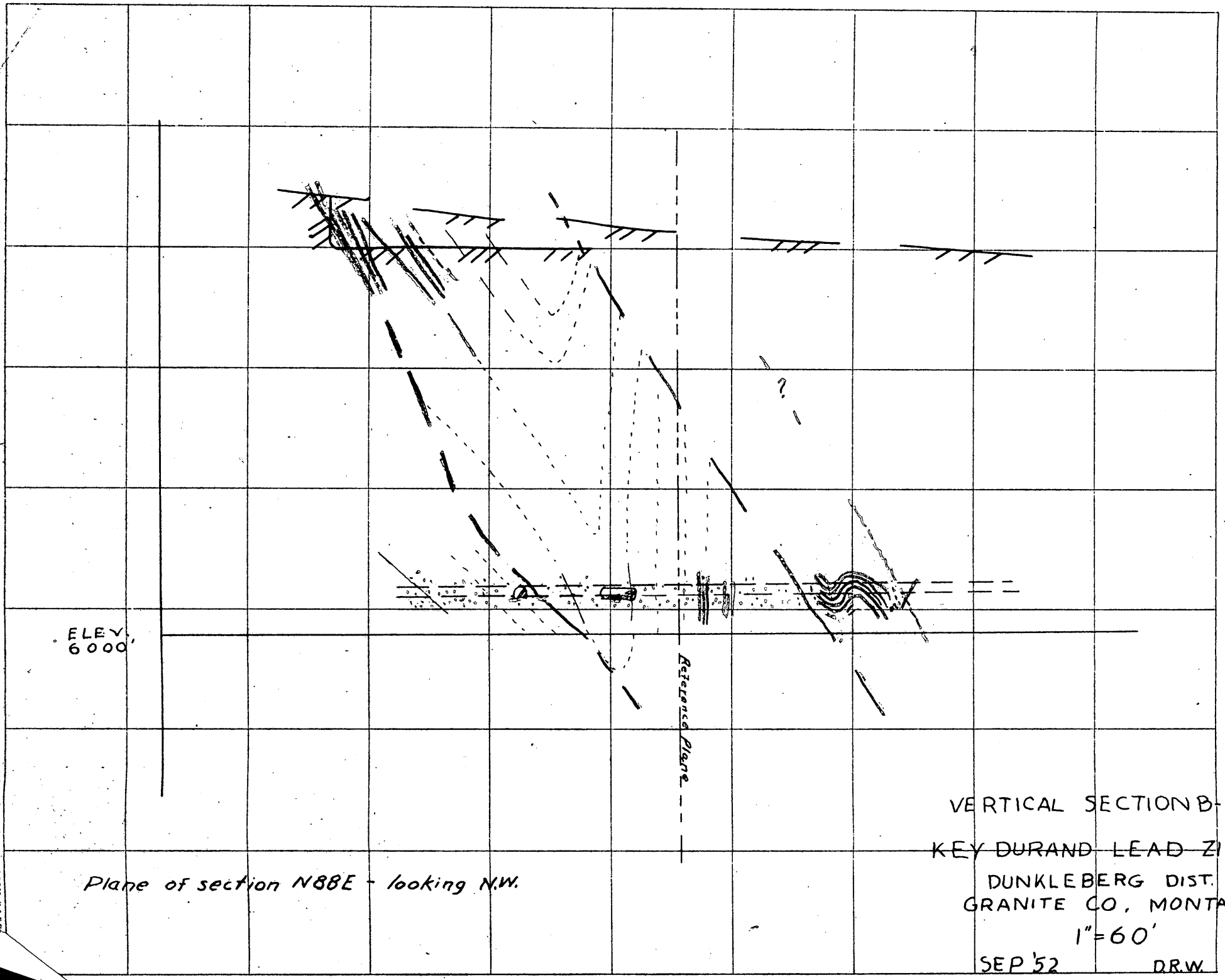
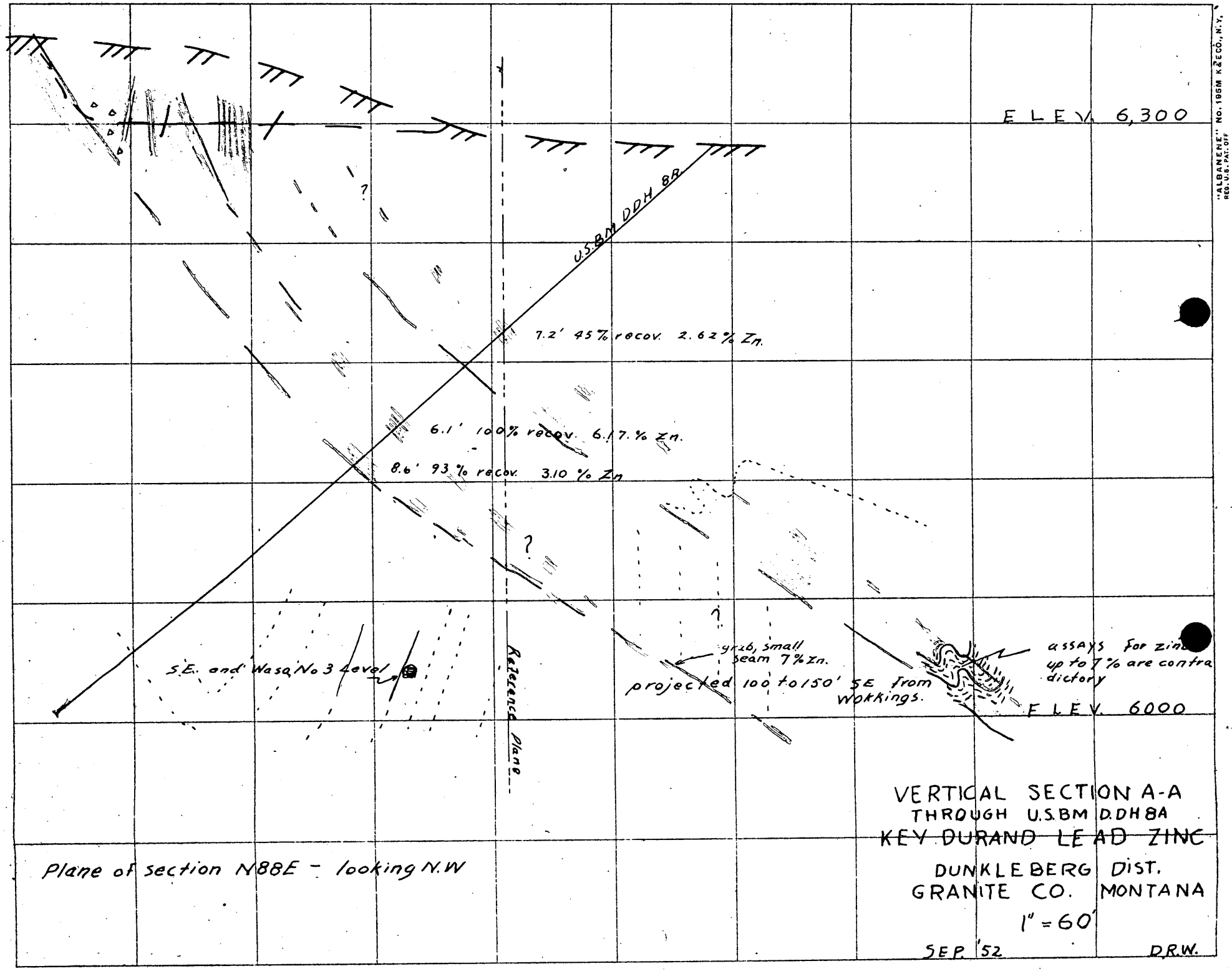
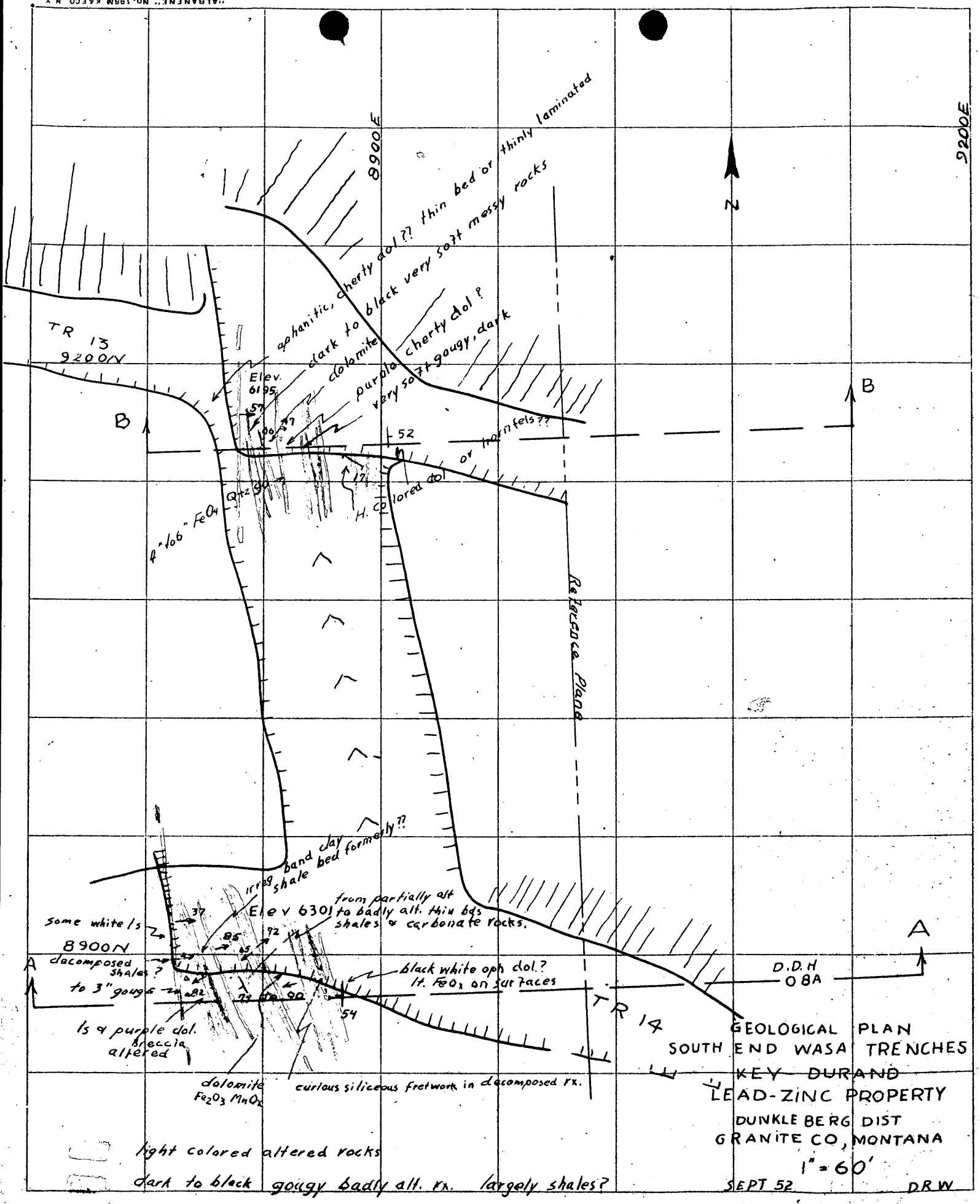


"ALBANENE" NO. 195M K&E CO. REG. U.S. PAT. OFF.

