Montana

Re: DMA-946X, I-DMA-E30
DMAC-719, DO-H-5, Allotment No. H-5

Dear Mr. Key:

This will acknowledge your letter dated January 20, 1952, requesting that we procure for you a directive as well as a priority rating so that you may place an order with the Colorado Fuel & Iron Company for twenty tons of mine rails.

Since you have not requested an allocation of controlled materials, it will be necessary that you file Form CMP4-C requesting the twenty tons of steel for the quarter in which the Colorado Fuel and Iron Company will roll these rails.

Please forward this application CMP4-C immediately so that it can be put in line for consideration.

Sincerely yours,

C. O. Mittendorf (for)

C. O. Mittendorf
Acting Administrator
Defense Minerals Exploration
Administration

Enclosure

REAdams/hb

Copy to: Adm. Reading File
DMEA Docket

1-29
J.D.

DN

3969

January 20, 1952

CMP4-C
20 tons steel
in particulars
Jerome

Dear Mr. Mittendorff:

Refer: 1. DMA-946X, I-DMA-E30, Date 6-28-51

2. DMAC-719, DO-H-5, Allotment No. H-5
Date 12-20-51

Under Reference (2) we recently tried to place an order for 20 tons of Mine Rails, with local outlet of Colorado Fuel & Iron Co., Continental Oil Building, Denver 2, Colorado and was told that would have to have in hand a Defense Production Administration Directive as well as the priority rating indicated above. DMA Field Team in Spokane, Washington was consulted, we were advised from there to seek your assistance in securing the DPA Directive required to purchase the desired 20 tons of Mine Rails.

Please look into this matter at your early convenience and do what you can to get the Directive. If the Directive is made out to our local supplier, please make to Missoula Mercantile Company, Missoula, Montana. If to us or the Colorado Fuel & Iron people the addresses are indicated.

Kindly expedite this matter as we are almost out of rails at Durand Lead-Zinc as indicated by Reference (1).

Respectfully,

Roy W. Key

Roy W. Key
Key & Durand
413 Western Bank Building
Missoula, Montana

Mr. C. O. Mittendorf, Acting Director
D. M. E. A. (Formerly DMA)
Washington 25, D. C.

RWK:sh

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 22 1952

Contracts + Audit

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 4, Washington

January 14, 1952

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

Re: Key-Durand
Exploration Project Contract I-DMA-E30

Dear Sir:

Enclosed are three copies of Amendment No. 4 to the subject contract.

Copies of this amendment will be sent to the Operator and to the Fiscal Officer.

Sincerely yours,

A. E. Weissenborn
ICC

A. E. Weissenborn,
Executive Officer, DMEA
Field Team, Region II

Enclosures.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
JAN 21 8 11 PM '52

400

FILE COPY
SURNAME:
Ellis
Johnson (fw)

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

OCT 25 1951
G. E.

Contract Service Section
General Accounting Office
Washington 25, D. C.

Re: Docket DMA-946X
Key and Durand
Exploration Project Contract
Adm-130
Amended October 18, 1951

Gentlemen:

Enclosed for recording in your office are the originals of two amendments to the Exploration Project Contract between the operator named in the above reference and the Government of the United States.

Sincerely yours,

(signed) FRANK E. JOHNSON (fw)

Acting Director
Production Expansion Division

Enclosures-2

EWEllis/jem
10-24-51

cc to: Adm. Reading File
Reports & Records
Messrs. Mittendorf, Olund
Mr. Ellis
Field Team, Region II (2)
Docket

PED

C
O
P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
RECEIVED
OCT 23 1951
Defense Minerals Administration,
Production Expansion Division.

October 19, 1951

NMG 946

Mr. C. O. Mittendorf
Production Expansion Division
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Dear Mr. Mittendorf:

Enclosed are three copies each of amendments to the following Exploration Project Contracts:

Amendment No.	1	Elkhorn Mining Company	Idm-E144
Amendments "	2---3	Key and Durand	I-DMA-E30
Amendment "	3	Elkhorn Mining Company	Idm-E115
Amendments "	2---3	Alps Mining & Milling Company	I-DMA-E17

A copy of each amendment has been sent to the Regional Finance Office.

Sincerely,

/s/ A. E. Weissenborn,

A. E. Weissenborn
Executive Officer, DMA
Field Team, Region II

Enclosures

Contract Service Section
General Accounting Office
Washington 25, D. C.

Re: Docket No. EM-946
Key-Gursand Property
Exploration Project Contract
IBm-130
Amended June 28, 1951

Gentlemen:

Enclosed for recording in your office is the original of an amendment to the Exploration Project Contract between the operator named in the above reference and the Government of the United States.

Sincerely yours,

C. O. Mittendorf

C. O. Mittendorf, Director
Production Exploration Division

Enclosure-1

Ellis/jem

10-2-51

cc to: Adm. Reading File
Reports & Records
Messrs. Mittendorf, Glund
Mr. Ellis
Field Team, Reg. II
Docket

FILE COPY
SURNAME: 100

Mittendorf (fw)

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

OCT 4 1951

Mr. A. E. Weissenborn
Executive Officer
Field Team, Region II
Defense Minerals Administration
South 157 Howard Street
Spokane 4, Washington

Re: Docket DMA-9461
Contract Idm-E30
Key and Durand

Dear Mr. Weissenborn:

I wish to thank you for the memorandum dated September 14, prepared by yourself and Mr. Volin, which cites a possible conflict of title with respect to the mining claims which are the subject of the captioned exploration contract.

Your memorandum has been circulated among the Engineers of the Production Expansion Division, as well as through the Legal Division. Counsel has stated his concurrence in your conclusion that no action should be taken unless actual injunction proceedings are instituted.

Sincerely yours,

C. O. Mittendorf

C. O. Mittendorf, Director
Production Expansion Division

COMittendorf/fw
10/2/51

cc: Reports & Records
Field Team, Reg. II
Mr. Mittendorf, Mr. Olund
Mr. Ellis
Admr. Reading File
Docket

Mr. Eelin

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane 4, Washington

HISTORICAL FILE COPY

To	Init.	Date
400	HB	9/17/51
		"
210		

RECEIVED
SEP 17 1951
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

September 14, 1951

DEPARTMENT OF THE INTERIOR
RECEIVED
SEP 17 1951
Defense Minerals Administration,
Production Expansion Division,

Memorandum

To: C. O. Mittendorf, Director, Production Expansion Division

From: Field Team, Region II

Subject: Title to part of ground involved in Key-Durand exploration project. Granite County, Montana, Docket DMA-946X, Contract I-DMA-E 30.

On a recent inspection trip one of our geologists stopped at the Forest Rose mine to inquire the way to the Key-Durand property. As discussed in the attached memo, he was informed by Mr. Edward Hughes that there may be some question concerning the title of the Jackpine claim on which the Wasa mine is located. This claim is involved in the DMA exploration on the property because a crosscut is being driven from the Wasa mine to the Shamrock claim. The objective of the work is to explore for possible ore deposits on the Shamrock claim concerning which there is, as far as we know, no dispute. Access to this objective, however, is through the Jackpine claim. No ore is expected to be found on the Jackpine claim, although conceivably some might be cut in the exploration.

The Executive Officer discussed the matter by phone with Dr. Roy Key. Dr. Key states that he has had several discussions with Mr. Hughes, and that his attorney is making every effort to reach an amicable settlement without going through the courts. Dr. Key states that two attorneys have advised him that his title to the ground in dispute is valid.

We have not attempted to give the complete details of the case, which is much more complicated than appears from Youngberg's brief memo. We are not, in any event, qualified to pass on the legal aspects--indeed, this may have to be determined by court action. It is quite possible that the Key-Durand title may be perfectly sound. The last sentence in Youngberg's memo may be modified by proper legal investigation and interpretation.

The objective of the exploration is on ground on which apparently there is no question as to the ownership, and only the access to this ground is in dispute. Even if the title should

revert to Mr. Hughes, Mr. Hughes indicated that he would be willing to make some arrangement for operating through the Jackpine claim. So perhaps the legal aspects are not too important; however, this is an awkward situation which we feel we should bring to your attention. We hope that it will not adversely affect the DMA contract, but we do not know how far the Government's responsibility extends in these matters. The suggestion occurs that if we are to stop DMA contracts every time a threat of a law suit arises, we may find ourselves in an embarrassing situation with respect to the success of the program on the one hand and the ire of the operator-contractor on the other. On this basis perhaps we should take no action unless an actual injunction is brought.

By Field Team, Region II

A. E. Weissenborn

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

M E Volin

M. E. Volin, Member
(U. S. Bureau of Mines)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 4, Washington

September 4, 1951

Memorandum

To: A. E. Weissenborn, Executive Officer, Region II, DMA.

From: Elton A. Youngberg, Geologist, U. S. Geological Survey

Subject: Question of title of Key - Durand to Wasa Mine ground on the Jackpine Claim - I-DMA-E30.

Mr. Edward Hughes, former operator of the Wasa mine, has advised the writer that he has notified the Keys - Durand partnership that they are trespassing upon his ground at the Wasa mine. Exploration work is being done upon this and adjacent gound under DMA Contract I-DMA-E30 by Key and Durand.

Key and and Durand claim title to the ground in question by the right to locate abandoned claims. Mr. Hughes asserts the claims in question were not abandoned and that notice of assessment work to hold this ground has been properly recorded. Mr. Durand informed the writer that Mr. Hughes had filed the notice of assessment, but had not done the work as set forth in the notice and the claims were open for relocation.

Mr. Durand to support his case had three men go over the claims at the time of relocation to determine if the assessment work had been properly done. He believes he has sufficient evidence to prove that the required assessment work was not done by Mr. Hughes.

To settle the title to the claims in question will undoubtedly require court action. It now appears from evidence at hand that the title of the Wasa mine is highly questionable and the title to any ore developed under the Key and Durand contract on this ground may revert to Mr. Hughes.

400

FILE COPY
SURNAME:

Ellis
Mittendorf

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

OSC

OCT 4 1951

Contract Service Section
General Accounting Office
Washington 25, D. C.

Re: Docket No. DMA-9461
Key-Durand property
Exploration Project Contract
Idm-130
Amended June 28, 1951

Gentlemen:

Enclosed for recording in your office is the original of an amendment to the Exploration Project Contract between the operator named in the above reference and the Government of the United States.

Sincerely yours,

C. O. Mittendorf (J. W.) p.f. 10-4

C. O. Mittendorf, Director
Production Expansion Division

Enclosure-1

EWEllis/jem

10-2-51

cc to: Adm. Reading File
Reports & Records
Messrs. Mittendorf, Olund
Mr. Ellis
Field Team, Reg. II
Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
RECEIVED
OCT 1 1951
Defense Minerals Administration,
Production Expansion Division.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
OCT 1 8 40 AM '51

September 26, 1951

OFFICAL FILE COPY

To	Init.	Date
Hoo	A Ee	10-1
210		

Mr. C. O. Mittendorf, Director
Production Expansion Division
Defense Minerals Administration
Department of Interior
Washington 25, D. C.

Re: DMA Docket 946X
Key-Durand property
Granite County, Montana

Dear Mr. Mittendorf:

Enclosed are three signed copies of an amendment to the Exploration Project Contract of the subject property. One copy has been sent to the Regional Fiscal Officer.

Sincerely yours,

A. E. Weissenborn KG

A. E. Weissenborn
Executive Officer, DMA
Field Team, Region II

Enclosures

FILE COPY
Surname:

Liebert

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

August 24, 1951

Mr. Roy W. Key
Key & Durand
413 Montana Building
Missoula, Montana

Dear Mr. Key:

Reference is made to your letter of August 17 in which you request the consent of the Government to the assignment of your exploration project contract (Docket No. DMA-946X) to a corporation which you propose to form.

We perceive no reason why your request should not be granted, provided the corporation agrees to assume all the obligations of the contract and obtains title to the property made the subject of the exploration project, or in lieu of title, obtain subordination of the owner's rights to those of the Government under the provisions of the exploration contract.

When the corporation is formed, we suggest you execute your assignment, obtain the agreement of the new corporation to assume the obligations of the exploration contract, and submit both to this Administration for written consent to the assignment, together with evidence that the above title provision has been met.

Sincerely yours,

/s/ J. G. Liebert

John G. Liebert, Acting for
J. L. Hofflund, General Counsel

CJKoontz/em

Copy to: Repts. & Records
Adm. Reading File
C. J. Koontz
J. L. Hofflund
Regional Office, Reg. II, Spokane, Wash.
Chron

140

Ans. 8/24/51
C J K/lje

Missoula, Montana
August 17, 1951

Refer: Docket No DMA-946X
I-IMA-E30

Dear Dr. Boyd:

In view of the very favorable ore showing we have encountered in our drift South to Shamrock area from Lower Wasa Tunnel, (See figure No. 2 of I DMA-E30), it is advisable from a legal standpoint and from a financial angle toward the construction of a mill in the near future, for the benefication of Durand Lead-Zinc ore, that Mr. Durand and I form a Corporation under the Laws of Montana, to be controlled by us, at once. In forming such a Corporation it is desirable that we have permission in writing to assign our Development Contract to the Corporation to be formed. Please see paragraph No. 15 of MF-200.