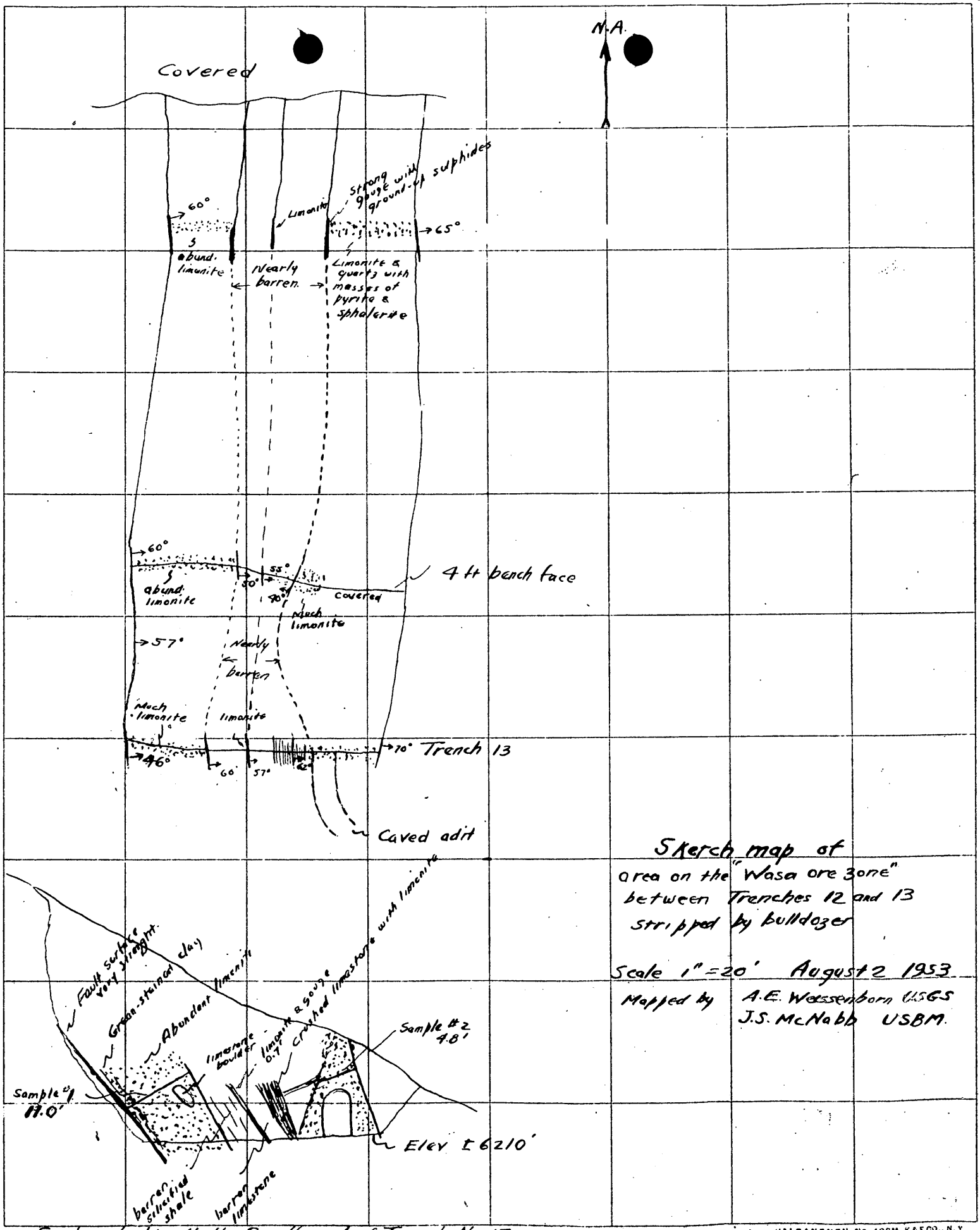


"ALBANENE" No. 195M K&E CO., N.Y.
REG. U.S. PAT. OFF

"ALBANENE" No. 1898M K&E CO., N.Y.
REG. U.S. PAT. OFF.



GEOLOGICAL PLAN
SOUTH END WASA TRENCHES
KEY DURAND
LEAD-ZINC PROPERTY
DUNKLE BERG DIST
GRANITE CO, MONTANA
1" = 60'
SEPT 52
DRW



Section looking North, South end of Trench No. 13

"ALBANENE" No. 199M K&E CO., N.Y. REG. U.S. PAT. OFF.

Form MP-1 (Rev. April 1952)
BUREAU OF MINES
MAR 9 - 1953
SPOKANE, WASH.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 9 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of December, 1952 Docket No. DMEA 946X Contract No. I-D.A-530
Operator's Name Western Montana Exploration & Development Co, Inc. Minerals Lead-Zinc-Copper
Address 412 Western Bank Building, Missoula, Mont.
Contract Amount, $ 65,850.00 Government Participation: 50 % Amount, $

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	891.00	41,638.00	42,529.00		41467.72	35119.14
Supervision	70.00	1,509.30	1,579.30	6362.58	1509.38	7871.88
Technical Services		1,492.29	1,492.29		1492.29	1009.65
(3) Operating Mat'ls. and Supplies:						
Timber	31.20	171.65	202.85	619.48	171.65	791.13
Explosives		3,865.88	3,865.88	993.46	3865.88	4859.34
Pipe		345.97	345.97	1815.26	345.97	2161.23
Track				3341.05		3341.05
Mining Supplies	162.75	1,213.38	1,376.13	1460.36	1403.26	2863.62
Power				1180.19		1180.19
(4) Operating Equipment:						
Rental	472.00	13,955.14	14,427.14		17810.24	13687.00
Purchase		1,434.45	1,434.45		1434.45	1300.00
Depreciation	160.00	3,727.10	3,887.10	5033.80	160.00	5193.80
(5) Initial Rehabilitation and Repairs		11.55	11.55		11.55	-0-
(6) New Bldgs., Improvements, etc.		2,559.80	2,559.80		2559.80	2559.80
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45		456.45	56.81
Sampling and Analysis		40.25	40.25	376.29	40.25	416.54
Payroll Taxes	123.86	1,558.80	1,682.66	56.66	1558.80	1615.46
Liability Insurance	327.25	1,847.05	2,174.30	305.73	1847.05	2152.78
23.65 20.33 27.38 .30	71.66	8,648.18	8,719.84		8244.54	133.87
(8) Contingencies (specify):						
Exhibit B		1,900.00	1,900.00		1900.00	-0-
Geologist		1,111.25	1,111.25		1111.25	-0-
Transportation				592.50		592.50
TOTALS	2,309.78	87,486.57	89,796.89		87390.53	86905.79

53422.84

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 3/9/53 *Payee Western Montana Exploration & Development Co, Inc.
Per Roy W. Key Roy W. Key Title President & Gen. Manager

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

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

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of: 83424.13
$ 1222.73
Signature (Authorized Certifying Officer)
Date 7/23/53 Vou. No. 849
(See other side)

See Mr. Hull's audit report.
Total redistributed to conform to audit.
Off. & Exp. 6411.81
Less Dev. Co. 2445.41

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 30 in accordance with the terms of the contract.

Signature S/ Edward W Buell Title Mining Engr Date 3/9/53

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature S/ Thomas E Howard Title Mining Engr Date 3/9/53

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GPO 83-38476

MF-104A
(April 1952)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 6 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of December 195 2 Docket No. DMEA 9463 Contract No. I-DMA-530
Operator's Name Western Montana Exploration & Development Co., Inc Minerals Lead-Zinc-copper
Address 412 Western Bank Building, Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising	ft.	2,309.72	28.5					
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		2,309.72		89,796.29				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date March 9, 1953 Operator Western Montana Exploration & Development Co., Inc.

Per Roy W. Key Title President & Gen. Manager

Roy W. Key

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 83-38475

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

NARRATIVE Month December, 1952

During the month of December, No. 1 Raise was driven 24.5 feet making a total vertical distance for this raise of 110 feet up from the south drift level.

A short round was drilled into the west wall of the raise at the top to better show the ore at this point. This is shown on the progress map accompanying the report.

The raise encountered U.S. Bureau of Mines diamond drill hole No. 8A at a point 102 feet above the south drift level. A heavy flow of water came out of the drill hole and made it extremely difficult to work in the raise, and slowed progress considerably.

In order to prove which ore shown in the drill hole was cut in the raise, 4 long holes were drilled as shown on the progress map. These holes indicate that it was the second ore shown in the drill hole that the raise encountered.

Until further work is done in the ore at the top of the raise, no definite conclusion is possible relative to the strike and dip of the ore encountered. The ore shows best on the west side of the raise, but the short round drilled into the wall at this point showed another bedding plane fault.

Francis A. Hancock

Francis A. Hancock
Mining Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X I-DMA-E 30

PAYROLL DISTRIBUTION

Mine Development - Lower Wasa No. 3 Level:

To driving No. 1 Raise	19.5 ft. @ $15. per ft. (contract)	$292.00
To driving No. 1 Raise	6.0 ft. @ $15. per shift (day work)	
To driving No. 1 Raise	3.0 ft. @ $15. per shift (into West wall, day work)	234.50
Making room and drilling long holes with Legner drill east and west from raise (see progress map)		285.00
Air Compressor & Power Unit Operation & Maintenance		63.00
Mine Haulage: Care of horse, clean tracks, & ditch, level dump, etc.		49.00
Sharpening Tools: Picks, grinding drill bits, etc.		42.00
Roads: Snow Removal		10.50

Indirect Costs:

General Supervision & Shift Boss	112.00
Engineering: Surveying, Maps, etc.	40.00
Office Work: Mine & Missoula Office	190.00
Administration: Trips Missoula Office, etc.	40.00
Transportation: Hauling supplies, trips to mine, etc.	38.50
General Camp Maintenance: Snow removal, watchman, cutting wood, etc.	28.00

Boarding House:

Labor Cooking	137.00
Total	$1561.50

Certified Correct:
Francis A. Hancock, E.M.
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-LUBAND LEAD-ZINC Project No. 946X-I-DMA-E30

SETTLEMENT SHEET

MINE DEVELOPMENT CONTRACTS Month December, 1952

Lower Wasa No. 3 Level:
To driving No. 1 Raise 19.5 ft. @ $15.00 per foot $292.00

Paid Contractors as per December, 1952, Payroll:

Clair R. Albano	72 hrs. @ $2.028	$146.00
William F. Lucas	72 hrs. @ $2.028	146.00
	Total	$292.00

Certified Correct:
Francis A. Hancock
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E 30

ACCOUNTS PAYABLE & DISTRIBUTION FOR MONTH DECEMBER, 1952:

Accounts Payable:

Miller Machinery Co.	$140.99
Lyon Construction Co.	414.00
Roy W. Key, M.D.	208.00
Clair R. Albano, drill steel & bits	68.06
N.P. Allen Ranch	17.00
Farmers Union Oil Company	31.11
Raymond H. Heady Sawmill	31.20
Davis Texaco Service	8.05
Francis A. Hancock, E.M.	14.30
Fischer's Lumber Yard	32.25
Millers' Dry Goods Store	10.85
Ila's Grocery & Meats	26.75
Hall Meat Market & Grocery	90.04
Montana Industrial Accident Board, Nov.	113.13
Montana Industrial Accident Board, Dec.	116.98
Unemployment Compensation Commission (4th quarter)	97.14
Collector of Internal Revenue (Social Security Tax, 4th Quarter)	123.86
Total	$1543.71

Distribution:

Mining Equipment Rental	$ 632.00
Mining Supplies	193.95
Mine Haulage, (Horse feed)	23.65
Air Compressor & Power Unit Operation	20.33
Transportation, Hauling supplies, trips to mine	27.38
Roads, Snow Removal	48.00
Payroll Taxes	451.11
Office Supplies	.30
Telephone calls, Missoula	14.00
Boarding House Supplies	116.79
Commissary Account	16.20
Total	$1543.71

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. 946X -I-DMA-E30

STATEMENT

Mining Equipment Rental — Month December, 1952

Miller Machinery Company, Missoula, Montana	
1 - Ingersoll-Rand 1H Little Tugger Air Hoist, for #1 Raise	$ 58.00
Lyon Construction Company, Missoula, Montana	
1 - Gardner-Denver 500 Portable Diesel Air Compressor	414.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Coppus TM-6 Ventilating Fan and Vent Tubing	30.00
1 - Ingersoll-Rand DA-35 Drifter Drill	30.00
1 - Ingersoll-Rand Model R48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (6 hrs. @ $8.00)	48.00
Total	$680.00

Distribution:

Mining Equipment Rental, month December	$632.00
Roads: Snow Removal	48.00
Total	$680.00

Certified Correct:
Francis A. Hancock, E.M.
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

MINING SUPPLIES USED DURING MONTH DECEMBER, 1952

Blasting Powder:		
On hand December 1	1200 lbs.	$265.20
Purchased during month	none	
Total	1200 lbs.	$265.20
On hand December 31	1000 lbs.	221.00
Used month December	200 lbs.	$ 44.20
Fuse:		
On hand December 1	3500 ft.	$ 43.05
On hand December 31	3000 ft.	36.90
Used month December	500 ft.	$ 6.15
Blasting Caps (6x)		
On hand Dec. 1	900 caps	$ 16.29
On hand Dec. 31	800 caps	14.48
Used month December	100 caps	$ 1.81
Miners Carbide:		
On hand Dec. 1	70 lbs.	$ 7.70
On hand Dec. 31	30 lbs.	3.30
Used month December	40 lbs.	$ 4.40
Mine Wedges:		
On hand Dec. 1	500 wedges	$ 17.87
On hand Dec. 31	250 "	8.94
Used month December	250 wedges	$ 8.93
Mine Track Ties (4"x6"x3')	none	
Mine Rails, 25 lb. (used)	none	
Horse Feed, Oats:		
On hand Dec. 1	40 lbs.	$ 1.40
Purchased during month	190 lbs.	6.65
Total	230 lbs.	$ 8.05
On hand Dec. 31	80 lbs.	2.80
Used month December	150 lbs.	$ 5.25
Horse Feed, Hay:		
On hand Dec. 1	765 lbs.	$ 19.13
Purchased during month	680 lbs.	17.00
Total	1445 lbs.	$ 36.13
On hand Dec. 31	425 lbs.	10.63
Used month December	1020 lbs.	$ 25.50
Diesel Fuel:		
On hand Dec. 1	300 gals.	$ 51.90
Purchased during month	110 gals.	19.03
Total	410 gals.	$ 70.93
On hand Dec. 31	165 gals.	28.55
Used month of December	245 gals.	$ 42.38

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WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-dMA-E30

Mining Supplies used during month December, 1952 (continued):

White Gasoline:		
On hand Dec. 1	20 gals.	$ 5.20
On hand Dec. 31	5 gals.	1.30
Used month December	15 gals.	$ 3.90