Please grant permission for such assignment mentioned above as quickly as practicable. A copy of this letter is going to Mr. Weissenborn at Spokane DMA Field Office. Mr. Glenn C. Reed of Spokane Office, United States Bureau of Mines, was at our property yesterday. (August 16, 1951)

Respectfully,

Roy W. Key

Roy W. Key
Key & Durand
419 Montana Building
Missoula, Montana

Dr. James Boyd, Chief
U. S. Bureau of Mines and Defence Minerals Administration
Department of the Interior
Washington 25, D. C.

Copy to: Messrs. Weissenborn & Reed
Spokane, Washington

RWK:sh

RECEIVED
AUG 21 1951
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 21 1951

FILE COPY
SURNAME:

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

Herres
O'LEARY
(FOR MOTE)
McKnight
Gwin
Stuart 7/17

July 13, 1951

DMA-946X
Roy A. Durand
Missoula, Montana

Hon. Tom Connally
United States Senate
Washington 25, D. C.

My dear Senator Connally:

In reply to your request of July 10 for information concerning the application for exploration assistance from Defense Minerals Administration mentioned in Mr. Roy A. Key's letter to you dated June 25, I am pleased to advise you that this application was approved and the contract covering the project has been sent to the applicant.

If I can be of further assistance to you at any time, please feel free to call on me.

Sincerely yours,

JAMES BOYL

Administrator

Enclosure

CHERRES:ks

cc: Administrator
Reports & Records Unit
Mote
McKnight
Herres
Files

FILE COPY
SURNAME:

Mittendorf
Stuart 7/13

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

July 13, 1951

Hon. Sam Rayburn
Speaker of the House
of Representatives
Washington 25, D.C.

Aug-946 X

My dear Mr. Speaker:

In reply to your letter of July 5, I am pleased to report to you that on June 28, 1951 the Defense Minerals Administration entered into a contract with Messrs. Key and Durand, of Missoula, Montana, for the exploration of possible sources of lead and zinc.

The contract provides that the Government will participate in the expense of this work up to 50 percent of the cost thereof.

I shall be glad to furnish you with any further details you may desire regarding the matter.

Sincerely yours,

JAMES BOYD
Administrator

COMittendorf/fw

cc to: Admr Reading File
Mr. Mittendorf, Mr. Olund
Mr. Ellis
FILES

SAM RAYBURN
4TH DISTRICT, TEXAS

The Speaker's Rooms
House of Representatives U.S.
Washington, D.C.

July 5, 1951

~~LANDON F. STROBEL~~
~~Mittendorf~~
~~Mr. Ellis~~
Answered by Mittendorf (fw)
7-13-51

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
JUL 10 1951
LANDON F. STROBEL
Executive Secretary

Dr. James Boyd, Director
Bureau of Mines
Department of the Interior
Washington, D. C.

Dear Dr. Boyd:

I am writing you in the interest of Dr. Roy W. Key, who, I understand has made application for a loan with reference to developing mining property in Granite County, Montana, Docket No. DMA-946X.

I will greatly appreciate it if you will give me any information you have with reference to the status of this application.

With all good wishes, I am

Sincerely yours,

Sam Rayburn

FILE COPY
SURNAME:

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

Herres
Brothers
Not

June 29, 1951

DMA-946X
Durand Lead-Zinc Property
Granite County, Montana

Hon. Mike Mansfield
United States Senate
Washington 25, D. C.

Dear Mike:

In reply to your letter of June 27, a contract has been executed on the exploration project of Key and Durand of Missoula, Montana.

I am pleased to inform you that the contract was mailed to Montana on June 28, 1951.

In case I can be of further assistance to you at any time, please feel free to call on me.

Sincerely yours,

JAMES BOYD

Administrator

OHERRES:ks

cc: Administrator
Strobel
Mote
McKnight
Herres
Files

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

June 28, 1951

Memorandum

To: C. O. Mittendorf

From: J. L. Hofflund

Subject: Key and Durand exploration contract -- Docket No. DMA-946X

This office has reviewed the contract in the above-styled case and finds it satisfactory for execution subject to:

1. The change of the numbers with which the figures attached to the contract are marked or those by which they are referred to in Exhibit A so that the designations correspond and identify the attachments positively.

2. The exclusion from item 6 of Exhibit A of "general overhead" and any change in the estimated amount of the item which may be necessary as a result. The contract explicitly excludes general overhead from allowable costs.

At the time of execution the effective date should be inserted in the contract.

Your file in this case is returned herewith.

J. L. Hofflund
General Counsel

Attachments

FILE COPY
SURNAME:

Ellis
McOlund
Strobel

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

June 28, 1951

Mr. Frank McAtee, Jr.
Contract Service Section
General Accounting Office
4th Floor, New GAO Building
Washington 25, D.C.

Re: Docket DMA-946X
Exploration Project Contract
I-DMA-E30
Key and Durand
Missoula, Montana

Dear Mr. McAtee:

Enclosed for recording in your office is the original, signed copy of an Exploration Project executed between the operator named in the above reference and the Government of the United States.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

Enclosure-1

COMittendorf/fw
cc to: Admr Reading File
Messrs. Strobel
Herres
McKnight
Weissenborn, Reg.II
Field Finance Sec., Bu.Mines
Mittendorf, Olund
Ellis
FILES

FILE COPY
SURNAME:

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

June 28, 1951

Messrs. Key and Durand
413 Montana Building
Missoula, Montana

Re: Docket No. DMA-9461

Gentlemen:

Enclosed find executed Exploration Project Contract No. I-DMA-E30, dated June 28, 1951, with attached Exhibits and maps; also a set of Monthly Progress Reports (Form MF-104). A progress report is to be submitted monthly in quadruplicate to the DMA field representative in your area, where additional copies may be obtained.

Kindly note we have changed the numbering on the attached maps to agree with Exhibit A. Also we have deleted "general overhead" from Exhibit A in accordance with Paragraph 10 of the Contract.

Any questions appertaining to this project should be referred to Mr. A. E. Weissenborn, Executive Officer, DMA Field Team, Region II, South 157 Howard Street, Spokane, Washington. Please notify Mr. Weissenborn when you begin work on this project.

A press release dated May 14, 1951 on "Questions and Answers on the Minerals Exploration Program" is enclosed for your information.

Sincerely yours,

C. O. Mittendorf

C. O. Mittendorf, Director
Production Expansion Division

Enclosures-6

EWEllis/fw
cc to: Admr Reading File
Messrs. Strobel
Herres
McKnight
Mittendorf, Olund
Ellis
Mr. Weissenborn, Reg.II
Field Finance Sec., Bu.Mines
Contract Service Sec., GAO
FILES

TELEPHONE CONVERSATION

DATE: June 27, 1951 (12:15 p.m.)

PARTICIPANTS: Mr. Sullivan
Office of Cong. Mike Mansfield (Montana)
Washington, D. C.

and

Landon F. Strobel, Executive Secretary
Defense Minerals Administration
Washington, D. C.

SUBJECT: DMA-946X, application of Key and Durand, 473 Montana Building, Missoula, Montana.

Mr. Sullivan called Mr. Strobel to inquire as to the status of the subject application.

Mr. Strobel advised Mr. Sullivan that the case had been acted upon by the Commodity Branch and had been received in the Production Expansion Division today, but that no action had been taken as yet.

Mr. Sullivan expressed satisfaction with the handling of the case and stated that Mr. Roy W. Key had been concerned about the June 30 deadline.

LFSTROBEL:hb

Copy to: Miss Lanahan ✓

MIKE MANSFIELD
1ST DISTRICT, MONTANA

COMMITTEE:
FOREIGN AFFAIRS

Congress of the United States
House of Representatives
Washington, D. C.

DMA-946X

June 27, 1951.

Mr. JamesBoyd, Administrator,
Defense Minerals Administration.

Dear Jim:

Mr. Strobel of your staff informed me that the application of Dr. Roy W. Key of Missoula, Montana is now being considered in the requirements section. I am writing to ask you to keep me informed on the developments of this application.

Thanking you and with best personal wishes, I am

Sincerely yours,

Mike Mansfield

5

BUREAU OF MINES
WASHINGTON, D. C.

1951 JUN 28 PM 12 39

~~HARTON F. STROBEL~~

United States Senate

COMMITTEE ON FOREIGN RELATIONS

July 10, 1951.

Respectfully referred to
Doctor James Boyd
Chief, Bureau of Mines and
Defense Minerals Administration
Department of the Interior
Washington, D. C.

with thanks for such consideration as the communication herewith submitted warrants, and for a report thereon, to accompany return of inclosure.

By direction of

Jim Eastland
U.S.S.

TC/3h

JUL 13 1951

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.
JUL 12 10 05 AM '51

COPY

ROY W. KEY, M.D.
Eye, Ear, Nose and Throat
413 Montana Building
Missoula, Montana

June 25, 1951

My dear Senator Connally:

For an old Texas boy who strayed off up to the Great Northwest, would you please be so kind as to contact Dr. James Boyd, Chief of U. S. Bureau of Mines and Defense Minerals Administration regarding Docket No. DMA-946X, which represents an application for a development loan to assist in blocking an approximately 200,000 tons of zinc, lead, and copper ore near Hall, Granite County, Montana? If Dr. Boyd is not available when you call, Mr. Landon Strobel is Executive Secretary of Defense Minerals Administration.

The original of above application was filed with DMA on March 26, 1951, but to date we have no action on our application--June 30th coming is deadline for approval of this application. Therefore, please lose no time in calling Dr. Boyd for favorable consideration of our application.

Sincerely,

Roy W. Key, M. D.
Key and Durand
413 Montana Building
Missoula, Montana

Senator Tom Connally
U. S. Senate Office Building
Washington 25, D. C.

RWK:mc

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

DEFENSE MINERALS ADMINISTRATION
FILE COPY
14-1110037 EXPENSES OF DEFENSE
PRODUCTION EXECUTIVE OFFICE OF THE
PRESIDENT
(ALLOTMENT TO INTERIOR)
1951 10.1

Herres
Brown

JUNE 25, 1951

DR. ROY W. KEY
KEY AND DURAND
413 MONTANA BUILDING
MISSOULA, MONTANA

RETEL 24th TOUR APPLICATION RECEIVING PROMPT AND FAVORABLE

CONSIDERATION.

Otto Herres

OTTO HERRES, CHIEF
LEAD-ZINC BRANCH
DEFENSE MINERALS ADMINISTRATION

OHerres'lm

cc: Mr. Maye
Audits
Strobel
Mote
McKnight
Herres
Files

CLASS OF SERVICE

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WESTERN UNION

W. P. MARSHALL, PRESIDENT

SYMBOLS
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PRA069 PE 10 6/22 51 JUN 24 PM 10 50

PR MSA074 NL PD=MISSOULA MONT 24=

MESSRS STROBEL HERRES AND LYON DEFENSE MINERALS ADMIN=DEPT OF THE INTERIOR WASHDC==

REFER DMA-946X WEISSENBORN EXECUTIVE OFFICER FIELD TEAM SPOKANE REPORTS OUR FILE RETURNED TO YOU WITH RECOMMENDATIONS VIA AIR MAIL FROM SPOKANE 11 JUNE UNDER IMPRESSION HERE 30 JUNE DEADLINE FOR EITHER APPROVAL OR REJECTION OF OUR APPLICATION PLEASE BE SO KIND AS TO INFORM US BY TELEGRAM OR AIR MAIL YOUR DISPOSITION OF OUR APPLICATION WE HAVE COMPLIED PROMPTLY TO ALL YOUR REQUESTS=

ROY W KEY KEY AND DURAND 413 MONTANA BUILDING MISSOULA MONT=

...ATIONS FROM ITS PATRONS CONCERNING ITS SERVICE

BUREAU OF MINES
WASHINGTON, D. C.

1951 JUN 25 AM 7 53

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 25 1951
8:30 a m
LANDON F. STROBEL
Executive Secretary

FILE COPY
SURNAME:

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

June 22, 1951

Mr. Roy W. Key
413 Montana Building
Missoula, Montana

Subject: DMA-946X
Re: Exploration Loan
Wasa Mine (Durand Lead-Zinc property)

My dear Mr. Key:

Receipt is acknowledged of your application and attachments of June 15, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-946X and was referred to Mr. Otto Herres, Chief, Lead-Zinc Branch on June 19, 1951.

In any future correspondence relating to your application, kindly refer to DMA-946X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
>Files
Herres
Lyon

DMA 946

Paraphrased for McKnight Herrera 6/5/51

6-21-51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 946X

To: Director, Production Expansion Division

Commodity Zinc, lead

From: Director, Supply Division

Total Amount $66,500

Govt. Participation 50%

1. Name and Address of Applicant Key and Durand, 413 Montana Building, Missoula, Montana

2. Location of Property 19 claims in S 1/2 of Section 27, and N 1/2 of Section 34, T. 9 N. R. 12 W, MPM, Dunkelberg Mining District, Granite County, Montana

3. Mineral or metal Zinc and lead Is it listed in Section 9 of MO-5?

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good see attached statement

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? (If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes (question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

4. (a) The rocks of this region include Jurassic and Cretaceous quartzites, argillites, shales, and limestones, which have been folded anticlinally at the deposit and also cut by a number of faults. Mineralization consists of replacements in argillite and limestone in the Kootenai formation.

The area was explored by the Bureau of Mines by means of trenching and diamond drilling, which disclosed several mineralized beds below those previously mined. The applicant proposes to extend crosscuts from the original workings to reach the beds to be explored and also plans to diamond drill from underground stations in advance of crosscutting and drifting. This work has been recommended by Field Team, Region II (letter of June 15, 1951).

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202 _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? _____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

_____

_____

_____

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? Yes If so, attach a draft.

e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? Has been made

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes

b) If so, are sufficient data furnished? Yes If so, attach a draft.

c) Is a field check needed? Has been checked

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? Yes If so, attach a draft.

c) Are rents and charges reasonable? Yes

d) Is a field check needed? Has been checked

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Has been checked

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data? Yes

c) Reasonable? Yes

d) Field check needed? Has been checked

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by: A. J. Bodenlos GS

G. A. Apell BM

Date 6/21/51

97692

16. It is recommended that the project be approved, in concurrence with the action by Field Team, Region II.

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

So. 157 Howard Street
Spokane 4, Washington

June 15, 1951

Mr. Landon F. Strobel
Executive Secretary
Defense Minerals Administration
Department of Interior
Washington 25, D. C.

Re: Key and Durand Property
Granite County, Montana
DMA Docket 946 X

Dear Mr. Strobel:

Enclosed herewith are six copies of an exploration contract on the subject property together with all the necessary exhibits. Also enclosed are four copies of a memo from the Field Team, Region II, referring to the Key and Durand Property in Granite County, Montana. The original docket material is also enclosed.

Please forward the above to the Lead-Zinc Branch.

Yours very truly,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMA
Field Team, Region II

Enclosures

cc: M.E. Volin
S.M. Shelton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
So. 157 Howard Street
Spokane 4, Washington

June 15, 1951

Memorandum

To: Otto Herres

From: Field Team, Region II

Subject: Exploration Contract Key and Durand Property, Granite County, Montana, DMA 946 X.

Enclosed are six copies of an exploration contract on the subject property together with all the necessary exhibits. All docket material received from you is returned herewith.

No special examination was made as the Bureau of Mines had previously done work on the property and is familiar with it. The exploration contract which differs somewhat from the applicants' original exploration proposal was worked out in a conference between representatives of the applicants, the Bureau of Mines, and the Geological Survey, and has been signed by the applicants. Please note, however, that only five copies have been signed; we assume that the sixth copy can be signed later by the applicant.

The Field Team considers the proposal in its present form as a reasonable one and recommends favorable action.

By Field Team, Region II

A. E. Weissenborn
A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

M E Volin
M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosures

cc: M. E. Volin
S. M. Shelton

a.e.e

TELEPHONE CONVERSATION

DATE: June 6, 1951

PARTICIPANTS: Mr. Roy W. Key
Missoula, Montana
Phone: 5995

and

Landon F. Strobel
Executive Secretary, DMA

SUBJECT: DMA-946X, Roy W. Key & O. J. Durand

Mr. Key called Mr. Strobel at 12:55 p.m. to inquire as to the status of the subject exploration application. Mr. Strobel advised Mr. Key that the application was received on May 18 and referred to Mr. Herres on May 21. Mr. Key asked that we check further as to the progress being made on the processing of the loan and call him.

Mr. Strobel checked with Mr. Herres who advised that the application was referred to the Field Team by memorandum dated May 31. This memorandum was actually mailed on June 1. Mr. Strobel then called Mr. Key (collect) at 2:31 p.m. and advised him of this action.

LFSTROBEL:hb

Copy to: Miss Lanahan

LANDON F. STROBEL
1201

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

(43)

W. P. MARSHALL, PRESIDENT

SYMBOLS

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1951 JUN 4 PM 1 48

WP087 PD=MISSOULA MONT 4 1037A=

OTTO HERRES, CHIEF LEAD ZINC BRANCH=

DEFENSE MINERALS ADMIN DEPT OF THE INTERIOR=

REFER DMA-946X PLEASE ACKNOWLEDGE OUR NIGHT LETTER MAY 31=

ROY W KEY KEY AND DURAND=

6/6/51 Mr Herres said was answered by letter on 5/31/51 HB
Also Mr West called long distance & talked W/Strobel re this 6/1/51 HB

DMA-946X 31=

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 1951
4:00
LANDON F. STROBEL
Executive Secretary

DMA 946

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

BUREAU OF MINES
WASHINGTON, D. C.

1951 JUN 4 PM 3 28

SENDER IS AWAITING A SPEEDY answer

PLEASE GIVE IT TO THE MESSENGER OR TELEPHONE WESTERN UNION

WESTERN UNION

W. P. MARSHALL, PRESIDENT

RANDOM E. STROBEL

1201

SYMBOLS
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LT=Int'l Letter Telegram
VLT=Int'l Victory Ltr.

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

PRA402

1951 JUN 1 AM 12 24

PR MSA 230 NL PD=MISSOULA MONT 31=

OTTO HERRES =

CHIEF LEAD ZINC BRANCH= DEFENSE MINERALS ADMN DEPT

OF THE INTERIOR WASHDC=

REFER DMA-946A ARE YOU IN POSITION TO INDICATE PRESENT

STATUS OF OR TO COMMENT ON PROBABLE OUTCOME OF OUR

APPLICATION IF AFFIRMATIVE FOR APPROVAL TENTATIVE DATE

WOULD BE APPRECIATED PLEASE RPLY RETURN TELEGRAM=

ROY W KEY KEY & DURAN 413 MONTANA BUILDING MISSOULA

MONTANA=

Mr Herres on 6/1/51 advised application referred to Field Team & applicants advised by Coordinating Committee. Hogl

JUN 1 1951

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 1 1951
8:31 a m
LANDON F. STROBEL
Executive Secretary

BUREAU OF
WASHINGTO

JUN 7 8 15 AM '51

FILE COPY
SURNAME:

Lyons (6-7-51)
McKnight
Herrad

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

JUN 1 1951

Re: Docket DMA-946

Mr. A. E. Weissenborn
Geological Survey
South 157 Howard Street
Spokane 8, Washington

Dear Mr. Weissenborn:

The attached docket, submitted by Kay and Durand of Missoula, Montana, has been reviewed by the Lead-Zinc Branch.

The applicant is requesting a loan to explore the Durand Lead-Zinc property (Wasa-Shamrock) in Granite County, Montana. Estimated cost of the project is $48,700.

The Bureau of Mines had a project on the property in 1946, 1947, and 1948, under the supervision of Constantine C. Popoff, who recommended further exploration work. Because the program proposed by the applicant differs somewhat from that recommended by Mr. Popoff, the Lead-Zinc Branch recommends that Mr. Popoff review the proposal critically with regard to both the method of exploration and the cost. If the proposal does not meet with Mr. Popoff's approval, a conference with the applicant would be advisable.

Very truly yours,

Tom Lyon
Tom Lyon, Chairman
Coordinating Committee

Lowell B. Moon
Member, Bureau of Mines

Olaf N. Rove
Member, Geological Survey

EJLyons:emp
G 5/31/51
Copies to: Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
Tom Lyon
Directors reading file 4214 GSA
Br. reading file 4214 GSA
Files

FILE COPY
SURNAME:

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

Lyon
McKnight
Moon

JUN 1 1951

Re: Docket DMA-946

Key and Durand
413 Montana Building
Missoula, Montana

Gentlemen:

Your application for a loan to explore the Durand Lead-Zinc property in Granite County, Montana, has been sent to Mr. A. E. Weissenborn, Executive Officer of the Field Team, South 157 Howard Street, Spokane 8, Washington for further information and advice.

Very truly yours,

Tom Lyon, Director
Supply Division

EJLyons:emp
G 5/29/51
Copies to: A. E. Weissenborn Region II (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
Tom Lyon
Directors reading file 4214 GSA
Br. reading file 4214 GSA
Files

LANDON F. STROBEL

Mr. Herres

May 26, 1951

Refer DMA-946

Dear Mr. Herres:

Herewith attached is the original and one copy of a letter from Mr. John W. Cole in Spokane. Please note the contents and accept the Plan of Work and Schedule of Work suggested by Mr. Klepper and Mr. Weissenborn of the Region II DMA Field Team as a part of our application filed originally 26 March, 1951 and revised 13 April, 1951.

While the attached plan and schedule increases the amount requested previously, it is only $4,600.00 above the original estimate, which was prepared by Mr. Francis A. Hancock (E. M.), and who was indicated in our original application to be an actual resident engineer as we planned for Mr. Hancock to live at the workings at least until late fall.

Please attach Messrs Klepper's & Weissenborn's recommendations to our application. May we please again call your attention to the shortness of our warm weather season in this vicinity and especially at 6000 foot elevation which is that of Wasa Lower adit or Tunnel No. 3. Weather here has turned warm and sunny now and all my equipment is at the workings waiting a favorable action by your agency.

Respectfully,

Roy W. Key

Roy W. Key
Key & Durand

Mr. Otto Herres
Chief, Lead-Zinc Branch
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 28 1951
LANDON F. STROBEL
Executive Secretary

BUREAU OF [illegible]
WASHINGTON, D. C.

MAY 28 7 43 AM '51

DMA A-946

W. 1217 - 8th
Spokane, Washington
May 24, 1951

Roy W. Key, M.D.
413 Montana Bldg.
Missoula, Montana

My dear Dr. Key:

Upon my return from Seattle recently, I had a conference with Mr. Klepper and Mr. Weissenborn of the DMA field team with regard to your application for a development loan for the Durand property.

After reviewing your schedule of work, Mr. Weissenborn tentatively approved the following program:

Plan of Work

Drift 800 feet on the structure south of the Lower Wasa adit to intersect the Shamrock orebody and orebody that was intersected by Hole 8. In addition 800 feet of cross cutting to develop the orebodies that are intersected.

1600 feet at $26.00 a foot	$ 41,600.00
Cleaning up Wasa adit	1,000.00
Dozer work as outlined in your application	2,000.00
Sampling and assaying	1,000.00
Supervision, engineering and general overhead	6,000.00
Contingencies	5,000.00
1,000 Feet underground core drilling at $8.00	8,000.00
Total	$ 64,600.00

Schedule of Work

First month	Bulldozing	1,000.00
	Cleanup	1,000.00
	50 Feet of drift	1,300.00
	Other*	1,000.00
Second Month	Bulldozing	1,000.00
	Drifting - 120 feet	3,120.00
	Other*	1,000.00
Third through Sixth Month	Drifting - 120 feet	3,120.00
	Other*	1,000.00
Seventh through Twelfth Mo	Drifting - 158 feet	4,108.00
	Core drilling - 166 feet	1,328.00
	Other*	1,000.00

Note: $12,000.00 prorated, includes supervision, engineering, sampling and assaying and general overhead.

DMA-946

Inasmuch as the drift from the Lower Wasa adit is considered justified, regardless of the results of drilling Hole A from the surface, that item was deleted.

The rental rate on equipment furnished by you is subject to negotiation, however, as a rough estimate it appears that you will be required to contribute $1,000 to $1500 cash a month as your share of the project.

I am sending two extra copies of this letter in case you wish to submit them to be included with your application. If you wish to make changes in the Plan of Work or Schedule of Operation, it is advised that you use approximately the same form that I have used. It would be advisable to submit a signed schedule of operations to the DMA Spokane office. It may save time when your application is received from Washington.

Yours very truly,

John W. Cole

John W. Cole
Mining Engineer

JWC:rb

Agreed to this the 26th day of May, 1951 and is herewith presented to become a part of our application, DMA-946, submitted originally on 26 March, 1951.

Roy W. Key

Roy W. Key
Key & Durand
413 Montana Building
Missoula, Montana

FILE COPY
SURNAME:

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

May 24, 1951

Mr. Roy W. Key
413 Montana Building
Missoula, Montana

Subject: DMA-946X
Re: Exploration Loan
Wasa Mine

My dear Mr. Key:

Receipt is acknowledged of your application and attachments of March 26, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-946X and was referred to Mr. Otto Herres, Chief, Lead-Zinc Branch on May 21, 1951.