Certified Correct:
Francis A. Hancock, E.M.
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project No. DMA-94[illegible]-I-DMA-E30

INVENTORY Mining Supplies on hand December 31, '52 PAGE 1

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	1000# (20 bxs.)	1-1/8"x8" No. 3 Gelodyn Atlas Powder		.221	lb.	221 00
	3000 ft.	Black Monarch Safety Fuse		12.30	per thous.	36 90
	800	No. 6x Blasting caps (8 bxs)		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.	5/8"x2" Track Spikes		.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 Spec. 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	Assort. Pipe Fittings & Valves (used)				34 00
	12 sets	Mine Timbers		6.00	set	72 00
	425 lbs.	(5 bales) Hay		.025	lbs.	10 63
	80 lbs.	Oats		.035	lbs.	2 80
		Total				$524.64
		AMOUNT FORWARD				

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED
DEC 1 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of November, 1952 Docket No. DMEA 946X Contract No. I-DMA-E30

Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead-Zinc-Copper

Address 412 Western Bank Building - Missoula, Montana

Contract Amount, $85,850.00 Government Participation: 50 % Amount, $

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						Keeling Betty
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	1,562.90	40,075.10	41,638.00	1562.90	39904.82	41467.72
Supervision	45.00	1,464.38	1,509.38	45.00		
Technical Services		1,492.29	1,492.29			
(3) Operating Mat'ls. and Supplies:						
Timber	77.85	93.80	171.65	77.85		
Explosives		3,865.88	3,865.88			
Pipe		345.97	345.97			
Track						
	98.01	1,115.37	1,213.38	98.01	1305.25	1403.26
(4) Operating Equipment:						
Rental	857.00	16,825.24	17,682.24	857.00	16953.24	17810.24
Purchase		1,434.45	1,434.45			
Depreciation					160.00	160.00
(5) Initial Rehabilitation and Repairs		11.55	11.55			
(6) New Bldgs., Improvements, etc.		2,559.80	2,559.80			
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45			
Sampling and Analysis		40.25	40.25			
Payroll Taxes		1,558.80	1,558.80			
Liability Insurance	62.64	1,784.41	1,847.05	62.64		
36.31 125.83	162.14	8,486.04	8,648.18	162.14	8082.40	8244.54
(8) Contingencies (specify):						
Exhibit B		1,900.00	1,900.00			
Geologist		1,111.25	1,111.25			
TOTALS	2,865.54	84,621.03	87,486.57	2865.54	84524.99	87390.53

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

Date 12-10-52 *Payee Western Montana Exploration & Development Company, Inc.

Per Roy W. Key Roy W. Key Title President & General Mgr.

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

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

(Instructions on reverse)

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

$

Signature
(Authorized Certifying Officer)

Date Vou. No. 849
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E 31 in accordance with the terms of the contract.

Signature John S. McNabb Jr Title Mining Engineer Date 1-27-53

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature 1st Thomas E Howard Title Mining Engr Date 1/27/53

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GPO 83-38476

Form MF-104A
(April 1952)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of November 1952 Docket No. DMEA 946X Contract No. I-DMA-E30
Operator's Name Western Montana Exploration & Development Co, Inc. Minerals Lead-Zinc-Copper
Address 412 Western Bank Building - Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising	Ft	2865.54	49					
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		2865.54		87486.57				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date 12-10-52 Operator Western Montana Exploration & Development Co., Inc.

Per Roy W. Key Title President & General Manager

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

GPO 83-38475

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

ACCOUNTS PAYABLE & DISTRIBUTION FOR MONTH NOVEMBER, 1952

Accounts Payable:

Miller Machinery Co.	$ 225.00
Miller Machinery Co.	58.00
Lyon Construction Co.	414.00
Roy W. Key, M.D.	160.00
R.L. Lucier Sawmill	29.10
Raymond H. Heady Sawmill	48.75
Fickler's Motors	20.22
The Texas Company	15.06
N.P. Allen Ranch	25.00
Francis A. Hancock, E.M.	13.09
Farmers Union Oil Co.	18.22
Fischer's Lumber Yard	49.85
Hall Meat Market & Grocery	97.84
Fagan's Cash Store	74.01
Montana-Granite County	125.83
Davis Texaco Station	8.45
Montana Industrial Accident Board	62.64
Total	$1445.06

Distribution:

Mining Equipment Rental	$ 857.00
Mining Supplies	123.10
Mine Haulage (Horse Feed)	29.90
Air Compressor & Power Unit Operation	22.86
Transportation, Hauling Supplies, trips to mine, etc.	36.31
Office Supplies	.90
Tel. & Tel. Calls Missoula, Butte, etc.	12.19
Property Taxes	125.83
Payroll Taxes	62.64
Boarding House Supplies	174.33
Total	$1445.06

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project no. DMA-[illegible]5X -I-DMA-E30

INVENTORY Mining Supplies on hand December 1,1952 PAGE 1

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	1200 lbs.	1-1/8"x8" No.3 Gelodyn Atlas Powder		.221	lb.	265.20
	3500 ft.	Black Monarch Safety Fuse		12.30	thous.	43.05
	900	No. 6X Blasting caps (9 bxs.)		1.81	bx.	16.29
	70 lbs.	Miners Carbide		.11	lb.	7.70
	300 gals.	Diesel Fuel		.173	gal.	51.90
	20 gals.	White Gasoline		.26	gal.	5.20
	500	Mine Wedges		.03575	ea.	17.87
	10 lbs.	3/8"x3" Track Spikes		.17	lb.	1.70
	10 lbs.	½"x2" Track Bolts		.20	lb.	2.00
	12 prs.	18" Track Fish Plates		.60	pr.	7.20
	20 gals.	Standard Oil Stanoil #51 Compressor Oil		.901	gal.	18.02
	10 lbs.	Texaco Thuban No. 80 Lube		.1675	lb.	1.68
	12 lbs.	Texaco Regal Starfak Spec. Grease		.30	lb.	3.60
	1 only	1½" Brass Gate Valve		12.00	ea.	12.00
	248 ft.	3 wire #8 Tirex Power Cable (used)		.25	ft.	62.00
	1 only	Miners Powder Bag		6.25	ea.	6.25
	1 lot	Small Bolts & Washers				1.75
	1 lot	Assorted Pipe fittings & valves (used)				28.00
	16 sets	Mine timbers		6.00	set	96.00
	765 lbs.	Hay (9 bales)		.025	lb.	19.13
	40 lbs.	Oats		.035	lb.	1.40
		Total				$667.94
		AMOUNT FORWARD				

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

MINING SUPPLIES USED DURING MONTH NOVEMBER, 1952

Blasting Powder:		
On hand Nov. 1	1500 lbs.	$331.50
On hand Dec. 1	1200 lbs.	265.20
Used Month November	300 lbs.	$ 66.30
Fuse:		
On hand Nov. 1	6000 ft.	$ 73.80
On hand Dec. 1	3500 ft.	43.05
Used month November	2500 ft.	$ 30.75
Blasting Caps (6X)		
On hand Nov. 1	1200 caps	$ 21.72
On hand Dec. 1	900 caps	16.29
Used month November	300 caps	$ 5.43
Miners Carbide:		
On hand Nov. 1	110 lbs.	$ 12.10
On hand Dec. 1	70 lbs.	7.70
Used month November	40 lbs.	$ 4.40
Mine Wedges:		
On hand Nov. 1	360 wedges	$ 11.34
Purchased during month	1000 wedges	35.75
Total	1360 wedges	$ 47.09
On hand Dec. 1	500 wedges	17.87
Used month November	860 wedges	$ 29.22
Mine Track Ties (4"x6"x3 ft.)	none	
Mine Rails (25 lb. used)	none	
Horse Feed, Oats:		
On hand November 1	40 lbs.	$ 1.40
Purchased during month	140 lbs.	4.90
Total	180 lbs.	$ 6.30
On hand Dec. 1	40 lbs.	1.40
Used month November	140 lbs.	$ 4.90
Horse Feed, Hay:		
On hand November 1	560 lbs.	$ 14.00
Purchased during month	1000 lbs.	25.00
Total	1560 lbs.	$ 39.00
On hand Dec. 1	765 lbs.	19.13
Used month November	795 lbs.	$ 19.87

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

MINING SUPPLIES USED DURING MONTH NOVEMBER, 1952 (continued)

Diesel Fuel:		
On hand November 1	500 gals.	$ 86.50
On hand December 1	300 gals.	51.90
Used month November	200 gals.	$ 34.60
White Gasoline:		
On hand November 1	10 gals.	$ 2.60
Purchased during month	30 gals.	7.80
Total	40 gals.	$ 10.40
On hand December 1	20 gals.	5.20
Used month November	20 gals.	$ 5.20

Certified Correct:
F. A. Hancock,
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA 946X I-DMA-E30

PAYROLL DISTRIBUTION

Mine Development, Lower Wasa No. 3 Level:	
To driving No. 1 Raise 49 ft. @ $15.00 per ft. Contract	$ 735.00
To framing & Cutting Timber & Logging & making Laders No. 1 Raise	94.50
Cleaning up Cave in South Drift	26.96
Mine Air & Water Lines: Installing lines to No. 1 Raise	26.96
Repairing Tugger Hoist for No. 1 Raise	13.48
Air Compressor & Power Plant Operation & Maintenance	58.50
Mine Haulage: Care of Horse, Clean tracks & ditch, level down dump, etc.	63.00
Sharpening Tools: Drills, picks, & grinding drill bits, etc.	63.00
Indirect Costs:	
General Supervision	45.00
Engineering, Surveying, maps, etc.	30.00
Office Work	140.00
Administration: Trips to Missoula Office, etc.	30.00
Transportation: Hauling timer & supplies & trips to mine, etc.	77.50
General Camp Maintenance, Snow Removal, Care of Buildings, cutting wood	58.50
Boarding House:	
Labor Cooking	204.00
Total	$1666.40

COPY

Certified Correct:
Francis A. Hancock,
Mining Engineer in Charge

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

STATEMENT

Mining Equipment Rental Month, November, 1952

Miller Machinery Company, Missoula, Montana	
1 - Diesel-Electric Generator Set, 20 K.W., 3 phase, 220-440 Volts	$225.00
1 - Ingersoll-Rand, 1 H Little Tugger Air Hoist, Serial #1170	58.00
Lyon Construction Co., Missoula, Montana	
1 - Gardner-Denver, 500 cu. ft. Portable Diesel Air Compressor	414.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Chappus TM-6 Ventilating Fan and Vent Tubing	30.00
1 - I-R. DA-35 Drifter Drill	30.00
1 - I-R. Model R48 Stoper Drill	20.00
Total	$857.00

Distribution:
Mining Equipment Rental, Month November, 1952 $857.00

Certified Correct:
Francis A. Hancock,
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X -I-DMA-E30

SETTLEMENT SHEET

Mine Development Contracts, Month November, 1952

Lower Wasa No. 3 Level:
To driving No. 1 Raise 49 ft. @ $15.00 per ft. $735.00

Paid Contractors as per November, 1952 Payroll:

Clair R. Albano, 186 hrs. work @ $2.00 per hr.	$372.00
William F. Lucas, 181½ hrs. work @ $2.00 per hr.	363.00
Total	$735.00

Certified Correct:
Francis A. Hancock,
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

NARRATIVE Month November, 1952

During the month of November, No. 1 Raise was driven 49 feet making a total vertical distance for this raise of 84.5 feet up from the South drift level.

The raise is now showing considerable mineralization with some good ore in streaks and bunches, and it is expected that the next round or two will encounter the ore shown in U.S.B.M. Drill Hole No. 8A.

The formation passed through has been very disappointing in so far as furnishing pertinent data regarding just what has happened to the ore between the drill hole 8A and the Tessa No. 3 Level. Until the ore shown in the drill hole is encountered and its strike and dip determined no prediction of its continuity downward can be made.

A small air hoist was rented from the Miller Machinery Co. of Missoula and installed at the bottom of the raise to hoist timber, drill steel and tools, etc. The air and water lines were extended into and up the raise for drilling, also the vent tubing for ventilation.