In any future correspondence relating to your application, kindly refer to DMA-946X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:mab
cc: Strobel-2
Files
Herres
Lyon

Air Mail

May 22, 1951

Dear Mr. Herres:

Regarding Docket No. DMA-946

Sending along some additional photographic material for our application now on file as indicated. Pictures are labeled and numbered on reverse side to correspond with the following remarks:

#1-C, DMA-946 Shows stripped out-crop of Shamrock ore body about 100 feet north of Trench 14. See Figures No. 4 & 5A, USBM Project No. 15-197. Note foot wall (light rock) just to left of skif of snow upper right hand corner of picture.

#2-C, DMA-946 Same as #1-C but about 200 feet north of Trench 14, Figure 4 & 5A USBM Project No. 15-197. This is good grade of oxidized zinc, lead & copper ore. Note miner standing upper right by foot wall ore.

#1-B, DMA-946 Mr. Durand standing by foot wall of Shamrock ore body in open cut south from Trench 13, Figure 4 & 5A, USBM Project No. 15-197. Mr. Durand is standing on ore which is turning to sulphides - zinc & lead but copper is still oxidized. Note dark line upper left corner of picture; this is foot wall of argillite "horse" shown in #2-B.

#2-B, DMA-946 Shows Mr. Durand standing in cut mentioned in 1-B, and at foot wall of argillite "horse". Note "hanging wall" of horse to Mr. Durand's right. Horse here is about 9 feet wide, dip is indicated (camera was level) and is well defined. Good zinc, lead & copper milling ore to both right and left of the "horse".

#3-B, DMA-946 Same as 2-B without Mr. Durand and with walls of "horse" marked out in ink.

Pictures Nos. 1, 2 & 3-B made Sunday, May 20, 1951. Please add these to our application for further evidence of our sincerety and willingness to do our part in developing the great deposit of zinc, lead & copper ore in Shamrock area.

Respectfully,

Roy W. Key

Roy W. Key
Key & Durand

Mr. Otto Herres
Chief - Lead-Zinc Branch
Defense Minerals Administration
Washington 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 24 1951

LANDON F. STROBEL
Executive Secretary

MAY 24 1951

LANDON F. STROBEL

CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

1201

(21).

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DL=Day Letter
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1951 MAY 14 AM 11 23

NP075 PD=MISSOULA MONT 14 836A=

OTTO HERRES, CHIEF LEAD ZINC BRANCH=

DEFENSE MINERALS ADMINISTRATION DEPT OF THE INTERIOR

=REFER DMA1946 COMPLETED MF100 AND 103 AIR MAILED YOU TODAY

=ROY W KEY KEY & DUARNDT=

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 14 1951
1:30
LANDON F. STROBEL
Executive Secretary

MAY 14 1951

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

BUREAU OF MINES
WASHINGTON, D. C.

1951 MAY 14 PM 12 46

Refer DMA-946 X
May 13, 1951

Dear Mr. Herres:

Herewith attached am forwarding by Registered Air Mail Forms MF-100 and MF-103 with a suggested modification of our original proposal submitted on 26 March, 1951. Despite snow, rain and mud all my mining equipment is now at Wasa-Shamrock workings. At present the new D-6 Caterpillar Dozer is cutting an open cut southward from Trench 13 (See Figure 5A USBM Project 15-197) as recommended by Mr. John W. Cole on 1 May, 1951 after his visit to the Wasa-Shamrock on 30th April, last. (A copy of Mr. Cole's letter-report is attached to Form MF-100 q.v.)

Mr. Durand has just walked into my office with some likely looking pieces of sulphide ore which the dozer has uncovered in the open cut south from Trench 13 mentioned above. Mr. Cole was particularly interested in the Shamrock ore body plunging northward and felt that the true nose of the anti-cline would appear at Trench 13 and toward the north therefrom. If this is true, the south drift from lower Wasa or Wasa No. 3 tunnel (see Paragraph "D" of our Modified Proposal) may bring us into some extremely interesting ore so as to cause us to think of a mill for the benefication of Shamrock ore sooner than we anticipated. Mr. Popoff was and is (private conversation) very enthusiastic about what we will find on the "Nose of the anti-cline at Trench 13 area about 200 feet below surface" or at about where the south drift from lower Wasa would put us.

Incidently, I would like to at this time call your attention to a slight discrepancy in the numbering of the old Wasa tunnels on the maps which we have. For instance, on Figure 8, USBM Project 15-197 Map, there appears a diagram of Wasa Tunnel "6020 feet elevation" and is labeled Wasa No. 1 - this should be Wasa No. 3! Also in Figure 5, same project, the Wasa ore bodies are numbered in the reverse order to that shown in Figure 5A, which we prefer to follow. Do not know whether Mr. Popoff made a correction in his finished report of not. (This discrepancy in the maps which we have was discovered by Mr. Francis A. Hancock). In all our correspondence we will use the numbering of Wasa Tunnels as indicated in Figure 5A as submitted by us with our original proposal.

Since 1 November, 1950 to date, I have expended in cash directly on Durand Lead and Zinc slightly over $2,000.00 and if the already accomplished dozer work to be counted at fair price of $10.00 per hour, my expenditures will amount to about $4,000.00. The D-6 Dozer was purchased specifically for this property and I do hope you can see your way clear to allow rental on this fine piece of equipment during our development stage. All good mines have dozers around and Shamrock is going to be a good mine, perhaps sooner than we realize.

MAY 22 1

I feel that I have shown real interest in Durand Lead-Zinc and do trust that you can expedite a favorable decision for a 50-50 basis grant-loan toward real development work at this worthwhile prospect. Mr. Hancock says he will not live to see Durand Lead-Zinc in full bloom pruduction - just too big for his remaining years and he is only 65 at that!

Respectfully,

Roy W. Key

Roy W. Key
Key & Durand

Mr. Otto Herres, Chief, Lead-Zinc Branch
Defense Minerald Administration
Department of the Interior
Washington 25, D. C.

DEFENSE MINERALS ADMINISTRATION

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

TES110037 EXPENSES OF DEFENSE PRODUCTION
EXECUTIVE OFFICE OF THE PRESIDENT
(ALLOTMENT TO INTERIOR) 1951 10.1

Surname

Herres
McKnight
Mote

MAY 9, 1951

DR. ROY A. KEY
KEY AND DUMAND
MISSOULA, MONTANA

RETEL EIGHTH SUGGEST SUBMISSION MF-100 AND MF-103

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Audits
Mr. Maye
Files
McKnight
Mote
Herres
Strobel

856

CLASS OF SERVICE

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WESTERN UNION

W. P. MARSHALL, PRESIDENT

1201

Herres

=(18)

SYMBOLS
DL=Day Letter
NL=Night Letter
LT=Int'l Letter Telegram
VLT=Int'l Victory Ltr.

1951 MAY 8 PM 3 20

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

WP136 DL PD=MISSOULA MONT 8 1240P:

=OTTO HERRES, CHIEF LEAD ZINC BRANCH DEFENSE MINERALS

ADMINISTRATION=DEPARTMENT OF THE INTERIOR=

:REFER DMA-946 READY TO SUBMIT MODIFICATION OUR ORIGINAL PROPOSAL DATED 26 MARCH 1951 DO YOU REQUIRE SUBMISSION OF FORMS MF-100 AND MF-103 FILLED OUT IN ADDITION TO INFORMATION ON FILE IF AFFIRMATIVE RSVP RETURN TELEGRAM=

ROY W KEY KEY AND DURAND=

DMA-946 26 1951 MF-100 MF-103

MAY 9 1951 P

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 9 1951
9:20 a m
LANDON F. STROBEL
Executive Secretary

1951 MAY 9 AM 7 48
BUREAU OF MINES
WASHINGTON, D. C.

FILE COPY
SURNAME:

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

Herres
Mote
McKnight

May 1, 1951

LM A-946
Durand Lead Zinc
Granite County, Montana

Mr. Roy W. Key
413 Montana Building
Missoula, Montana

Dear Mr. Key:

Your telegram of April 25 to Mr. J. H. Hedges requesting five copies of the C. C. Popoff report on project 15-197, Durand Lead Zinc, Granite County, Montana, has been referred to me for attention.

I regret to inform you that this report on the Drumkalberg District has not been published yet. It is possible that you may be able to look over the manuscript in the Spokane Office of the Bureau of Mines in case this will be helpful to you.

If I can be of any further service in this connection, kindly let me know.

Yours very truly,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

OHerres:ks

cc: Mr. Strobel
Mr. Herres
Mr. Mote
Mr. McKnight
Mr. Moon
2 copies to Mr. A. E. Weissenborn
✓ Files

LM A-946

FILE COPY
SURNAME:

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

Lyons
McKnight
Moore
Herres

April 18, 1951

In reply please
refer to DMA-946

Key and Durand
413 Montana Building
Missoula, Montana

Gentlemen:

One of the purposes of the Defense Production Act of 1950 is the encouragement of exploration, development and mining of strategic minerals and metals. Where an applicant has proven reserves of strategic materials, Federal aid in mining can be given through procurement contracts for such materials as are in short supply. On the strength of these contracts, the applicant can obtain private financing in most instances.

The program recently approved for encouragement of exploration of strategic materials calls for participation on the part of the applicant. For zinc, lead and copper deposits it will be necessary to match Government funds on an equal basis. Funds advanced by the Government will be considered a loan, to be repaid if the exploration is profitable, but to be canceled if unsuccessful. The details of the plan, explaining the projects that will be eligible for assistance, the terms and schedules of financing, repayment, and other pertinent information, are enclosed.

A review of your application (DMA-946) for financial aid in developing your property in the Shamrock-Nasa area, Granite County, Montana, indicates that your proposal may be considered under this exploration program. Details concerning expenditures that will be considered chargeable to exploration aid will be subject to a final determination by negotiation, but as a preliminary appraisal we believe that the program will apply to your entire request of $60,000.

Before we can proceed further with consideration of your application, which may or may not require a field examination, please indicate your willingness to provide your share of the funds needed to carry out the proposed exploration. Any modification of your original proposal that you may wish to make will be considered, but you should be specific concerning the work you wish to undertake.

EJLyons:emp G 4/18/51
Copies to: A.E.Weissenborn (2)
Region II
Chief, Lead-Zinc Br.
E. T. McKnight
L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

Enclosures

Very truly yours,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

DOMESTIC SERVICE			
Check the class of service desired; otherwise this message will be sent as a full rate telegram			
FULL RATE TELEGRAM		SERIAL	
DAY LETTER		NIGHT LETTER	

WESTERN UNION

JOSEPH L. EGAN, PRESIDENT

1206

INTERNATIONAL SERVICE			
Check the class of service desired; otherwise this message will be sent at the full rate			
FULL RATE		DEFERRED	
CODE		NIGHT LETTER	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED

Send the following message, subject to the terms on back hereof, which are hereby agreed to

April 25, 1951

MR J E WILLIAMS CHIEF LEASING DIVISION
BUREAU OF MINES DEPARTMENT OF THE INTERIOR
WASHINGTON 25 D C

REFER USBM PROJECT 15-197 DIRECT LEAD AND ZINC GRANITE COUNTY MONTANA C C MINOFF REPORT

ON SAME HAS THIS BEEN RELEASED IF SO KINDLY FORWARD FIVE COPIES TO MR AIR

MAIL REFER YOUR LETTER DECEMBER 19 1950 RSVP

Cwil
Not published yet
Duplicate Dest
To-In

BOX 1 KEY
413 FORT MA BUILDING
MISSOULA MONTANA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 30 1951
9:35 A.M.
LANDON F. STROBEL
Executive Secretary

APR 30 1951

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it repeated, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated message rate is charged in addition. Unless otherwise indicated on its face, this is an unrepeated message and paid for as such, in consideration whereof it is agreed between the sender of the message and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the unrepeated-message rate beyond the sum of five hundred dollars; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any message received for transmission at the repeated-message rate beyond the sum of five thousand dollars, unless specially valued; nor in any case for delays arising from unavoidable interruption in the working of its lines.

2. In any event the Company shall not be liable for damages for mistakes or delays in the transmission or delivery, or for the non-delivery, of any message, whether caused by the negligence of its servants or otherwise, beyond the actual loss, not exceeding in any event the sum of five thousand dollars, at which amount the sender of each message represents that the message is valued, unless a greater value is stated in writing by the sender thereof at the time the message is tendered for transmission, and unless the repeated-message rate is paid or agreed to be paid, and an additional charge equal to one-tenth of one per cent of the amount by which such valuation shall exceed five thousand dollars.

3. The Company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other company when necessary to reach its destination.

4. Except as otherwise indicated in connection with the listing of individual places in the filed tariffs of the Company, the amount paid for the transmission of a domestic telegram or an incoming cable or radio message covers its delivery within the following limits: In cities or towns of 5,000 or more inhabitants where the Company has an office which, as shown by the filed tariffs of the Company, is not operated through the agency of a railroad company, within two miles of any open main or branch office of the Company; in cities or towns of 5,000 or more inhabitants where, as shown by the filed tariffs of the Company, the telegraph service is performed through the agency of a railroad company, within one mile of the telegraph office; in cities or towns of less than 5,000 inhabitants in which an office of the Company is located, within one-half mile of the telegraph office. Beyond the limits above specified the Company does not undertake to make delivery, but will endeavor to arrange for delivery as the agent of the sender, with the understanding that the sender authorizes the collection of any additional charge from the addressee and agrees to pay such additional charge if it is not collected from the addressee. There will be no additional charge for deliveries made by telephone within the corporate limits of any city or town in which an office of the Company is located.

5. No responsibility attaches to this Company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

6. The Company will not be liable for damages or statutory penalties in the case of any message except an intrastate message in Texas where the claim is not presented in writing to the Company within sixty days after the message is filed with the Company for transmission, and in the case of an intrastate message in Texas the Company will not be liable for damages or statutory penalties where the claim is not presented in writing to the Company within ninety-five days after the cause of action, if any, shall have accrued; provided, however, that neither of these conditions shall apply to claims for damages or overcharges within the purview of Section 415 of the Communications Act of 1934.

7. It is agreed that in any action by the Company to recover the tolls for any message or messages the prompt and correct transmission and delivery thereof shall be presumed, subject to rebuttal by competent evidence.

8. Special terms governing the transmission of messages according to their classes, as enumerated below, shall apply to messages in each of such respective classes in addition to all the foregoing terms.

9. No employee of the Company is authorized to vary the foregoing.

10-42

CLASSES OF SERVICE

DOMESTIC SERVICES

FULL RATE TELEGRAMS

A full rate expedited service.

DAY LETTERS

A deferred service at lower than the full rate.

SERIALS

Messages sent in sections during the same day.

NIGHT LETTERS

Accepted up to 2 A.M. for delivery not earlier than the following morning at rates substantially lower than the full rate telegram or day letter rates.

APR 27 3 43 PM '51
BUREAU OF MINES
WASHINGTON, D.C.

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FULL RATE CABLES

The standard fast service at full rates. May be written in any language that can be expressed in Roman letters or in cipher.

CODE (CDE)

A fast message service consisting of words formed without condition or restriction, counted at 5 characters per word. Minimum charge of 5 words applies.

DEFERREDS (LC)

Plain language messages, subject to being deferred in favor of full rate and CDE messages.

NIGHT LETTERS (NLT)

Overnight plain-language messages. Minimum charge of 25 words applies.

April 13, 1951

Mr. Roy W. Key
413 Montana Building
Missoula, Montana

Subject: DMA-946

Re: Development loan

My dear Mr. Key:

Receipt is acknowledged of your application and attachments of March 26, for a Government loan under the Defense Production Act of 1950.

The application was assigned docket number 946 and referred to Mr. Otto Herres, Chief, Lead-Zinc Branch, on April 9.

In any future correspondence relating to your application, kindly refer to DMA-946.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:bh

Copy to: Strobel(2)
Files
Mr. Herres
Mr. Lyon

dma 946

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 8, Washington

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.
APR 6 2 15 PM '51

April 2, 1951

Mr. Landon F. Strobel
Executive Secretary
Defense Minerals Administration
Department of Interior
Washington 25, D. C.

Dear Mr. Strobel:

We are submitting an application received from Key & Durand, a limited partnership, concerning the Durand Lead-Zinc Property, Granite County, Montana.

The application is submitted as a development loan, however, we suspect that they are referring to a possible exploration loan. The property has been studied extensively by Mr. C. C. Popoff, U. S. Bureau of Mines, and we understand from verbal communication with Mr. Popoff that the proposed exploration program coincides rather closely with an exploration program suggested by Mr. Popoff.

Mr. Popoff speaks favorably of the property, and recommends it as a logical site for further exploration.

Yours very truly,

Thor Kiilsgaard
Thor Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMA
Field Team, Region II

Enclosures

cc: Glenn C. Reed

APR 10 1951

DEFENSE MINERALS ADMINISTRATION

FILE COPY
SURNAME:

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

EXPENSES OF DEFENSE PRODUCTION
EXECUTIVE OFFICE OF THE PRESIDENT
(ALLOTMENT TO INTERIOR), 1951
14.1110037
10.1

Herres

DR ROY W KEY
MISSOULA, MONTANA

WASHINGTON D C MARCH 19, 1951

RETEL PROJECT ELIGIBLE FOR CONSIDERATION UNDER EXPLORATION PROGRAM. APPLICATION FORMS AVAILABLE SPOKANE OFFICE WHEN ISSUED

OTTO HERRES,

OTTO HERRES
CHIEF, LEAD-ZINC BRANCH
DEFENSE MINERALS ADMINISTRATION

O HERRES
cc: Confirmation

Mr. Maye
Audits
Files
Mr. Herres
Administrator

Omer 946 Y

LANDON F. SIMS
Torres
ans. 3/17

:ICE
a full-rate or Cable-ss its de- character is in- ed by a suitable bol above or pre- ceding the address.

WESTERN UNION

W. P. MARSHALL, PRESIDENT

MAR 19 1951
MAR 19 1951

SYMBOLS
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PRA 297

1951 MAR 17 AM 1 15

PR MSA 201 NL PD=MISSOULA MONT 16=
DR JAMES BOYD ADMINISTRATOR=
DEFENSE MINERALS ADMN WASHDC=

PLEASE REFER US BUREAU MINES PROJECT NO 15-197 OWI DURAND LEAD ZINC C C POPOFF REPORT OF WHICH IS IN USBM WASHINGTON COULD YOU PLEASE COMMENT TO ME BY COLLECT PHONE OR TELEGRAM ON THE POSSIBLE ELIGIBILITY THIS PROPERTY FOR DEVELOPMENT LOAN UNDER RECENTLY ALLOTED DMA FUNDS FOR EXPLORATION DEVELOPMENT ZINC LEAD AND COPPER DEPOSITS=

ROY W KEY MD=

15-197 OWI C C POPOFF USBM DMA=

ONS CONCERNING ITS SERVICE

BUREAU OF MINES
WASHINGTON, D. C.

Project #15-197 "Lead-zinc Deposits, the Drumlummon dist., Granite County Mont."

1952 MAR 19 AM 8 31

O.J. Durand, Hall, Mont.
owns.
1) Shamrock & Shamrock ext.
2) Homestake Ext.
3) Mountain View.
4) Homestake tunnelsite
5) " millsite

all in Drumlummon dist.
Granite County, Mont.

March 26, 1951

Dear Mr. Popoff,

The new D-6 Dozer is now stripping ground from Trench 14 to Trench 13 at Oscar Durand's property (see figure No. 5A, USBM Project 15-197) and we will have this work finished by 1 April coming. As far as we have gone the mineralized zone appears to be about 50 feet wide and is continous. Some good looking zinc-lead ore is showing up but we have done no sampling as yet.

Perhaps either or both you and Glen Reed would like to come over and supervise or do the sampling on about 2 April. What do you say?

A passenger car can get to Phosphate Mine easily and we will take you on up in the new Chevrolet 3/4 ton, 4 speed pickup. The old Forest Rose Cabin at Wasa workings has been repaired and is now ready for miners to occupy.

If you can come over, please drop me a line giving dates etc. and we will be ready for you.

Sincerely,

Roy W. Key, M. D.

Mr. C. C. Popoff
U. S. Bureau of Mines
Department of the Interior
Spokane, Washington

Mr. Herron-
This copy sent along for your info.
RK

MAR 29 1951

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

MAR 28 11 47 AM '51

dmc 946

AMERICAN CYANAMID COMPANY
MINERAL DRESSING LABORATORY

INVESTIGATION NO. 58
PROBLEM NO. 3097

March 21, 1951

Flotation of Cu-Pb-Zn Ore, Submitted by
Roy W. Key, MD, Missoula, Montana

THIS REPORT IS BASED ON METALLURGICAL RESULTS OBTAINED IN THE MINERAL DRESSING LABORATORY OF AMERICAN CYANAMID COMPANY ON A SAMPLE OF MATERIAL SUBMITTED BY THE SUBJECT COMPANY, AND ALL RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN APPLY ONLY TO THE TREATMENT OF MATERIAL CONFORMING TO THE SAMPLE SUBMITTED.
NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO CONSTITUTE A PERMISSION OR RECOMMENDATION TO PRACTICE ANY INVENTION COVERED BY ANY PATENT OWNED BY AMERICAN CYANAMID COMPANY OR BY OTHERS, WITHOUT A LICENSE FROM THE OWNER OF THE PATENT, OR OTHER PARTY ENTITLED TO GRANT SUCH LICENSE.

Introduction:

Roy W. Key, MD, Missoula, Montana, shipped a sample of massive sulphide ore from the "Wasa Mine" Granite Co., Montana, for metallurgical testing. The particle size of the sample was approximately 3" x 0" and had a gross weight of 58 pounds. It was packed in a wooden box and arrived in good condition on December 8, 1950.

Present Operation:

The Wasa Group of Claims were partially explored by tunnels and diamond drilling many years ago. It is reported that the U. S. Government redrilled the claims in 1943-46 (Project 15-197).

Object of the Investigation:

It was requested that copper, lead and zinc concentrates be made by selective flotation.

Summary and Conclusions:

1. The Head Sample partial analysis was:

Copper	0.51
Lead	0.19
Zinc	7.26

The average calculated lead analysis of four tests was 0.28 % lead.

2. The copper and lead concentrates produced in these tests were low in grade. This was partially due to the presence of sphalerite which was coated with chalcocite and covellite and tended to float as copper minerals.

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3. Zinc concentrates ranging from 50.68 % Zn to 53.26 % Zn were made, after the removal of a low grade copper-lead concentrate. In Test 2 the zinc concentrate assayed 52.36 % zinc and the recovery was 82.8 %. If the copper, lead, and zinc concentrates of Test 2 were combined, the bulk concentrate would assay 48.3 % zinc.

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Preliminary Investigation:

Description of the Sample

The sulphide sample was said to be taken from two exploration tunnels of the Wasa Claims.

Preparation of the Sample for Testing

The massive sulphide sample was crushed to approximately minus 3/8 inch in a laboratory jaw crusher and then crushed to minus 10 mesh in a rolls crusher. The minus 10 mesh product was thoroughly mixed and divided into 600 gram test charges.

Assay of the Head Sample

One of the test samples was submitted for partial analysis, the results of which are given in the following table.

Table I

Partial Chemical Analysis of Head Sample

Copper	0.51 %
Lead	0.19 %
Zinc	7.26 %
Iron	26.01 %
Insoluble	28.56 %

Microscopical Examination

The products of a preliminary flotation test were examined with the aid of a binocular microscope to determine the mineralization of the sample. The major constituents were pyrite and quartz. Sphalerite was present as a reddish colored variety which is usually high in iron. Some of the sphalerite was coated with chalcocite and some was coated with covellite. Small amounts of chalcopyrite and galena were observed.

Grinding Test

Test charges were ground in the laboratory rod mill at 60 % solids for periods of 6 and 7 minutes and the products were screened. The

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results of these screen analyses are given in Table II.

Table II

Screen Analysis of Grinding Test Products

Grinding time in minutes	6	7
Tyler Mesh	Percentage	
+65	0.2	-
+100	6.7	1.7
+150	21.1	15.0
+200	16.4	18.5
-200	55.6	64.8
Total	100.0	100.0

Flotation

After grinding the ore in the rod mill the pulp was transferred to a Fagergren Flotation Machine for conditioning and flotation. The general procedure was to float a bulk copper-lead concentrate which was cleaned by reflotation. The cleaner tail was then combined with the original copper-lead rougher tail for zinc flotation. Where the zinc concentrate was cleaned, the cleaner tail was combined with the zinc rougher tail before assaying. The lead was floated from the copper-lead concentrate by depressing the copper, using sodium cyanide, and floating the lead. This procedure gave concentrates of copper, lead and zinc and a test tail.

In the flotation log sheet the reagents are designated by symbols. A key to these symbols is given in Table III. U70

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Table III

Key to Reagent Symbols

Na_2CO_3	Light Soda Ash
Na_2SO_3	Sodium Sulphite
NaCN	Sodium Cyanide
$ZnSO_4$	Zinc Sulphate (36 % Zn)
$CuSO_4$	Copper Sulphate (25 % Cu)
$Ca(OH)_2$	Calcium Hydroxide (app. 70 % lime)
325	American Cyanamid Reagent 325
404	American Cyanamid Reagent 404
S-622	American Cyanamid Reagent S-622
NaAF	Sodium AEROFLOAT Flotation Reagent
F-77	American Cyanamid Frother 77

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Test Work:

Test 1 - Effect of Reagent S-622 as a Zinc Depressant

Reagent S-622 was used to depress zinc while floating copper and lead from the pulp which was made alkaline by the addition of lime. Reagents 325 and 404 were used to promoter copper and lead flotation.

An excess of sphalerite, coated with secondary copper minerals, was floated with the chalcopyrite and galena.