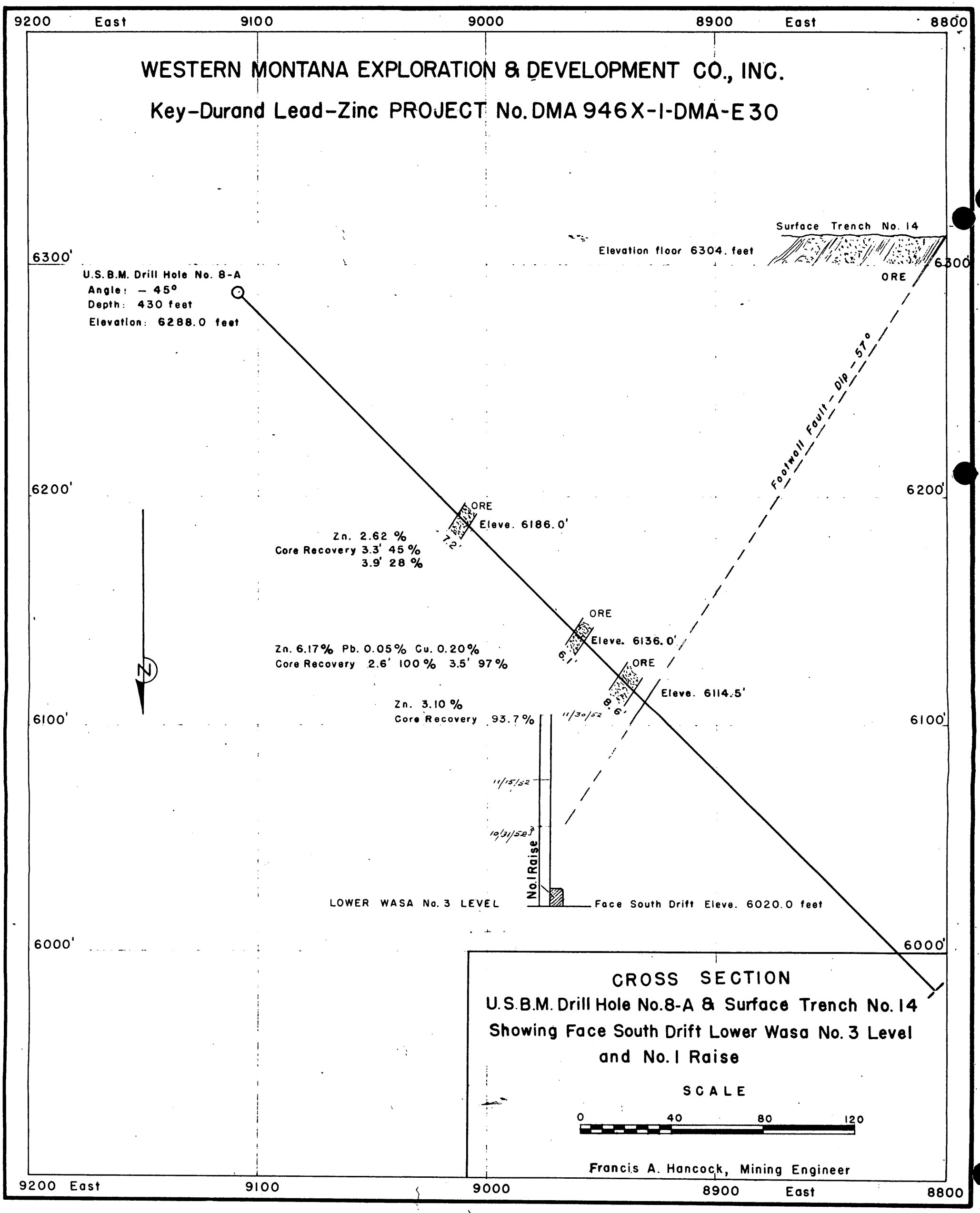
A small cave occurred in the fault zone along the south drift which had to be cleaned up by hand mucking.

These small items show on the labor distribution sheet for the month under review.

Francis A. Hancock
Mining Engineer in Charge

A certified true copy:

COPY


9200 East
9100
9000
8900 East
8800
WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
Key-Durand Lead-Zinc PROJECT No. DMA 946X-1-DMA-E30
Surface Trench No. 14
Elevation floor 6304. feet
6300'
ORE
U.S.B.M. Drill Hole No. 8-A
Angle: – 45°
Depth: 430 feet
Elevation: 6288.0 feet
Footwall Fault – Dip – 57°
6200'
ORE
Eleve. 6186.0'
Zn. 2.62 %
Core Recovery 3.3' 45 %
3.9' 28 %
ORE
Eleve. 6136.0'
Zn. 6.17% Pb. 0.05% Cu. 0.20%
Core Recovery 2.6' 100% 3.5' 97%
ORE
Eleve. 6114.5'
Zn. 3.10 %
Core Recovery 93.7%
11/30/52
6100'
11/15/52
10/31/52
No. 1 Raise
LOWER WASA No. 3 LEVEL
Face South Drift Eleve. 6020.0 feet
6000'
CROSS SECTION
U.S.B.M. Drill Hole No. 8-A & Surface Trench No. 14
Showing Face South Drift Lower Wasa No. 3 Level
and No. 1 Raise
SCALE
0
40
80
120
Francis A. Hancock, Mining Engineer

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

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of October 1952 Docket No. DMEA 946X Contract No. I-DMA-530
Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead-Zinc-Copper
Address 412 Western Bank Building, Missoula, Montana
Contract Amount, $ 85,850.00 Government Participation: 50 % Amount, $

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						Keeling Betty
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	1512.74	38562.36	40075.10	1512.74	38392.08	39904.82
Supervision	117.28	1347.10	1464.38			
Technical Services		1492.29	1492.29			
(3) Operating Mat'ls. and Supplies:						
Timber	16.80	77.00	93.80			
Explosives		3865.88	3865.88			
Pipe Ventbe	345.97		345.97			
Track 208.29 36.70	244.99	870.38	1115.37	244.99	1060.26	1305.25
(4) Operating Equipment:						
Rental	639.00	16026.24	16825.24	639.00	16314.24	16953.24
Purchase		1434.45	1434.45			
Depreciation	160.00			160.00		160.00
(5) Initial Rehabilitation and Repairs		11.55	11.55			
(6) New Bldgs., Improvements, etc.		2559.80	2559.80			
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45			
Sampling and Analysis		40.25	40.25			
Payroll Taxes	305.18	1253.62	1558.80			
Liability Insurance 39.30 7.50	137.51	1646.90	1784.41			
	66.80	8419.24	8486.04	66.80	8015.60	8082.40
(8) Contingencies (specify): Exhibit B		1900.00	1900.00			
Geologist		1111.25	1111.25			
TOTALS	3546.27	81074.76	84621.03	3546.27	80978.72	84524.99

I certify that the above bill is correct and that payment therefor has not been received.
Date November 7, '52 *Payee Western Montana Exploration & Development Co., Inc.
Per Roy Key Roy Key Title President & General Manager

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

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

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of: Totals Fwd to Nov. MF-104.

Signature (Authorized Certifying Officer)
Date 7/23/53 Vou. No. 849 (See other side)

3546.27 Fwd to Nov. MF-104

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Fdm-E 30 in accordance with the terms of the contract.

Signature John S. McNabb Jr. Title Mining Engineer Date 11-10-52

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Thomas E Howard Title Min Engr Date 12-1-52

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GPO 83-38476

Form MF-104A
(April 1952)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 8 1953

Month of October 195 2 Docket No. DMEA 946X Contract No. I-DMA-530
Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead-Zinc-Copper
Address 412 Western Bank Building, Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting	Ft.	~~3546.27~~ 3538.77	35.5					
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		~~3546.27~~ 3538.77		~~84621.03~~ 84559.49				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date November 7, 1952 Operator Western Montana Exploration & Development Co., Inc.

Per Ray W. Ray Title President & General Manager

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

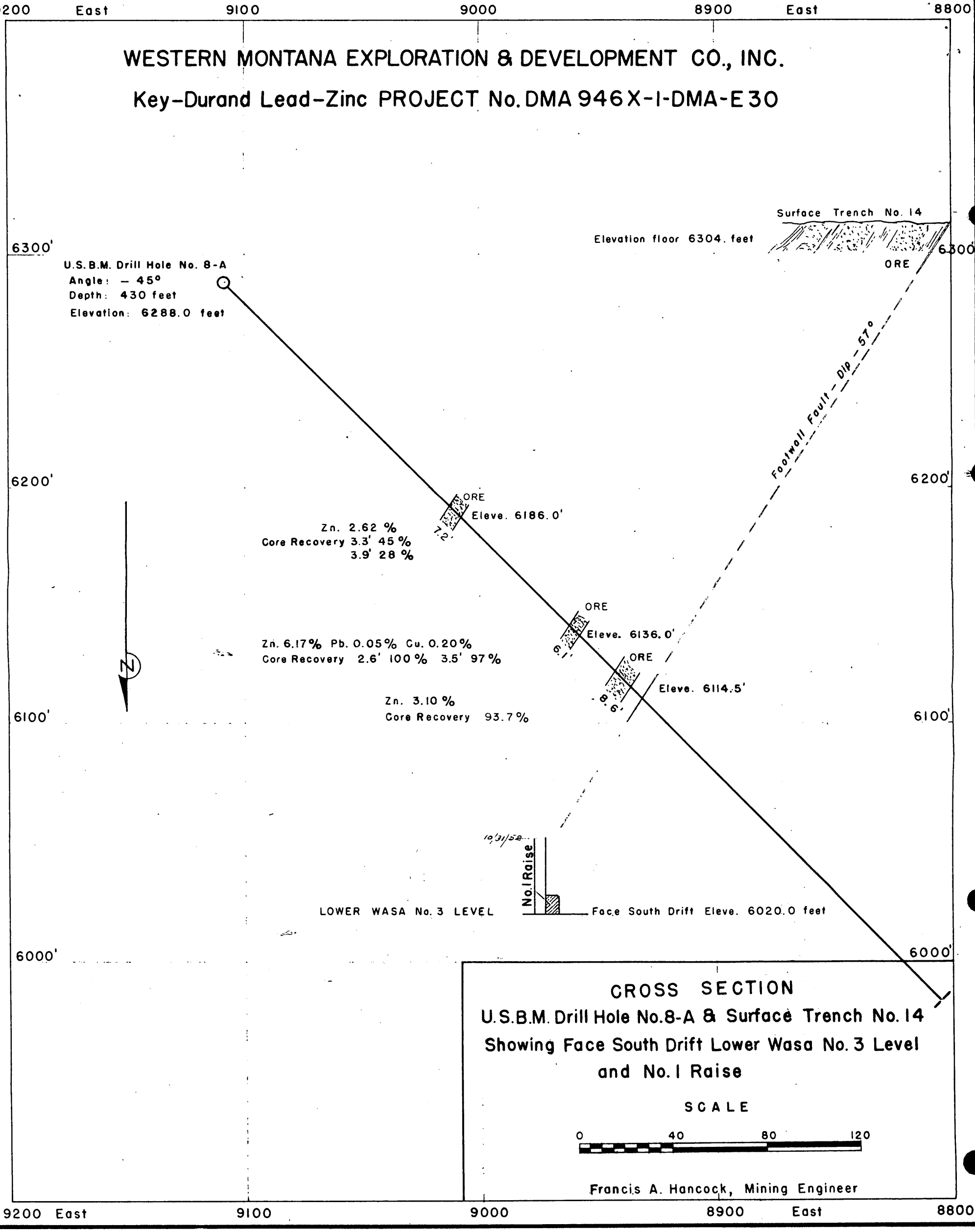
Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

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

GPO 83-38475

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

Key-Durand Lead-Zinc PROJECT No. DMA 946X-1-DMA-E30



CROSS SECTION

U.S.B.M. Drill Hole No.8-A & Surface Trench No. 14
Showing Face South Drift Lower Wasa No. 3 Level
and No. 1 Raise

SCALE

0 40 80 120

Francis A. Hancock, Mining Engineer

RECEIVED

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

SETTLEMENT SHEET

MINE DEVELOPMENT CONTRACTS: Month October, 1952

Lower Wasa No. 3 Level; South Drift:

To Driving No. 1 Raise	14 ft. @ $12.00 per ft.	$168.00
To Driving No. 1 Raise	21.5 ft. @ $15.00 per ft.	322.50
Extra Timbering and putting chute		60.00
	Total	$550.50

Paid Contractors as per October, 1952, Payroll:

Clair R. Albano	4½ days work @ $16.80	$ 75.60
August A. Byars	5½ days work @ $16.80	92.40
Chas. F. Turner	10 days work @ $21.25	212.50
Tarmo Matt Maki	8 days work @ $21.25	170.00
	Total	$550.50

COPY

Certified Correct
F. A. Hancock,
Engineer in Charge

RECEIVED

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

MINING SUPPLIES USED during Month October, 1952

Blasting Powder:		
On hand October 1	1650 lbs.	$364.65
Purchased during month	none	
Total	1650 lbs.	$364.65
On hand Nov. 1	1500 lbs.	331.50
Used month October	150 lbs.	$ 33.15
Fuse:		
On hand Oct. 1	7500 ft.	$ 92.25
Purchased during month	none	
Total	7500 ft.	$ 92.25
On hand Nov. 1	6000	73.80
Used month October	1500 ft.	$ 18.45
Blasting Caps (6X)		
On hand Oct. 1	1300 caps	$ 23.53
On hand Nov. 1	1200	21.72
Used month October	100 caps	$ 1.81
Miners Carbide:		
On hand Oct. 1	50 lbs.	$ 5.50
Purchased during month	100	10.50
Total	150 lbs.	$ 16.00
On hand Nov. 1	110	12.10
Used month October	40 lbs.	$ 3.90
Mine Wedges:		
On hand Oct. 1	800 wedges	$ 25.20
Purchased during month	none	
Total	800 wedges	$ 25.20
On hand Nov. 1	360	11.34
Used month October	440 wedges	$ 13.86
Mine Track Ties: (4"x6"-3 ft.)		
On hand Oct. 1	none	
On hand Nov. 1	none	
Used month October	none	
Mine Rails: (25 lb. used)		
On hand Oct. 1	none	
On hand Nov. 1	none	
Used month October	none	

COPY

Western Montana Exploration & Development Co., Inc.
Key-Durand Lead-Zinc Project No. DMA-946X-I-DMA-E30
Mining Supplies used during month October, 1952 (continued):

Horse Feed, Oats:		
On hand Oct. 1	none	
Purchased during month	135 lbs.	$ 4.70
Total	135 lbs.	$ 4.70
On hand Nov. 1	40	1.40
Used month October	95 lbs.	$ 3.30
Horse Feed, Hay:		
On hand Oct. 1	none	
Purchased during month	1280 lbs.	$ 32.00
Total	1280 lbs.	$ 32.00
On hand Nov. 1	560 lbs.	14.00
Used month October	720 lbs.	$ 18.00
Diesel Fuel:		
On hand Oct. 1	620 gals.	$107.26
Purchased during month	none	
Total	620 gals.	$107.26
On hand Nov. 1	500	86.50
Used month October	120 gals.	$ 20.76
White Gasoline:		
On hand Oct. 1	30 gals.	$ 7.80
Purchased during month	none	
Total	30 gals.	$ 7.80
On hand Nov. 1	10 gals.	2.60
Used month October	20 gals.	$ 5.20

Certified Correct:
Francis A. Hancock,
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

PAYROLL DISTRIBUTION

Distribution:	
Mine Development, Lower Wasa No. 3 Level:	
Driving No. 1 Raise from face south drift, 14 ft. @ $12.00per ft., Contract	$ 168.00
Driving No. 1 Raise from face south drift, 21.5 ft. @ $15.00 per ft., Contract	322.50
Driving No. 1 Raise from face south drift, extra timbering and Chute, Contract	60.00
Driving No. 1 Raise from south drift, Framing timbers and cutting logging, Day Work	98.26
South Drift: Timbering & Cribbing ground in fault, (6 sets)	80.88
Air Compressor & Power Plant, Operation & Maintenance	30.85
Mine Haulage: Care of and shoeing horse, clean ditch and tracks, level dump, etc.	69.36
Sharpening Tools: Grinding bits, sharp. drills and picks, rep's., etc.	46.25
Mine Ventilation : Installing Vent Tubing underground	42.37
Indirect Costs:	
General Supervision & Shift Bossing	117.28
Engineering: Surveying, Maps, etc.	37.04
Office Work, Mine & Missoula	174.08
Administration : Trips to Missoula Office, etc.	55.56
Transportation: Hauling Supplies & trips to mine	83.34
General Camp Maintenance: Cutting wood for winter, Maintenance buildings	115.60
Durand trips to find & employ miners for Raise, (3 days)	46.25
Boarding House:	
Labor cooking	198.00
Total	$1745.62

Certified Correct:
Francis A. Hancock,
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

ACCOUNTS PAYABLE AND DISTRIBUTION for Month of OCTOBER, 1952

ACCOUNTS PAYABLE:

Miller Machinery Company	$ 225.00
Miller Machinery Company	112.70
Miller Machinery Company	186.89
Lyon Construction Company	414.00
Roy W. Key, M.D.	160.00
Missoula Mercantile Company	233.27
Fischer's Lumber Yard	30.00
Farmers Union Oil Company	13.65
Raymond H. Heady Sawmill	16.80
Davis Texaco Station	16.75
Archie Fraser	25.00
N.P. Allen Ranch	32.00
Francis A. Hancock, E.M.	20.34
Hall Meat Market & Grocery	134.24
Fagan's Cash Store	53.70
Henry Kolbeck	35.00
Montana Industrial Board (Sept.)	137.51
Montana Unemploy. Compensation Comm.	190.40
Collector of Internal Revenue, S.S. Tax	114.78
Total	$2152.03

DISTRIBUTION:

Mining Equipment Rental	$ 799.00
Mining Supplies	225.09
Mine Ventilation, Vent Tubing	345.97
Mine Haulage, horse feed, etc.	36.70
Transportation, Hauling supplies, trips to mine	59.30
Payroll Taxes	442.69
Office Supplies (mine)	.96
Tel. and Tel.	11.88
Travel Expense	7.50
Boarding House Supplies	222.94
Total	$2152.03

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

STATEMENT

MINING EQUIPMENT RENTAL Month October, 1952

Miller Machinery Company, Missoula, Montana	
1 - Diesel-Electric Generator Set., 20 K.W., 3 phase, 220-440 volts	$225.00
Lyon Construction Co., Missoula, Montana	
1 - Gardner-Denver 500 cu. ft. Portable Diesel Air Compressor	414.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Coppus T.M-6 Ventilation Fan and Vent Tubing	30.00
1 - I.R. DA-35 Drifter Drill	30.00
1 - I.R. Model R48 Stoper Drill	20.00
Total	$799.00

Distribution:
Mining Equipment Rental- month October, 1952 $799.00

Certified Correct:
Francis A. Hancock
Engineer in charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

INVENTORY Mining Supplies on hand November 1,1952 PAGE 1

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	1500 lbs.	(30 bxs.)1-1/8"x8" No.3 Gelodyn Atlas Powder		.221	lb.	331.50
	6000 ft.	Black Monarch Safety Fuse		12.30	thous.	73.80
	1200	No. 6X Blasting caps, 12 bxs.		1.81	bx.	21.72
	110 lb.	Miners Carbide		.11	lb.	12.10
	500 gal.	Diesel Fuel		.173	gal.	86.50
	10 gal.	White Gasoline		.26	gal.	2.60
	360	Mine Wedges		.0315	ea.	11.3
	10 lbs.	3/8"x3" Track Spikes		.17	lb.	1.7
	12 lbs.	⅝"x2" Track Bolts		.20	lb.	2.40
	12 prs.	18" Fish Plates		.60	pr.	7.20
	30 gals.	Standard Oil Stanoil #51 Comp. oil		.901	gal.	27.03
	5 gals.	Texaco Ursa S.D. Diesel Lube Oil		1.126	gal.	5.63
	10 lbs.	Texaco Thuban No. 80 Lube		.1675	lb.	1.68
	15 lbs.	Texaco Regal Starfak Spec. Grease		.30	lb.	4.50
	3 lbs.	Texaco Marfak No. 0 Grease		.216	lb.	.65
	3 lbs.	Texaco Marfak H.D. No. 2 Grease		.216	lb.	.65
	1	#C9-R48 Rifle nut for stoper drill		5.90	ea.	5.90
	2	#B168-R38 Assembly rods " "		5.00	ea.	10.00
	2	#27-R48 Water Tubes for " "		2.90	ea.	5.80
	1	1½" Brass Gate Valve		12.00	ea.	12.00
	2	Miners Axe Handles		1.15	ea.	2.30
	248 ft.	3 Wire #8 Tirex Power Cable, used		.25	ft.	62.00
	1	Miners Powder Bag		6.25	ea.	6.25
	1 lot	Small Bolts & Washers				1.75
	1 lot	Assort. Pipe Fittings & Valves (used)				36.00
	30 sets	Mine Timbers		6.00	set	180.00
	560 lbs.	Hay (7 bales)		.02½	lb.	14.00
	40 lbs.	Oats		.03½	lb.	1.40
		~~AMOUNT FORWARD~~ Total				$928.40

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-E30

NARRATIVE, Month, October, 1952

The work underground during the month of October was confined to starting a vertical raise from the face of the south drift on the Lower Wasa No. 3 Level, as shown on the progress maps accompanying this report.

This raise is being driven to encounter the ore shown in U.S. Bureau of Mines diamond drill hole No. 8A and expose the structural geology between the south drift level and the drill hole.

The raise was driven a total distance of 35.5 feet. The poor progress made was caused by an injury to one of the miners on October, 9, and our being unable to get another crew of miners until October, 22.

The injured man has now recovered and was able to return to work on November 3, and it is expected the raise will reach the ore shown in the drill hole during the month of November.

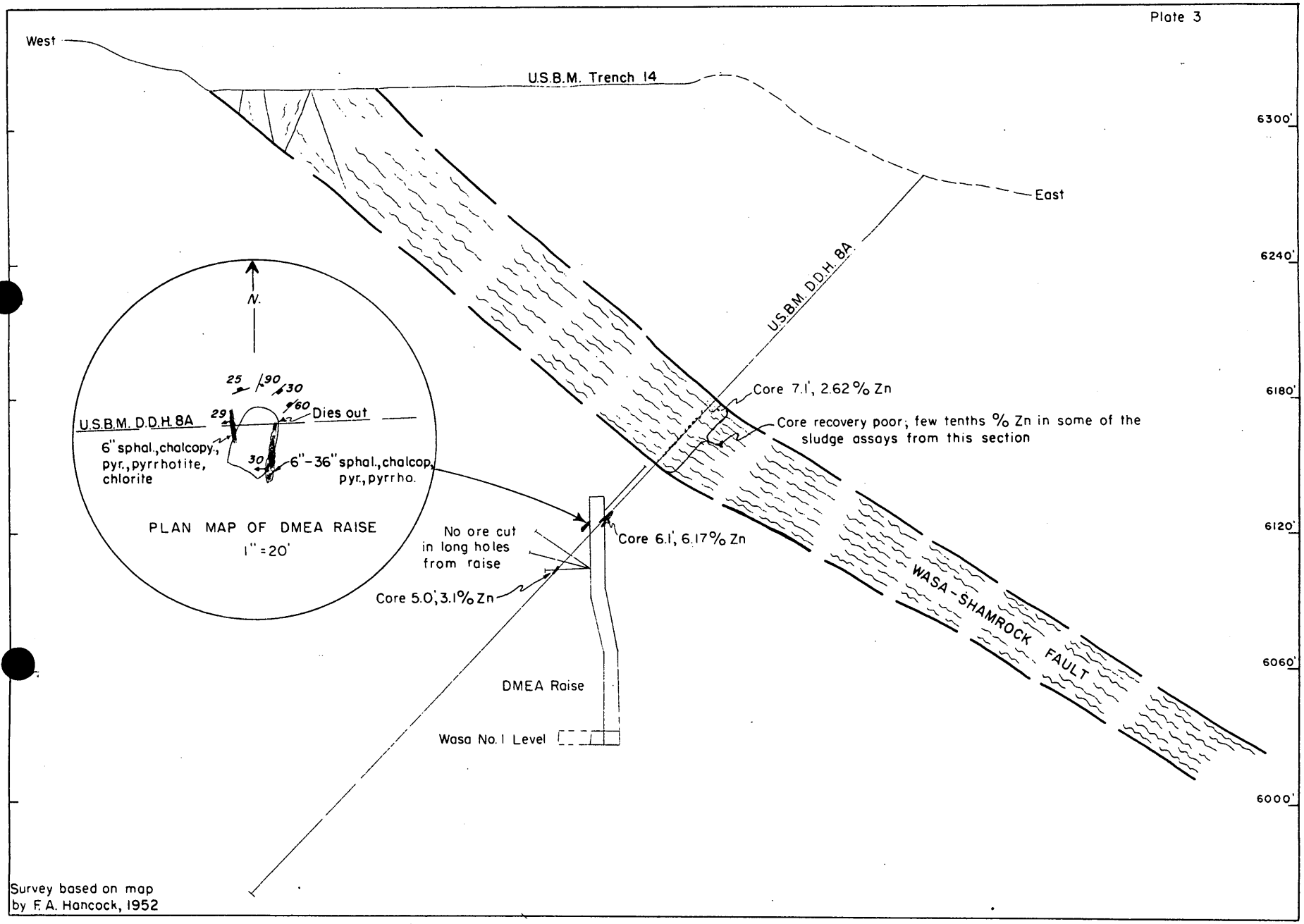
No other work was undertaken or accomplished, other than preparations of the camp for winter.

(Signed)

Francis A. Hancock
Mining Engineer in Charge

COPY

Certified a True Copy



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

Dunkleberg Mining District, Granite County, Montana

1" = 60'

Standard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U. S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. .....

Bu. Vou. No. 512

U. S. Interior, Mines
(Department, bureau, or establishment)

Voucher prepared at Spokane, Wash.
(Give place and date)

PAID BY

Cam

(For use of Paying Office)

THE UNITED STATES, Dr., Payee's Account No. Idm-E30

To Western Montana Exploration & Development Company, Inc.
(Payee)

412 Western Bank Building, Missoula, Montana
(Address) (City) (State)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	Sept. 1952	As per attached certified form MF-104 dated 10/24/52				1,516	89
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					

Shipped from to Weight Government B/L No. Total 1,516 89

(Payee must NOT use this space)

Differences .....

Account verified; correct for 1,516 89

(Signature or initials) .....

Contract No. Idm-E30 Date Req. No. Date Invoice Rec'd.

1,516.89

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	1,516.89	$1,516.89

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19....., for $..... } on Treasurer of the United States in favor of payee named above.
{ Cash, $....., on ....., 19.....

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.)