The copper and lead concentrates were of low grade due to the presence of an excess of sphalerite. The zinc rougher concentrate was 51.4 % Zn and the recovery was 81.4 %.

Test results are given in Table IV. V70

FLOTATION TEST SHEET

AMERICAN CYANAMID COMPANY

MINERAL DRESSING LABORATORY

INVESTIGATION NO. 58

TABLE NO. IV TEST NO. 1. PROBLEM NO. 3097

CONDITIONS AND REAGENTS

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON									
	TIME MINS.	% SOLIDS	PH	$Ca(OH)_2$	S-622	404	325	F-77	NaCN	$CuSO_4$	NaAF		
Rod Mill	6	60		1.0	1.0	.05	.03						
Cu-Pb Flot.	8	22	7.7				.03	.15					
Cu-Pb Cleaner	3-1/2							.02					
Cu-Pb Separation Condition	30								2.0				
Pb Flot.	4		11				.01	.02					
Zn Cond.	2			2.0									
Zn Cond.	8		10.2							.75			
Zn Flot.	8							.02			.10		

REMARKS:

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS, %					% DISTRIBUTIONS				
		Cu	Pb	Zn			Cu	Pb	Zn		
Calc. Head	100.00	0.50	0.27	7.31			100.0	100.0	100.0		
Cu Conc.	2.31	10.30	1.06	31.97			47.8	8.9	10.1		
Pb Conc.	0.64	6.87	33.20	18.90			8.8	78.8	1.7		
Zn Conc.	11.57	1.13	0.14	51.44			26.3	6.0	81.4		
Tail	85.48	0.10	0.02	0.58			17.1	6.3	6.8		

RATIO OF CONCENTRATION

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REMARKS:

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Test 2 - Effect of Sodium Sulphite as a Zinc Depressant

Sodium sulphite, sodium cyanide and zinc sulphate were used to depress zinc in copper-lead flotation. Reagents 404 and 325 were used to promote copper and lead flotation.

The depression of coated sphalerite in the copper lead rougher was improved. A further rejection of coated sphalerite was accomplished in the copper-lead cleaner by the use of a small amount of cyanide and sodium sulphite. The copper-lead separation was not successful and therefore the separation products were combined for assay as a bulk copper-lead concentrate.

The results given in Table V show that the copper-lead concentrate was low grade. The zinc concentrate assayed 52.36 % Zn and the recovery was 82.8 %. If the copper-lead and zinc concentrates were combined, the resulting concentrate would assay, Cu 2.8 %, Pb 2.0 % and Zn 48.3 %.

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FLOTATION TEST SHEET

AMERICAN CYANAMID COMPANY

MINERAL DRESSING LABORATORY

INVESTIGATION NO. 58

TABLE NO. V TEST NO. 2. PROBLEM NO. 3097

CONDITIONS AND REAGENTS

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON									
	TIME MINS.	% SOLIDS	PH	$Ca(OH)_2$	Na_2SO_3	$ZnSO_4$	NaCN	404	325	F-77	$CuSO_4$	NaAF	
Rod Mill	6	60		1.5	1.0	1.0	.25	.05	.03				
Cu-Pb Flot.	6	22	7.8							.16			
Cu-Pb Cl.Flot.	2				.10		.05						
Cu-Pb Separation Cond.	15						3.0						
Pb Flot.	6							.05	.02	.02			
Zn Cond.	3										.75		
Cond.	5		10.5	2.0									
Cond.	2											.10	
Zn Flot.	10									.04		.05	

REMARKS: Combine Cu and Pb concentrates for assay.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS, %					% DISTRIBUTIONS				
		Cu	Pb	Zn			Cu	Pb	Zn		
Calc. Head	100.0	0.48	0.28	7.21			100.0	100.0	100.0		
Cu-Pb Conc.	1.7	13.56	14.10	21.24			48.6	85.1	5.0		
Zn Conc.	11.4	1.15	0.14	52.36			27.6	5.7	82.8		
Tail	86.9	0.13	0.03	1.01			23.8	9.2	12.2		
Combined Cu-Pb-Zn Conc.	13.1	2.78	1.97	48.32			76.2	90.8	87.8		

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RATIO OF CONCENTRATION

REMARKS:

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Test 3 - Sodium Sulphite as a Zinc Depressant in a Pulp Made Alkaline with Soda Ash

In previous tests, lime was used to give an alkaline pulp. In this test soda ash was used instead of lime. There was no marked difference in flotation as compared with Test 2.

The grades of the copper and lead concentrates were not satisfactory, being slightly lower than those of Test 2. The zinc recovery was 86.7 % in a concentrate which assayed 50.68 % Zn.

Test results are given in Table VI.

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FLOTATION TEST SHEET

AMERICAN CYANAMID COMPANY

MINERAL DRESSING LABORATORY

INVESTIGATION NO. 58

TABLE NO. VI TEST NO. 3. PROBLEM NO. 3097

CONDITIONS AND REAGENTS

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON									
	TIME MINS.	% SOLIDS	PH	Na_2CO_3	Na_2SO_3	$ZnSO_4$	NaCN	404	325	F-77	$Ca(OH)_2$	$CuSO_4$	NaAF
Rod Mill	6	60		4.0	1.0	1.0	.25	.05	.02				
Cu-Pb Flot.	7	22	7.9						.02	.14			
Cu-Pb Cl. Flot.	4				.05		.05		.02	.02			
Cu-Pb Separation Cond.	25						2.0						
Pb Flot.	4								.04	.02			
Zn Cond.	2										2.0		
Cond.	10		10.0									.75	
Zn Flot.	7									.08			.10
Zn Cl. Cond.	2		10.5								.25		
Zn Cl. Flot.	5									.02			

REMARKS: Combine Zn Cleaner Concentrate and Cleaner Tail.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS, %					% DISTRIBUTIONS				
		Cu	Pb	Zn			Cu	Pb	Zn		
Calc. Head	100.0	0.49	0.29	7.33			100.0	100.0	100.0		
Cu Conc.	1.75	13.62	1.76	23.81			49.0	10.7	5.7		
Pb Conc.	0.63	6.44	34.84	15.34			8.3	76.1	1.3		
Zn Conc.	12.54	0.91	0.10	50.68			23.4	4.3	86.7		
Tail	85.08	0.11	0.03	0.54			19.3	8.9	6.3		

RATIO OF CONCENTRATION

REMARKS:

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Test 4 - Flotation of 1000 gram Charge using Sodium Sulphite, Cyanide and Zinc Sulphate as Zinc Depressants

In previous tests the small amount of copper and lead which was available to flotation undoubtedly contributed to the low grade of the concentrates produced. 1000 grams of ore was used in this test in an attempt to improve the grades of copper and lead concentrates.

The flotation tail was screened. The result of this analysis is given in Table VII in which it is shown that the grind was somewhat coarser than that of the previous tests.

The results given in Table VIII show no improvement in the grades of copper and lead concentrates. The grade of the zinc concentrate was increased to 53.26 %, however the recovery dropped to 70.6 %.

Table VII

Screen Analysis of Flotation Tail
1000 grams ground 10-1/2 minutes

Mesh	% Weight
+65	0.4
+100	14.3
+150	21.4
+200	14.6
-200	49.3
Total	100.0

FLOTATION TEST SHEET

AMERICAN CYANAMID COMPANY

MINERAL DRESSING LABORATORY

INVESTIGATION NO. 58

TABLE NO. VIII TEST NO. 4. PROBLEM NO. 3097

CONDITIONS AND REAGENTS

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON									
	TIME MINS.	% SOLIDS	PH	Na_2CO_3	Na_2SO_3	$ZnSO_4$	NaCN	404	325	F-77	$Ca(OH)_2$	$CuSO_4$	NaAF
Rod Mill	10-1/2	60		6.0	1.0	1.0	.25	.05	.03				
Cu-Pb Flot.	6	32	8.2						.08	.05			
Cu-Pb Cl.Flot.	4	32			.18		.06						
Zn Cond.	2		10.0								2.0		
Zn Cond.	10											.50	
Zn Flot.	10									.08			.15
Zn Cl. Cond.	1/2		10.6								.10		
Zn Cl. Flot.	3												

REMARKS:

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS, %					% DISTRIBUTIONS				
		Cu	Pb	Zn			Cu	Pb	Zn		
Calc. Head	100.0	0.53	0.28	7.18			100.0	100.0	100.0		
Cu-Pb Conc.	2.23	12.60	10.83	20.28			52.8	86.4	6.3		
Zn Conc.	9.51	1.25	0.12	53.26			22.3	4.1	70.6		
Tail	88.26	0.15	0.03	1.88			24.9	9.5	23.1		

RATIO OF CONCENTRATION

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REMARKS:

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AMERICAN CYANAMID COMPANY

MINERAL DRESSING LABORATORY

AMERICAN CYANAMID COMPANY

V F Daughney

V. F. Daughney
Mineral Dressing Laboratory

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DEFENSE MINERALS ADMINISTRATION

EXPENSES OF DEFENSE PRODUCTION

EXECUTIVE OFFICE OF THE PRESIDENT
14.1110037 (ALLOTMENT TO INTERIOR), 1951

10.1

DR. ROY W KEY
MISSOULA, MONTANA

WASHINGTON D C MARCH 19, 1951

RETEL PROJECT ELIGIBLE FOR CONSIDERATION UNDER EXPLORATION PROGRAM. APPLICATION FORMS AVAILABLE SPOKANE OFFICE WHEN ISSUED

OTTO HERRES
OTTO HERRES
CHIEF, LEAD-ZINC BRANCH
DEFENSE MINERALS ADMINISTRATION

O HERRES
cc: Confirmation

Mr. Maye
Audits
Files
Mr. Herres
Administrator

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January 10, 1951

DMA 946

Memorandum

To: Reports and Records

From: Base Metals Division, DMEA

Subject: Attached letter from Congressman Mansfield

The attached letter informally transmitted to this Division by routing slip from General Services Administration and through your office is evidently referred for necessary action.

The letter quite clearly states that the Congressman desires information on action taken by the DMPA on a production loan application submitted by Dr. Roy W. Kay.

The letter refers in parentheses to an exploration contract, L-DMA-E30 which was approved on June 28, 1951 and is now in effect.

It appears that the information required is available in the DMPA and the letter should be returned for their attention.

D. E. Moulds

Attachment-1

DEMoulds/meh
cc to: Docket File Copy
Mr. Moulds

Hole 8 A (continued)

Depth, ft. From-	To-	Formation	Recovery, percent Core	Core analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au	Sludge analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au
157.4	162.4	Argillite; from 193.3' limestone, gray; thin sulfide streaks and irregular replacement spots along bedding plane (20-30°**)	52.0						0.5	0.05*	0.05*		
162.4	163.4	Limestone, with pyrite and sphalerite mineralization	70.0	0.05*	0.05*	0.05*							
163.4	167.4	Limestone, pyrite and sphalerite mineralization	47.5						.4	.05*	.05*		
167.4	172.4	Argillite, calcareous (or limestone argillaceous), gray-green with calcite veinlets	42.0						.05*	.05*	.05*		
172.4	177.4	Limestone, argillaceous, partly mineralized	38.0						.4	.05*	.05*		
177.4	180.1	Limestone, light gray, partly altered (probably due to fault)	63.0						.05*	.05*	.05*		
180.1	184.3	Limestone, marble-like fine-grained, without mineralization	85.7							Discarded			
184.3	189.3	Limestone, partly argillaceous and siliceous; pyrite mineralization along fissures	100.0							do.			
189.3	194.4	Limestone, gray, relatively coarse and partly argillaceous; without mineralization	92.2							do.			
194.4	199.4	Limestone	76.1						.05*	.05*	.05*		
199.4	201.1	do.	76.1						.05*	.05*	.05*		
201.1	206.1	Limestone, with fragments of lighter color	100.0						.05*	.05*	.05*		
206.1	207.3	Limestone, small amount of mineralization	100.0	.05*	.05*	.05*							
		Rock analysis: CaO-43.9%; SiO_2-12.1%; MgO-6.7%							1.5	.05	.1		
207.3	209.9	Ore, sulfide streaks in limestone	100.0	4.1	.05*	.1	0.26	Tr.					
209.9	213.4	Ore, streaks of pyrite and sphalerite in limestone	97.0	7.7	.05*	.3	Tr.	Tr.	4.1	.05*	.2		
207.3	213.4	Ore, weighted average for 6.1'		6.17	.05*	.2	.11	Tr.					
213.4	217.9	Limestone, gray-green with argillite seam	75.6						.05*	.05*	.06		
217.9	221.2	Limestone, gray with small amount of mineralization	96.7							Discarded			
221.2	225.7	Limestone	86.7							do.			
225.7	235.2	do.	90.5							do.			
235.2	236.2	Ore; mineralized limestone	100.0	4.5	.05*	.1	Tr.	Tr.					
236.2	238.8	Limestone with thin sphalerite veinlets	92.3	.05*	.05*	.05*			.7	.05*	.1		
238.8	239.9	Limestone, gray, mineralized	90.9	2.8	.05	.1	Tr.	Tr.					
239.9	243.8	Ore, mineralized streaks in limestone	90.0	3.2	.05*	.05*	Tr.	Tr.					
238.8	243.8	Ore, weighted average for 5.0 feet		3.1	.05*	.05	Tr.	Tr.	.7	.05*	.05*		
243.8	245.2	Limestone, gray, small amount of mineralization	85.7										
245.2	250.2	Limestone	96.0						.3	.05*	.05*		
250.2	255.2	Limestone, light gray, small amount of mineralization; from 253.7' argillite, siliceous, mineralized at limestone contact	96.0						.05*	.05*	.05*		
255.2	256.0	Argillite, blue-gray, siliceous, without mineralization	100.0							Discarded			
256.0	259.7	Limestone, gray, mineralized by pyrite (veinlets, irregular patches and disseminated grains)	100.0							do.			
259.7	262.7	Limestone, mineralized by pyrite	100.0	.05*	.05*	.05*				do.			
262.7	263.6	Argillite	100.0							do.			
263.6	264.3	do.	99.0							do.			
264.3	273.6	Limestone, light gray, slightly mineralized; considerable amount of pyrite between 270.3 and 271.8	99.0							do.			
273.6	282.0	Limestone, blue-gray, with pyrite and small amount of sphalerite	99.8							do.			
282.0	287.8	Limestone	92.0							No sludge - lost water.			
287.8	289.5	Limestone (interval with best mineralization)	92.0	.05*	.05*	.05*				do.			
289.5	290.7	Limestone	92.0							do.			
290.7	300.7	Limestone, light blue-gray with small amount of mineralization	97.0							do.			
300.7	310.7	Limestone, light gray	99.0							do.			
310.7	316.4	Limestone	78.4							do.			
316.4	326.4	Limestone, spotty mineralization	83.0							do.			
326.4	333.2	Limestone	69.7							do.			
333.2	343.2	do.	100.0							Discarded			
343.2	353.2	Limestone, light gray, small amount of mineralization	100.0							do.			
353.2	356.9	Limestone; from 356.0' argillite, gray (contact with limestone 40°**)	89.2							do.			
356.9	361.1	Argillite, gray; from 357.3' limestone; from 358.4' argillite, calcareous; sulfide veinlets up to 1/2" wide	97.6							do.			
361.1	371.4	Limestone, light gray; weak sphalerite and pyrite streaks first 3'	97.1							do.			
371.4	381.4	Limestone, gray	96.1							do.			
381.4	391.6	Limestone, last 3' lighter colore; small amount of mineralization	56.9							Lost water.			
391.6	398.7	Limestone, light gray, last foot altered (clayey)	98.6							do.			

* Less than. ** Deviation from plane normal to core axis.

Hole 8 A (continued)

Depth, ft. From-	To-	Formation	Recovery, percent Core	Core analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au	Sludge analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au
398.7	403.7	Limestone, bleached to white; partly brecciated and cemented with soft black material	29.9						0.05*	0.05*	0.1		
									.05*	.05*	.1		
403.7	404.4	Limestone	29.9						No sludge - lost water				
404.4	407.3	do.	50.6										
407.3	412.3	Limestone, light gray and greenish gray	20.0						.05*	.05*	.07		
412.3	417.3	Limestone; from 414.0 argillite, calcareous with pyrite mineralization	20.0						.05*	.05*	.07		
417.3	422.3	Fault zone (core-fragments of argillite and calcite)	2.0						.05*	.05*	.05*		
422.3	427.0	Fault zone (core --fragments of light green and gray argillite)	2.1						.05*	.05*	.05*		
427.0	430.0	Argillite, noncalcareous, partly siliceous (altered purple-brown shales); pyrite mineralization and small amount of sphalerite	33.3						.05*	.05*	.05*		

ANNEX II

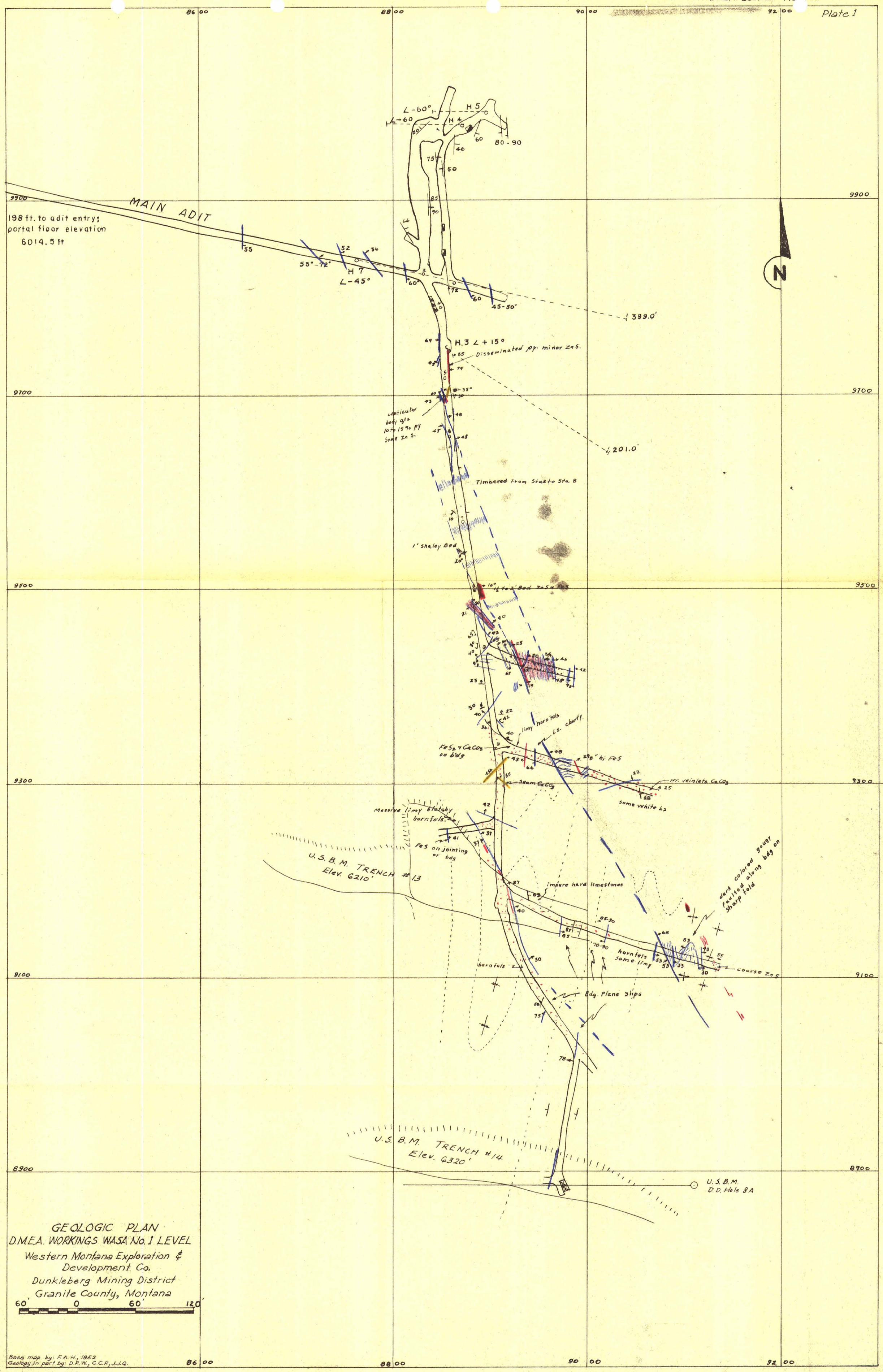
Hole 8 A

Location: 8,885 N., 9,109 E.
Elevation of collar: 6,274 feet
Bearing: West
Dip: -45°

Begun: 5/7/48
Completed: 7/19/52
Core sizes: 4" to 24.0; NX, 24.0-53.0; BX, 53.0-333.2; AX, 333.2-430.0

Depth, ft. From-	To-	Formation	Recovery, percent Core	Core analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au	Sludge analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au
0.0	24.0	Dump and debris (standpipe)											
24.0	28.0	Limestone, dark gray, almost black, argillaceous	30.0						No sludge - water lost				
28.0	32.0	Limestone (bedding 20° ? **)	52.5						0.1	0.05*	0.05*		
32.0	33.0	Limestone, dark gray and blue-gray	60.0						.05*	.05*	.05*		
33.0	38.0	Limestone	60.0						.1	.05*	.05*		
38.0	41.4	do.	24.0						.3	.05*	.05*		
41.4	43.0	do.	24.0						No sludge - water lost				
43.0	48.0	Limestone, gray	68.0							do.			
48.0	53.0	Limestone, mostly gray, without mineralization	14.0							do.			
53.0	58.0	Limestone (?), probable fault from 55.0'	0							do.			
58.0	64.7	Limestone, gray, stained with iron oxides along fissures (50-60°**); open fissure 59.0-61.0'	17.4							do.			
64.7	65.7	Limestone, mineralized with pyrite, sphalerite, and chalcopyrite	70.0	0.4	0.05*	0.7	0.1	0.01		do.			
65.7	66.2	Limestone, mineralized	56.0						.6	.05*	.4		
66.2	70.2	Limestone, pyrite, partly oxidized to iron oxides (from 68.7' shale, light gray (bleached); noncalcareous, probable bedding 20°**)	56.0						.05*	.05*	.05*		
70.2	72.7	Shale, gray-green, brown along fissures, noncalcareous	38.0						.05*	.05*	.05*		
72.7	75.7	Shale	38.0						.05*	.05*	.1		
75.7	80.7	Shale; from 78.2' argillite, varicolored, noncalcareous, fragmental	34.0						.05*	.05*	.05*		
80.7	85.7	Argillite, gray and varicolored; noncalcareous, pyrite mineralization	24.0						.05*	.05*	.05*		
85.7	90.7	Argillite, greenish-gray, noncalcareous, pyrite mineralization	48.0						.05*	.05*	.05*		
90.7	95.7	Argillite, last 0.3' pyrite and sphalerite mineralization	30.0						.05*	.05*	.05*		
95.7	100.7	Argillite	34.0						.05*	.05*	.05*		
100.7	102.5	do.	16.7						.05*	.05*	.05*		
102.5	107.6	Argillite, spotty mineralization	27.4						.05*	.05*	.05*		
107.6	112.7	Argillite, dark gray, mineralized; from 108.5 shale, light green, calcareous, mineralized along fractures; from 112.0 argillite, calcareous	58.8						.05*	.05*	.05*		
112.7	117.7	Argillite, calcareous, gray, thin pyrite veinlets; calcite veinlet 0.6' wide	56.2						.05*	.05*	.05*		
117.7	121.9	Argillite, calcareous, gray	56.2						.05*	.05*	.05*		
121.9	122.1	Argillite	100.0										
122.1	126.7	do.	52.2						.05*	.05*	.05*		
126.7	132.3	Argillite, slightly calcareous, blue-gray	25.6						.05*	.05*	.1		
132.3	135.0	Argillite, calcareous and mineralized; last 0.1' heavy pyrite mineralization	77.8							Lost			
135.0	138.3	Limestone, mineralized in streaks along bedding (20°**)	45.5	3.0	.05*	.07	.005	Tr.	.3	.05*	.1		
138.3	142.2	Limestone, brecciated (?), pyrite and sphalerite mineralization	28.2	2.3	.05*	.05*	.005	Tr.	.05*	.05*	.05*		
135.0	142.2	Mineralized zone; core average weighted		2.62	.05*	.05	.005	Tr.					
142.2	144.2	Limestone, dark gray with streaks of pyrite and small amount of sphalerite	85.0						.3	.05*	.05*		
144.2	145.2	do.	60.0	.05*	.05*	.2			)				
145.2	146.2	do.	85.0						) .4	.05*	.05*		
146.2	147.2	do.	85.0						.05*	.05*	.05*		
147.2	152.2	Argillite, light green, calcareous; small amount of mineralization	20.0						.05*	.05*	.1		
152.2	157.4	Argillite, calcareous, mineralization in streaks along bedding (20-30°**)	19.2						.6	.05*	.05*		

* Less than. ** Deviation from plane normal to core axis.