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22000a-2

F-104 (Rev.
il 1952)

UNITED STATES
PARTMENT OF THE INTER
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.
RECEIVED
NOV 21 1952

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of September, 195 2 Docket No. DMEA 946X Contract No. I-[illegible]-E30
Operator's Name Western Montana Exploration & Development Minerals Lead, Zinc, Copper
Address 412 Western Bank Bldg., Missoula, Mont.
Contract Amount, $ 85850.00 Government Participation: 50% Amount, $ 3129.82

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						Betty
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	1776.83	30786.53	38562.36	1645.55		
Supervision	209.82	1137.28	1347.10	209.82		
Technical Services		1492.29	1492.29			
(3) Operating Mat'ls. and Supplies:						
Timber		77.00	77.00			
Explosives		3865.88	3865.88			
Pipe						
Track						
	1.60	743.35	744.95	191.48		
(4) Operating Equipment:						
Rental	523.00	15503.24	16026.24	811.00		
Purchase		1434.46	1434.46			
Depreciation						
(5) Initial Rehabilitation and Repairs		11.55	11.55			
(6) New Bldgs., Improvements, etc.		2559.80	2559.80			
(7) Miscellaneous:						
Repairs to Equipment		456.46	456.46			
Sampling and Analysis	20.25	20.00	40.25	20.25		
Payroll Taxes		1253.62	1253.62			
Liability Insurance	195.68	1451.22	1646.90	195.68		
100.86 197.87						
59.48 15.44	403.64	8156.88	8560.52			
(8) Contingencies (specify):						
Eng. B		1900.00	1900.00			
Geologist		1111.25	1111.25			
TOTALS	3129.82	77960.79	81090.61	3073.78	77944.94	81018.72

I certify that the above bill is correct and just and that payment therefor has not been received.
Date October 24, 1952 Payee Western Montana Exploration & Development Company, Inc.
Per Roy W. Key Title President & General Manager

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

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

(Instructions on reverse)

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

$ 1516 89

Signature
(Authorized Certifying Officer)

Date Vou. No.
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E 30 in accordance with the terms of the contract.

Signature John S. McNabb Jr. Title Mining Engineer Date 10-26-52

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Thomas E Howard Title Mining Engr Date 10-30-52

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205675

Fo[illegible]F-104A
[illegible]52)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 21 1952

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Sept. 1952 Docket No. DMEA 946X Contract No. I-BM-F30
Operator's Name Western Montana Exploration & Develop. Co Minerals Lead Zinc Copper
Address 412 Western Bank Bldg., Missoula, Mont.

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting	ft.	2423.27	41					
Crosscutting	ft.	706.55	13					
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		3129.82		81090.61				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date October 24, 1952 Operator Western Montana Exploration & Development Company, Inc.

Per Roy W. Kay Title President & General Manager

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205676

WESTERN MONTANA EXPLORATION & DEVELOPMENT COMPANY, INC.

KEY-DURAND LEAD-ZINC PROJECT NO. DMA-946X, I-DMA-E30

Narrative for Month of September 1952

The work in the mine accomplished during the month of September consisted of driving the South Drift 41 feet, and 13 feet of crosscutting to the west from a point near the face of the drift, as shown on the accompanying progress map.

The face of the South Drift has now reached a point vertically under United States Bureau of Mines Diamond Drill Hole No. 8A as determined by transit survey and as the ore shown in the drill hole has not been found on the level, an upraise is advocated to explore the formation between the level and drill hole and to observe the ore shown in the drill hole.

The 13 feet of crosscut west was for the purpose of cutting through the fault that the South Drift had followed for a distance of 138 feet to expose the formation behind the fault at this point.

During the month under review, Geologists from the New Jersey Zinc Co., American Smelting & Refining Co., and the Consolidated Copper Co. visited the property and made an examination of the surface and underground workings. They were all favorably impressed with its possibilities for ore bodies and unanimous in their opinion that the formation between the level of the South Drift and drill hole above it and the ore in the drill hole as shown in the drill logs should be explored by a raise as advocated. However, geologist from American Smelting and Refining Company did suggest either a long drill hole or diamond core drill hole up 55 degree, bearing N. 45 degrees E. from present face of South Drift as being cheaper than raising to indications in U. S. Bureau of Mines Diamond Drill Hole 8A, such indications being 88'-94' vertically above the present sill and in same plane.

It would indeed be an odd geological situation for the two indications in U. S. Bureau of Mines Diamond Drill Hole 8A directly above present face to represent only "Pods of Ore" in the presence of such strong surface showings 200 feet above the indications (U.S.B.M. Trench No. 14), the showings in U. S. Bureau of Mines Diamond Drill Hole No. 10, 1175 feet to the south of Hole 8A, and the showings north of Diamond Drill Hole 8A, particularly in old Wasa stopes and especially the stope in and above No. 2 Wasa level.

Signed:
Francis A. Hancock, E.M.

Certified to be a true copy,

Roy W. Key

Roy W. Key

WESTERN [illegible] Co., INC.

[illegible] Project No. [illegible]46X-I-[illegible]-R30

INVENTORY Mining Supplies on hand Oct. 1, 1952 PAGE 1

SHEET NO. 1 PRICED BY E.A.H.

CALLED BY E.A.H. DEPARTMENT Mine EXTENDED BY E.A.H.

ENTERED BY E.A.H. LOCATION Rey-Durand Mine EXAMINED BY E.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	1680 lb.	(33 bxs.) 1-1/8 x 8" No. 3 Gelodyn Atlas Powder		.2310	lb.	364.65
	7500 ft.	Black Monarch Safety Fuse		12.30	thous.	92.25
	1300	(13 bxs.) No. 6X Blasting Caps		1.81	bx.	23.53
	50 lbs.	Miners Carbide		.11	lb.	5.50
	620 gals.	Diesel Fuel		.173	gal.	107.26
	30 gal.	White Gasoline		.26	gal.	7.80
	800	Mine Wedges		.0318	ea.	25.20
	10 lbs.	3/8"x3" Track Spikes		.17	lb.	1.70
	12 lbs.	¾"x2" Track Bolts		.20	lb.	2.40
	12 pr.	16" Fish Plates		.60	pr.	7.20
	35 gal.	Standard Oil Stanoil 51 comp. Oil		.901	gal.	31.54
	15 gal.	Texaco Cras E.D. Diesel Lube Oil		1.126	gal.	16.89
	10 lbs.	Texaco Thuban No. 80 Lube		.1675	lb.	1.68
	15 lbs.	Texaco Starfak Spc. Grease		.30	lb.	4.50
	3 lbs.	Texaco Marfak No. 0 Grease		.216	lb.	.65
	3 lbs.	Texaco Marfak H.D. No. 2 Grease		.216	lb.	.65
	8 gal.	Texaco A. F. Antifreeze		2.51	gal.	20.08
	1 only	168-248 Rifle Nut for Stoper Drill		5.90	ea.	5.90
	2 only	168-238 Assembly Lock for Stoper Drill		5.00	ea.	10.00
	2 only	27-148 Water Tubes		2.90	ea.	5.80
	1 only	12" Brass Gate Valve		12.00	ea.	12.00
	3 only	Miners Axe Handles		1.15	ea.	3.45
	1 only	Miners Sledge handles		1.20	ea.	1.20
	248 ft.	3 Wire #8 Firex Power Cable (used)		.25	ft.	62.00
	1	Miners Powder Bag		6.25	ea.	6.25
	1 lot	Drill Bolts & Washers				1.25
	1 lot	Assorted Pipe Fittings & Valves (used)				28.00
	60 sets	Mine Timbers		6.00	set	300.00
						1148.33
		AMOUNT FORWARD				

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WEST MONTANA EXPLORATION & DEVELOPMENT CO., INC.

KEY-LITTLE LEAD-ZINC Project No. DMA-946X-I-LLA-E30

MINING EQUIPMENT COST ACCOUNTING, SEPTEMBER, 1952

Blasting Powder:		
On hand Sept. 1	2000 lbs.	$ 442.00
Purchased during month	none	
Total	2000 lbs.	$ 442.00
On hand Oct. 1	1650 lbs.	364.65
Used month September	350 lbs.	$ 77.35
Fuse:		
On hand Sept. 1	9000 ft.	$ 110.70
purchased during month	none	
Total	9000 ft.	$ 110.70
On hand Oct. 1	7500 ft.	92.25
Used month September	1500 ft.	$ 18.45
Blasting Caps (6x):		
On hand Sept 1	1500 caps	$ 27.15
Purchased during month	none	
Total	1500 caps	$ 27.15
On hand Oct. 1	1300 caps	23.53
Used month September	200 caps	$ 3.62
Miners Carbide:		
On hand Sept. 1	90 lbs.	$ 9.90
Purchased during month	none	
Total	90 lbs.	$ 9.90
On hand Oct. 1	50 "	5.50
Used month of September	40 lbs.	$ 4.40
Line Wedges:		
On hand Sept. 1	820 wedges	$ 25.83
Purchased during month	none	
Total	820 wedges	$ 25.83
On hand Oct. 1	800 "	25.20
Used month September	20 wedges	$ .63

Line Track Ties: (4"x6"-3 ft.)
On hand Sept. 1 — none
Purchased during month — none
Used during September--used rails and ties from Crosscuts

Line Rails: (25 lb. Used)
No rails on hand and none purchased
Used rails from Crosscuts during September

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC Project No. DMA-946X-I-DMA-530

MINING SUPPLIES USED DURING MONTH, SEPTEMBER, 1952 (Continued):

Horse Feed, Oats:		
On hand Sept. 1	none	
Purchased during month	235 lbs.	$ 6.75
Total	235 lbs.	$ 6.75
On hand Oct. 1	none	
Used during month September	235 lbs.	$ 6.75
Horse Feed, Hay:		
On hand Sept 1	none	
Purchased during month	680 lbs.	$ 17.00
Total	680 lbs.	$ 17.00
On hand Oct. 1	none	
Used month September	680 lbs.	$ 17.00
Diesel Fuel:		
On hand Sept. 1	165 gal.	$ 28.55
Purchased during month	724 "	125.25
Total	889 gals.	$153.80
On hand Oct. 1	620 gals.	107.26
Used month September	269 gals.	$ 46.54
White Gasoline:		
On hand Sept. 1	5 gals.	$ 1.30
Purchased during month	30 gals.	7.80
Total	35 gals.	$ 9.10
On hand Oct. 1	30 gals.	7.80
Used month September	5 gals.	$ 1.30

Certified Correct:
Francis A. Hancock,
Engineer in Charge.

COPY

Standard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U. S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. Wash

Bu. Vou. No. [illegible]-165

Defense Minerals Administration
RECEIVED
OCT 28 1952 4/52

U. S. Interior, Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Oregon
(Give place and date)

PAID BY

(For use of Paying Office)

THE UNITED STATES, Dr., Payee's Account No. Idm-E 30

To Western Montana Exploration & Development Company, Inc.,
(Payee)

412 Western Bank Building, Missoula, Montana
(Address) (City) (State)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms net	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	August 1952	As per attached certified form MF-104 dated September 15, 1952				2,747	49
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					
Shipped from	to	Weight	Government B/L No.		Total	2,747	49

(Payee must NOT use this space)

Differences

Account verified; correct for 2,747 49

(Signature or initials)

Contract No. Idm-E30 Date Req. No. Date Invoice Rec'd.

2,747.49

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	2,747.49	2,747.49

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19....., for $..... } on Treasurer of the United States in favor of payee named above.
{ Cash, $....., on ....., 19.....

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.)

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22900a-2

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires

RECEIVED
OCT 28 1952

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of August 1952 Docket No. DMEA 9462 Contract No. I-DMA-330
Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead, Zinc & Copper
Address 412 Western Bank Building, Missoula, Montana
Contract Amount, $ 85,850.00 Government Participation: 50 % Amount $ ~~5510.83~~ 42,925.00 (9725)

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	2357.66	34428.87	36786.53	✓	✓	
Supervision	199.60	937.60	1137.20	✓	✓	
Technical Services	363.35	1128.94	1492.29	✓	✓	
(3) Operating Mat'ls. and Supplies:						
Timber		77.00	77.00		✓	
Explosives	607.70	3258.10	3865.80	✓	✓	
Pipe						
Track						
Other	434.40	308.95	743.35	559.83	308.95	868.78
(4) Operating Equipment:						
Rental	889.00	14454.24	15503.24	✓	✓	✓
Purchase		1434.45	1434.45		✓	✓
Depreciation	160.00			✓		
(5) Initial Rehabilitation and Repairs		11.55	11.55		✓	✓
(6) New Bldgs., Improvements, etc.		2559.80	2559.80		✓	✓
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45		✓	✓
Sampling and Analysis	7.50	12.50	20.00	✓	✓	✓
Payroll Taxes		1253.62	1253.62		✓	✓
Liability Insurance	224.26	1226.96	1451.22	✓	✓	✓
Other	235.36	7921.52	8156.88	94.08	✓	8,018.60
(8) Contingencies (specify):						
		1900.00	1900.00		✓	✓
Geologist	32.00	1079.25	1111.25	✓	✓	✓
TOTALS	~~5510.83~~	~~72449.96~~	~~77960.79~~	5,494.98	72,449.96	77,944.94

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

Date Sept. 15, 1952 *Payee Western Montana Exploration & Development Company, Inc.

Per Roy W. Roy Title Roy W. Roy President & General Mgr.

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

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

(Instructions on reverse)

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

$ 2,747.49

Signature
(Authorized Certifying Officer)

Date 10-23-52 Vou. No.
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idn. E 3 0 in accordance with the terms of the contract.

Signature John S. McNabb Jr. Title Mining Engineer Date 9-16-52

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

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

MONTHLY REPORT OF OPERATOR

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

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 28-R1151
Approval expires 30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 28 1952

Month of August 1952 Docket No. DMEA 946X Contract No. I-DMA-E30
Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead, Zinc & Copper
Address 412 Western Bank Building, Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting	Ft	5510.83	163					
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		5510.83		7796079				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date September 15, 1952 Operator Western Montana Exploration & Development Co., Inc.

Per Roy W. Key Title President & General Manager

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

REMARKS:

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205676

Project No. [illegible]A-946X I-D[illegible]A-B30

Western Montana Exploration & Development Co., Inc. Key-Durand Lead-Zinc

INVENTORY

Mining Supplies on hand Sept., 1, 1952 PAGE 1

SHEET NO. 1 PRICED BY P.A.H.

CALLED BY P.A.H. DEPARTMENT Mine EXTENDED BY P.A.H.

ENTERED BY P.A.H. LOCATION Key-Durand Mine EXAMINED BY P.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	2000 #	(40bxs) 1-1/8"x8" No.3 Geladyn Powder Atlas		.2210	lb.	442 00
	9000 ft.	Black Monarch Safety Fuse		12.30	per thous.	110 70
	1500	No. 6X Blasting Caps (15 bxs.)		1.81	bx.	27 15
	90 #	Miners Carbide		.11	lb.	9 90
	165 gal	Diesel Fuel		.173	gal.	28 55
	5 gal.	White Gasoline		.26	gal.	1 30
	820	Mine Wedges		.0515	ea.	42 23
	10 lbs.	3/8"x3" Track Spikes		.17	lb.	1 70
	15 "	½"x2" track Bolts		.20	lb.	3 00
	16 pr.	18" Fish Plates		.60	pr.	9 60
	40 gal.	Standard Oil Stanoil #51 Corp. Oil		.901	gal.	36 04
	4 gal.	Texaco EP-[illegible] Rock Drill Oil		.69	gal.	2 76
	18 gal.	Texaco Ursa S.D. Diesel Lube Oil #30		1.126	gal.	20 27
	10 lbs.	Texaco Thuban No. 80 Lube		.1675	lb.	1 68
	15 lbs.	Regal Starfak Spec. Grease		.30	lb.	4 50
	3 lbs.	Texaco Marfak No. o Grease		.216	lb.	65
	3 lbs.	Texaco Marfak No. 2 Grease		.216	lb.	65
	1	#69-R48 Rifle Nut for Stoper drill		5.90	ea.	5 90
	2	#B168-R48 Assembly rods " "		5.00	ea.	10 00
	2	#27-R48 Water Tubes		2.90	ea.	5 80
	1	1½" Brass Gate Valve		12.00	ea.	12 00
	4	Miners Axe Handles		1.15	ea.	4 60
	1	Miners Sledge Handles		1.20	ea.	1 20
	248 ft.	3 Wire #8 Firex Power Cable (used)		.25	ft.	62 00
	1	Miners Powder Bag		6.25	ea.	6 25
	1 lot	Small Bolts and Washers				1 25
	1 lot	Assorted pipe fittings & valves, used				28 00
	50 sets	Mine Timbers		6.00	set	300 00
		AMOUNT FORWARD xxxxxxxxxx TOTAL				$1163 28

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WESTERN MONTANA EXPLORATION & DEVELOPMENT COMPANY, INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X I-DMA-E30

NARRATIVE Month of August, 1952

During the month of August all work done was confined to driving the South Drift in Lower Mesa No. 3 Level, with the exception of 4 hours trenching to finish that work for Mr. Glockzin, the geologist, and the regular camp routine:

A progress of 160 feet was made in the south drift, following a course approved by Mr. Glockzin. A major fault was cut as shown on the progress map, and as the drift was gaining farther east than was intended, Mr. Glockzin decided it best to follow the fault to the target area, directly under U.S. Bureau of Mines diamond drill hole No. 8A. A point 30 feet short of the target was reached on August 31, and on September 4, the face of the drift was directly under the target.

No ore was encountered in the drifting, although the formation is well mineralized and showing some sphalerite in the cleavage planes.

The drift is now being turned sharply to the east to crosscut the formation in that direction. Later a short crosscut will be driven from the same point, west through the fault to explore the formation in that direction.

It is the writers opinion that a raise should be started from the present face of the drift, to explore the formation between the drift level and the ore shown in the drill hole, a distance of 95 feet. This at least would prove what has happened to cut off the ore between the drill hole and the lower level.

It is not probably that the drill hole cut the bottom of the ore at that point, so it may not be necessary to raise all of the 95 feet before encountering the ore.

Signed
Francis A. Hancock
Engineer in charge

Certified to be a
True and Correct Copy

Roy W. Key

Roy W. Key

COPY

Region II

P. O. Box 492
Albany, Oregon

October 24, 1952

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

Reference: August MF-104
Contract Idm-E-30

Dear Sir:

Your August MF-104, submitted in the amount of $5,510.83, has been approved for $5,494.98 and payment will be made in the amount of $2,747.49.

A deduction of $15.85 has been made under Item (7) Other, covering stamps, telephone calls, postage and statement forms. These items are considered overhead.

We have changed $125.43 from (7) Other to (3) Other, inasmuch as the purchase covered Diesel Oil for Air Compressor and Power Plant Operation.

Very truly yours

W. Rulon Lee
Finance Officer

wah
cc: F/F
Contract
August MF-104
Wah. (2)
Volin (2)

Region II

P. O. Box 492
Albany, Oregon

October 24, 1952

Mr. Roy W. Kay
Western Montana Exploration
& Development Company, Inc.
412 Western Bank Building
Missoula, Montana.

Reference: August MF-104
Contract Idm-E-30

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Very truly yours

W. Rulon Lee
Finance Officer

wh
ccr R/P
Contract
August MF-104
Nash. (2)
Wolin (1)

Standard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U.S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

Washington

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. .....

Bu. Vou. No. DMA-414

U. S. Interior, Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Oregon 10/8/52
(Give place and date)

THE UNITED STATES, Dr., *Payee's Account No.* I DMA-E 30

To Western Montana Exploration & Development Co., Inc
(Payee)

412 Western Bank Building, Missoula, Montana
(Address) (City) (State)

PAID BY

(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	July 1952	As per attached certified form MF-104 dated September 15, 1952				3,670	09
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					

Shipped from to Weight Government B/L No. Total 3,670 09

(Payee must NOT use this space)

Differences .....

Account verified; correct for 3,670 09

(Signature or initials) .....

Contract No. I DMA-E 30 Date Req. No. Date Invoice Rec'd.

3,670.09

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	3,670.09	3,670.09

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19....., for $..... } on Treasurer of the United States in favor of payee named above.
{ Cash, $....., on ....., 19.....

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.)

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22900a-2

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

Wash

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

Betty

Month of July, 1952 Docket No. DMEA 946X Contract No. I-DMA-130

Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead, Zinc & Copper

Address 412 Western Bank Building, Missoula, Montana

Contract Amount, $ ~~65,500.00~~ 85,850.00 Government Participation: 50 % Amount, $ ~~7340.18~~ ~~33,250.00~~ 42,925.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	2685.79	31743.08	34428.87	2685.79	✓	✓
Supervision	187.50	750.18	937.68	187.50	✓	✓
Technical Services	378.94	750.00	1128.94	378.94	✓	✓
(3) Operating Mat'ls. and Supplies:						
Timber		77.00	77.00		✓	✓
Explosives	497.00	2761.18	3258.18	497.00	✓	✓
Pipe						
Track						
Other	185.05		308.95	308.95		✓
June Additions	123.90					
(4) Operating Equipment:						
Rental	889.00	13405.24	14454.24	889.00	✓	✓
Purchase		1434.45	1434.45		✓	✓
Depreciation	160.00			160.00		
(5) Initial Rehabilitation and Repairs		11.55	11.55		✓	✓
(6) New Bldgs., Improvements, etc.		2559.80	2559.80		✓	✓
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45		✓	✓
Sampling and Analysis		12.50	12.50		✓	✓
Payroll Taxes	311.28	942.34	1253.62	311.28	✓	✓
Liability Insurance		1226.96	1226.96		✓	✓
Other	385.30	7079.05	7921.52	844.47	✓	✓
June Additions	457.17					
(8) Contingencies (specify): Exhibit B		1900.00	1900.00		✓	✓
Geologist Survey	1079.25		1079.25	1079.25		✓
TOTALS	7340.18	65109.78	72449.96	7,340.18	65,109.78	72,449.96

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

Date Sept. 15, 1952 Payee Western Montana Exploration & Development Co., Inc.

Per Roy W. Key Title President & General Mgr.

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

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

(Instructions on reverse)

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

$ 3670.09

Signature
(Authorized Certifying Officer)

Date 10-6-52 Vou. No.
(See other side)

OCT 8 1952

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. IdmE 30 in accordance with the terms of the contract.

Signature John S. McNabb Jr. Title Mining Engineer Date 9-16-52

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

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

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of July 1952 Docket No. DMEA 946X Contract No. I-DMA-B30
Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead, Zinc & Copper
Address 412 Western Bank Building, Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting	Ft	7041.15	144					
Crosscutting		299.03	6					
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		7340.18		72449.96				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date Sept. 15, 1952 Operator Western Montana Exploration & Development Co., Inc.

Per Roy W. Key Title President & General Manager

REMARKS:

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

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205676

JUNE REPORT		Item total before correction	Deleted, your letter 7/28/52
Item 3	Explosives	$262.50	
	Drilling & Misc. (deleted)	123.90	$123.90
		$386.40	
	Item from Distribution Sheet		
	Column of Mining Supplies		
	Bill No. 2	98.75	98.75
	Bill No. 5	20.40	20.40
	Bill No. 12	263.50	1.00
	Column of Small Tools & Equipment		
	Bill No. 12	3.75	3.75
		$386.40	$123.90
Item 7	Sampling & Assaying	$ 12.50	
	Liability Insurance	151.19	
	Other	457.17	$457.17
		$620.86	
	Items from Distribution Sheet		
	Column of		
	Mine Haulage	$ 76.01	$ 76.01
	Air Compressor & Power Unit	130.71	130.7[illegible]
	Transportation	36.67	36.[illegible]
	Geological Survey (consultant)	195.22	195.22
	Engineering and Surveying	8.75	
	Assaying	3.75	
	Office Supplies	.81	.81
	Telephone and Telegraph	15.75	15.75
	Property Acct.	2.00	2.00
	Liability Ins. (WC)	151.19	
		$620.86	$457.17

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT COMPANY, INC.

KEY-DURAND LEAD-ZINC Project No. DMA-946X I-DMA-E30

NARRATIVE Month of July, 1952

The progress made in the mine during the month of July consisted of driving 144 feet in the South Drift and 6 feet of Crosscut east from the south drift. This progress is shown on the regular monthly progress map accompanying this report.

The drifting was done in accordance with the recommendation of Mr. Albert R. Glockzin, Geologist, and approval of the DMEA field offices in Spokane, Washington.

Very hard rock was encountered in driving the drift, causing a considerable amount of drill steel breakage and taking from 40 to 50 drill bits to drill a 5 foot round of holes. We found it necessary to pay an additional 50 cents per foot to the contractors through this hard formation, making it cost $10.50 per foot for labor, instead of the regular $10.00 per foot we had been paying.

No ore was found in this 144 feet of advance. The drift will be continued to the target area, a point directly under U.S. Bureau of Mine diamond drill hole No. 8A.

The 6 ft. of Crosscut East was driving at a point in the South drift just south of survey Station No. 8, for the purpose of exposing the ore for sampling at this point. This is the same ore showing all along the South Drift up to this point, and which was cut in Crosscuts Nos. 1, 2, & 3 East.

In addition to the above work underground a total of $1404.62 was spend for Surface Trenching for Mr. Glockzin, the Geologist, in connection with his geological survey of the mine.

This work consisted of cutting down in Trench No. 14 to expose a 12 to 20 foot face across the trench and expose the footwall for a length of 80 feet.

A new Trench No. 12½ was made just north of Trench No. 13 which took considerable bulldozer time because much of the muck from Trench No. 13 had to be removed to get a 12 foot face and expose the footwall in the new trench.

Trench No. 12 was made much deeper and wider near Mass No. 1 Adit Level to better expose the formation at that point.

All other rountine work is shown on the cost sheets for the

COPY

month under review.

Signed
Francis A. Hancock
Engineer in Charge

Certified to be a true and correct copy

Roy W. Key

Roy W. Key

COPY

59

Standard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U. S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. .....