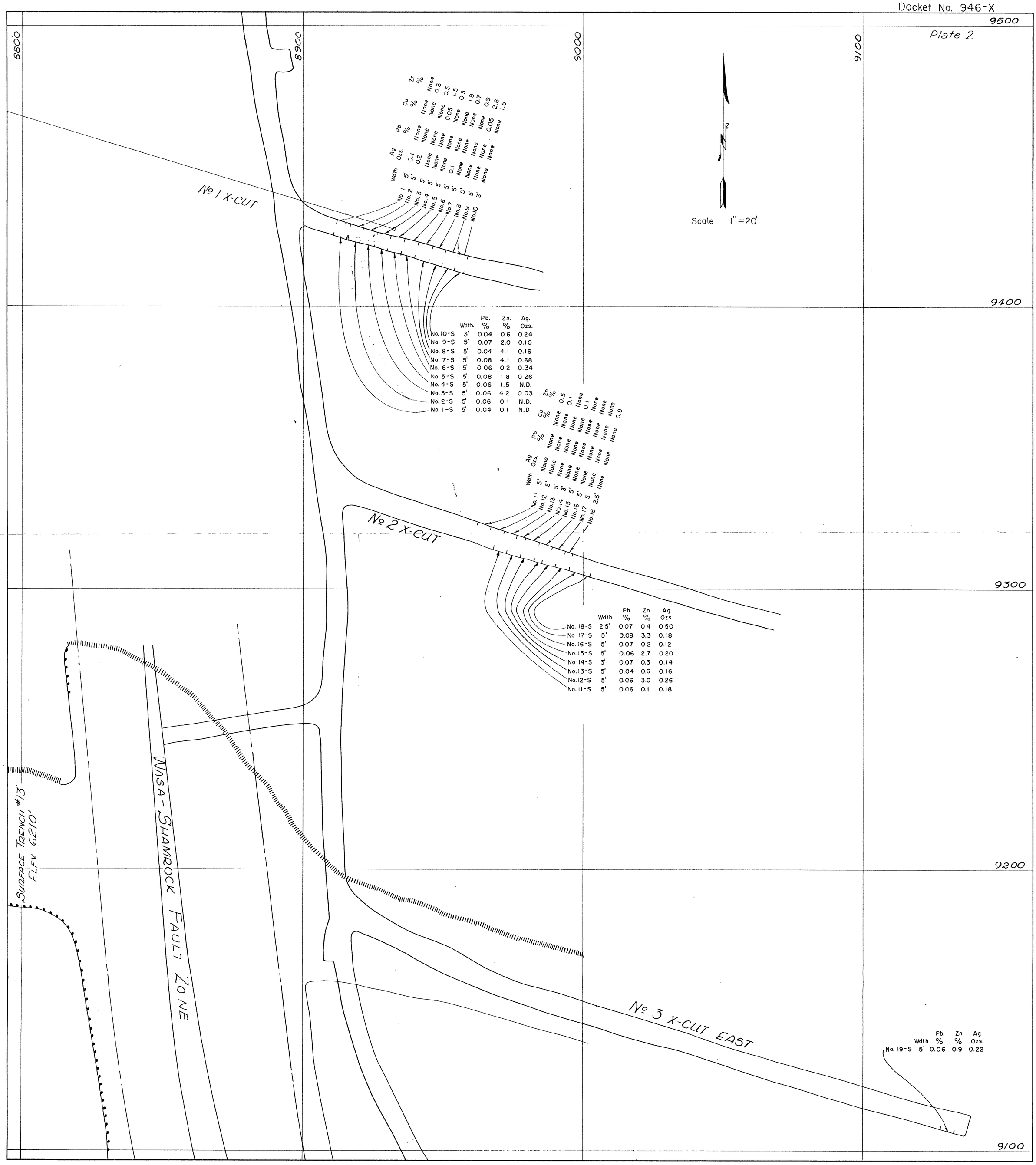


GEOLOGIC PLAN
D.M.E.A. WORKINGS WASA No. 1 LEVEL
Western Montana Exploration & Development Co.
Dunkleberg Mining District
Granite County, Montana

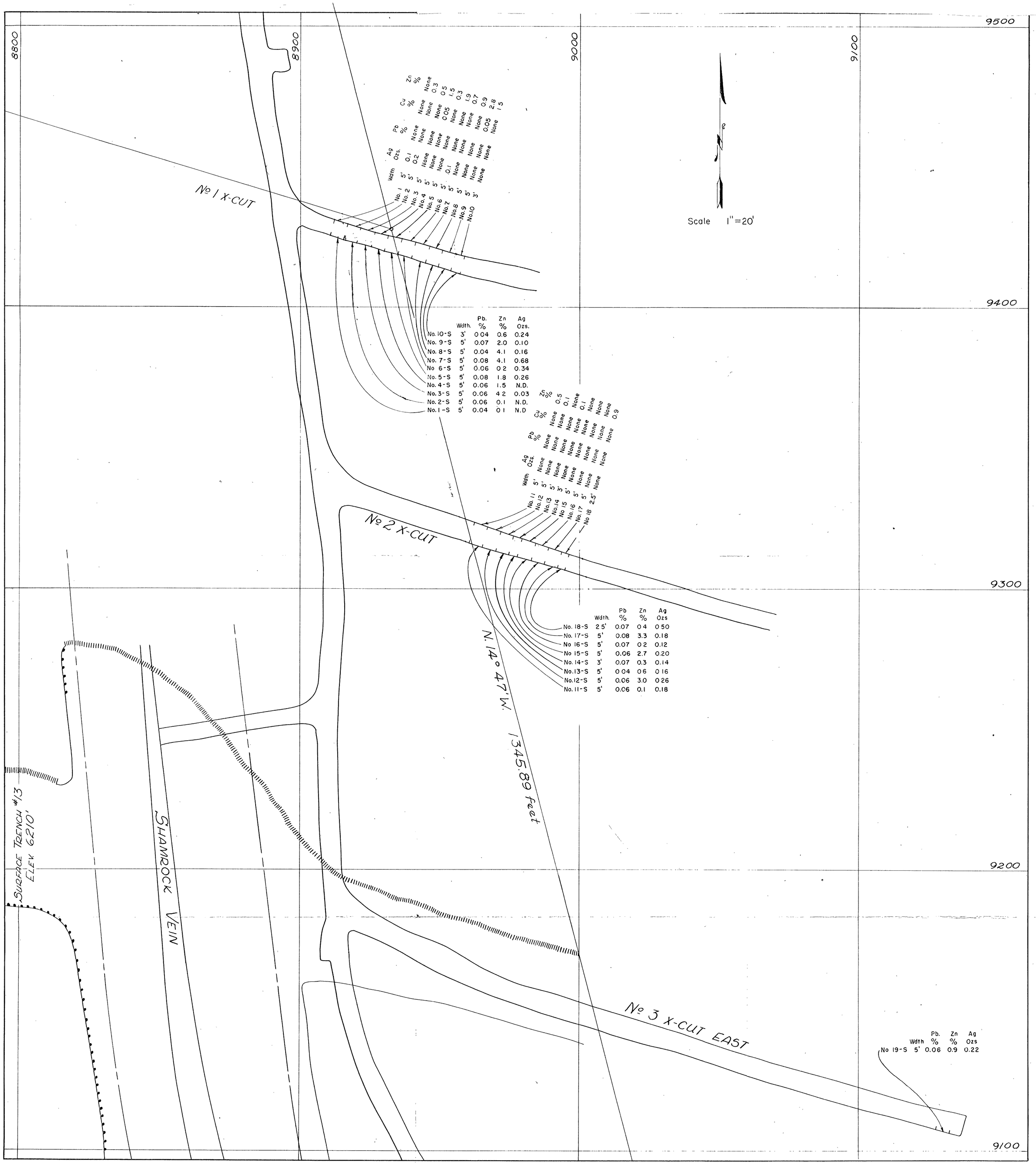
60' 0 60' 120'

Base map by: F.A.H., 1952
Geology in part by: D.R.W., C.C.P., J.J.Q.

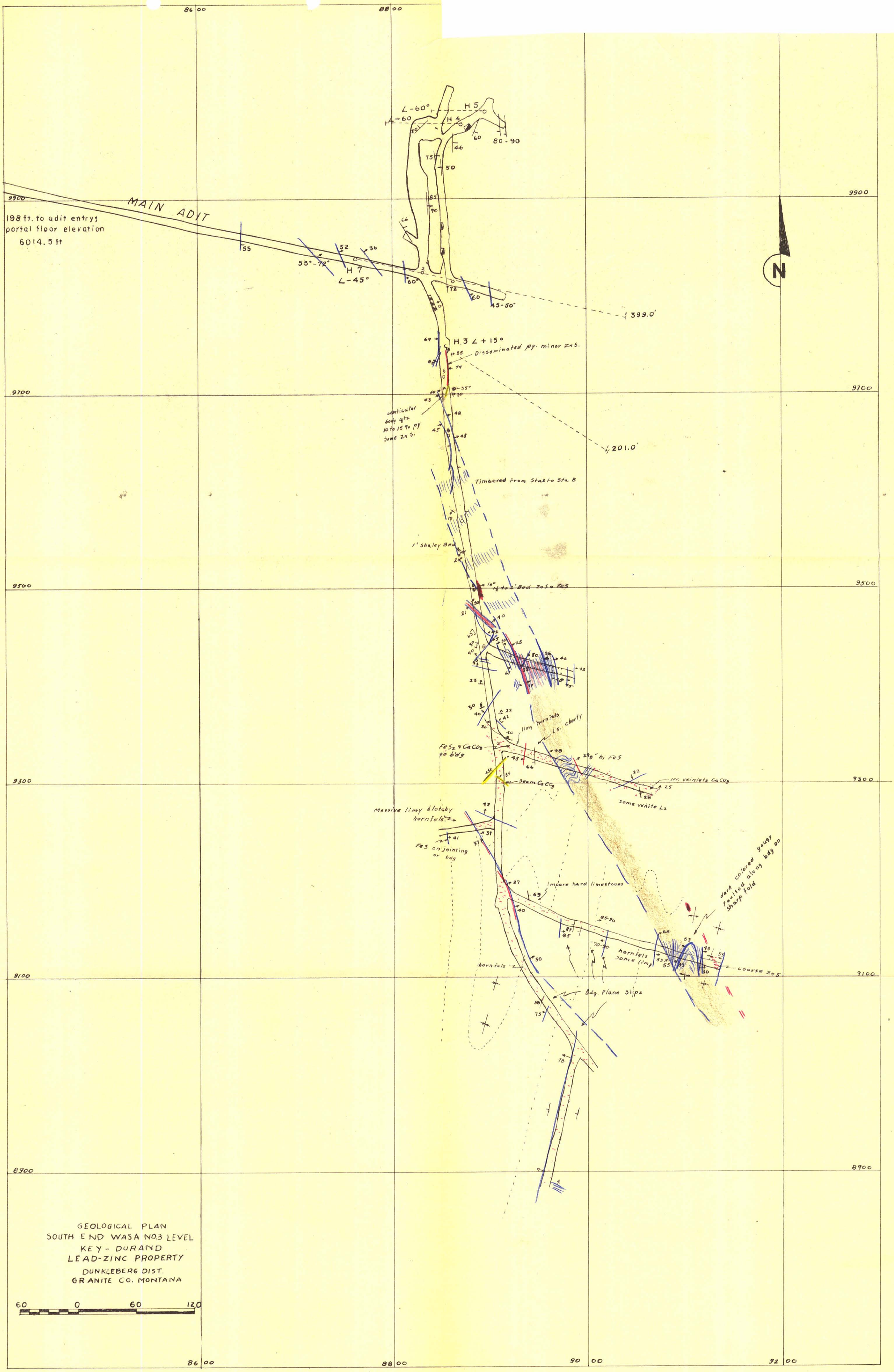
Docket No. 946-X



ASSAY PLAN OF No. 1, No. 2 & No. 3 CROSSCUTS OF KEY-DURAND DMEA PROJECT No. 1-DMA-30
(WASA MINE)
GRANITE COUNTY, MONTANA



ASSAY PLAN OF No. 1, No. 2 & No. 3 CROSSCUTS OF KEY-DURAND DMEA PROJECT No. 1-DMA-30
(WASA MINE)
GRANITE COUNTY, MONTANA


86 00
88 00
90 00
92 00
9900
9700
9500
9300
9100
8900
MAIN ADIT
198 ft. to adit entry;
portal floor elevation
6014.5 ft
L-60°
H 5
H 4
80-90
H 7
L-45°
45-50°
399.0'
H.3 L + 15°
Disseminated py. minor ZnS.
201.0'
Lenticular body qtz 10 to 15% py Some Zn S.
Timbered from Sta 7 to Sta 8
1' Shaley Bed
1/2 to 2' Bed ZnS & FeS
limy hornfels
L.S. cherty
FeS2 & CaCO3 on bdg
Seam CaCO3
irr. veinlets CaCO3
some white Ls
Massive limy blotchy hornfels
FeS on jointing or bdg
impure hard limestones
dark colored gouge faulted along bdg on sharp fold
hornfels some limy
hornfels
coarse ZnS
Bdg. Plane Slips
N
GEOLOGICAL PLAN
SOUTH END WASA NO.3 LEVEL
KEY - DURAND
LEAD-ZINC PROPERTY
DUNKLEBERG DIST.
GRANITE CO. MONTANA
60 0 60 120