Bu. Vou. No. DMA-304

U. S. Interior, Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Oregon 7/28/52
(Give place and date)

THE UNITED STATES, Dr., Payee's Account No. DMA-E 30

To Western Montana Exploration & Development Co., Inc.,
(Payee)

412 Western Bank Building, Missoula, Montana
(Address) (City) (State)

PAID BY

(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms net	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	June 1952	As per attached certified form MF-104 dated July 14, 1952				2,444	07
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					

Shipped from to Weight Government B/L No. Total 2,444 07

(Payee must NOT use this space)

Differences .....

Account verified; correct for 2,444 07

(Signature or initials) .....

Contract No. I-DMA-E30 Date Req. No. Date Invoice Rec'd.

2,444.07

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	2,444.07	2,444.07

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19..., for $..... } on Treasurer of the United States in favor of payee named above.
Cash, $....., on ....., 19...

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.).

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22000a-2

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

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of June, 1952 Docket No. DMEA 946X Contract No. I-DLA-330

Operator's Name Western Montana Exploration & Development Co. Minerals Lead, Zinc, Copper

Address 412 Western Bank Building, Missoula, Montana

Contract Amount, $66,500.00 Government Participation: 50 % Amount, $5,469.22

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	2487.98	29255.10	31743.08			
Supervision	174.98	575.20	750.18			
Technical Services	750.00		750.00			
(3) Operating Mat'ls. and Supplies:						
Timber		77.00	77.00			
Explosives	262.50	2498.68	2761.18			
Pipe						
Track						
Drilling & Misc.	123.90		123.90	—o—		
(4) Operating Equipment:						
Rental	889.00	12356.24	13245.24			
Purchase		1434.45	1434.45			
Depreciation	160.00					
(5) Initial Rehabilitation and Repairs		11.55	11.55			
(6) New Bldgs., Improvements, etc.		2559.80	2559.80			
(7) Miscellaneous:						
Repairs to Equipment		456.45	456.45			
Sampling and Analysis	12.50		12.50			
Payroll Taxes		942.34	942.34			
Liability Insurance	151.19	1075.77	1226.96			
Other	457.17	7079.05	7536.22	—o—		
(8) Contingencies (specify):						
Exp		1900.00	1900.00			
TOTALS	5469.22	60221.63	65690.85	4888.15	60,221.63	65,109.78

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

Date July 14, 1952 *Payee Western Montana Exploration & Development Co., Inc.

Per Roy W Kay Title President & General Manager

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

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

(Instructions on reverse)

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

$ 2,444.07

Signature W R L
(Authorized Certifying Officer)

Date 7/15/52 Vou. No.
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-C-30 in accordance with the terms of the contract.

Signature Thomas E. Howard Title Mining Engr. Date 7-24-52

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Glenn Rush Title Mng. Engr. Date 7/24

MONTHLY REPORT OF OPERATOR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of June 1952 Docket No. DMEA 946X Contract No. I-DLA-E30

Operator's Name Western Montana Exploration & Development Co., Inc. Minerals Lead, Zinc, Copper

Address 412 Western Bank Building, Missoula, Montana

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting		5466.22	124					
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		5469.22	65	65690.85				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								

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

Date July 14, 1952 Operator Western Montana Exploration & Development Co., Inc.

Per Roy W. Kay Title President & General Manager

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

REMARKS:

(Instructions on reverse)

(For Government use only)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 1 1952

INSTRUCTIONS

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

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

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

U. S. GOVERNMENT PRINTING OFFICE 205676

DMA-946X
I-DMA-E30

NARRATIVE FOR JUNE 1952

The progress made in the mine during the month of June consisted of driving 124 feet of Crosscuts as follows:

Crosscut No. 3 East was driven 49 feet making a total of 239.5 feet at which point the hanging wall of the ore zone was reached. Lenticular masses and stringers of good ore were encountered throughout the 49 feet advanced, and 3 feet or ore assaying 8.67% zinc, 0.21% lead and 0.40% copper was found next to the hanging wall.

Crosscut No. 1 West was started at a point 81.25 feet south from Crosscut No. 2 East (see progress map) and was driven a net distance of 57 feet west from the South drift. In addition to the 57 feet driven, two side-swipes of 3 feet each, to make room for the track switch were paid for on the contract making a total of 63 feet in this Crosscut. This West Crosscut was driven to explore the West side area of the South drift on the chance that the dip of the ore shown on the footwall in Trench No. 13 had steepened and therefore was on the West side of the drift. No ore was found other than some mineralization in the fractures of the formation. This area will be explored further by drilling a long test hole from the face of this Crosscut with the Ingersoll-Rand DA-35 Drifter Drill.

Two 6 foot Crosscuts were driven at points shown on the progress map to cut the ore encountered in driving the South drift, one on the West side of the drift and the other on the East. A third one was started on the East side but not finished for this report. These short Crosscuts were driven to determine the width of the ore at these points and provide faces from which adequate samples could be cut.

The Portals of the Wasa Nos. 1 and 2 Tunnels being in a very bad condition from rotting of the timbers and caving ground, damming the water and cutting off ventilation in the underground workings, we removed the obstruction by bulldozing. This work was done at a total cost of $148.78 which includes the rental of the tractor and dozer. This work is not covered under our DMA Contract, but should have been provided for.

A total of $632.02 was spent on clearing and logging off the Mill building site. This item also is not covered under our DMA Contract and is therefore deleted on the report.

COPY

DMA-946X
I-DMA-E30

Narrative for June 1952, cont.

The services of a consulting Geologist having been recommended and approved by the Field Office of the DMEA, and our contract amended to cover this service, Mr. Albert R. Glockzin of Missoula, Montana was employed to make a thoreugh geological survey of the property in an endeavor to solve the problem of what happens to the ore between Trench No. 13 and the South drift of Lower Wasa No. 3 Level.

Mr. Glockzin receives a salary of $750.00 per month for his services, which together with the other expense of an assistant and bulldozing for making exposures on the surface, all necessary for this survey, a total of $1189.58 was expended during the month of June. The results of this survey so far is most encouraging, and it is believed will solve our problems underground and open up large bodies of commercial ore when completed.

Francis A. Hancock

Francis A. Hancock, E. M.
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

PAY ROLL DISTRIBUTION

		Charge item Key-Durand DMA Contract # I-DMA-E30
Mine Development, Lower Wasa No. 3 Level		
Driving Crosscut No. 3 East 49 ft. @$10.00 per ft. — Contract	$ 490.00	No. 2b
Driving Crosscut No. 1 West 63 ft. @$10.00 per ft. — Contract	630.00	No. 2b
Driving Short X Cuts in ore along South drift 12 ft. @$12.00 per ft. — Contract	144.00	No. 2b
Mine Haulage: Care of Horse, Clean Tracks and Ditch, level dump, etc.	64.49	
Air Compressor & Power Unit Operation & Maintenance, Power unit for Mine ventilation	100.35	
Sharpening Tools, Picks and Drills & Drill repairs, etc.	48.68	
Roads: Grading & Maintenance	30.23	
Clearing Portals Wasa Nos. 1 & 2 Tunnels, Grading & Removal of old timbers and draining	47.59	
Clearing Mill Site (Cutting & logging off timber and grading)	293.62	
Shift Bossing	49.80	
Indirect Costs:		
General Supervision	174.98	
Engineering: Surveying, Maps, etc.	138.04	
Office Work	166.67	
Transportation: Hauling Supplies, trips to mine, etc.	75.00	
General Camp Maintenance: Watchman, cutting wood, care of buildings, etc.	53.92	
Administration: Trips to Missoula Office, etc.	66.67	
Geological Survey of Mine:		
Geologist Assistant, Trenching, etc.	994.36	
Boarding House:		
Labor Cooking	216.00	
Total	$3784.40	

Certified Correct:
Francis A. Hancock
Mining Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

SETTLEMENT SHEET

Mine Development Contract Month June, 1952

Charge Item No. 2b, Key-Durand DMA Contract:

To driving No. 3 Crosscut East 49 feet @ $10. per ft.	$490.00
To driving No. 1 Crosscut West 63 feet @ $10. per ft.	630.00
To driving Crosscuts East & West on ore in South Drift 12 feet @ $12. per ft.	144.00
Total--124 Ft.	$1264.00

Paid Contractors as per June, 1952 Payroll:

Charles F. Turner	5½ days work @ $26.14	$ 143.77	
	13½ days work @ $23.33 1/3	315.00	
	1½ days work @ $22.153	33.23	$ 492.00
William L. Echols	9½ days work @ $26.14	$ 248.34	
	13 days work @ $23.33 1/3	303.34	
	1½ days work @ $22.154	33.23	$ 584.91
Ben H. Gilman	4 days work @ $24.47	$ 97.88	
	½ days work @ $23.33 1/3	11.66	
	2 days work @ $22.153	44.31	$ 153.85
Floyd L. Henderson	1½ days work @ $22.153	$ 33.24	$ 33.24
	Total		$1264.00

Certified Correct:
Francis A. Hancock
Engineer in Charge

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

ACCOUNTS PAYABLE & DISTRIBUTION FOR MONTH OF JUNE, 1952

Accounts Payable:

Miller Machinery Company	$ 889.00
Miller Machinery Company	102.75
Roy W. Key, M. D.	880.00
Roy W. Key, M. D.	3.40
Western Rock Bit Manufacturing Company	20.40
Montana Laboratory Company	3.75
Farmers Union Oil Company	134.10
The Texas Company	60.81
Francis A. Hancock, E. M.	23.31
Davis Texaco Service	6.60
Marshall-Wells Stores	1.60
Fischer's Lumber Yard	302.35
John R. Daily, Inc.	110.19
Hall Meat Market & Grocery	118.17
Fagan's Cash Grocery	21.00
Industrial Accident Board	151.19
	$2828.62

Distribution:

Mining Equipment Rentals	$1049.00
Mining Supplies	382.65
Mine Haulage, Horse Feed, etc.	76.01
Air Compressor & Power Unit Plant Operation & Maintenance	130.71
Small Tools & Equipment	3.75
Roads: Grading & Maintenance	67.46
Clearing Portals Wasa Nos. 1 & 2 Tunnels	101.19
Clearing Mill Building Site	338.40
Transportation: Haul Supplies, Trips to Mine, etc.	36.67
Geological Survey of Mine	195.22
Engineering Surveying, Supplies, etc.	8.75
Assaying	3.75
Office Supplies; Postage, etc.	.81
Telephone & Telegraph	15.75
Mining Property Account	2.00
Payroll Taxes	151.19
Boarding House Equipment	2.00
Boarding House Supplies	242.61
Commissary Account	20.70
Total	$2828.62

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

STATEMENT

MINING EQUIPMENT RENTAL, MONTH June, 1952

Miller Machinery Company, Missoula, Montana	
1 - 315 Cu. ft. Worthington Portable Diesel Air Compressor	$ 414.00
1 - Simco 12B Mine Car Loader	250.00
1 - Diesel-Electric Generator Set, 20 K.W., 3 Phase, 220-440 volts	225.00
Roy W. Kay, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-Up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Geppus TM-6 Ventilating Fan and Vent Tubing	30.00
1 - I.R. DA-35 Drifter Drill	30.00
1 - I.R. R-48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (90 hours @ $8.00)	720.00
	$1769.00

DISTRIBUTION:

Mining Equipment Rental, Month June		$1049.00
D-6 Caterpillar Tractor & Dozer Time:		
Mine Haulage, Leveling dump	$ 64.00	
Trenching for Geologist	176.00	
Clearing Portals Nos. 1&2 Wasa Tunnels	96.00	
Roads: Grading & Maintenance	64.00	
Clearing Mill Site	320.00	
Total Dozer time		720.00
Total		$1769.00

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC PROJECT No. DMA-946X - I-DMA-E30

INVENTORY Mining supplies on hand July 1st, 1952 PAGE 1

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F. A. H. DEPARTMENT Mine EXTENDED BY F. A. H.

ENTERED BY F. A. H. LOCATION Key-Durand Mine EXAMINED BY F. A. H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	850 lbs.	(17 Boxes) 1-1/8" x 8" Du Pont Powder		.262	5 lb.	22 31 [illegible]
	2800 ft.	Triple Tape Water Fuse		13.45	per thous.	37 66
	500	6 x Blasting Caps (5 boxes)		2.16	100 box	10 80
	50 lbs.	Miners Carbide		.10½	lb.	5.25
	60 lbs.	Miners Carbide 6 - 10 lb. cans		.21	lb.	12.60
	250 gal.	Diesel Fuel		.17.3	gal.	43.25
	20 gal.	White Gasoline		.26	gal.	5.20
	40 gal.	4"x6" - 3 ft. Mine Track Ties		.39	each	15.60
	900	Mine Wedges		.031	5 each	28.35
	2049 lbs.	25 lb. Mine Rails (used)		.068	lb.	139 [illegible]
	40 lbs.	3/8" x 3" Track Spikes		.17	lb.	6.80
	16 lbs.	½" x 2" Track Bolts		.20	lb.	3.20
	8 lbs.	½" x 2¼" Track Bolts		.178	4 lb.	1.43
	30 pairs	18" Track Fish Plates		.60	pair	18.00
	10 gals.	Texaco Alcaid Compressor Oil		.63	gal.	6.30
	15 gals.	Texaco EP-W Rock Drill Oil		.69	gal.	10.35
	50 gals.	Texaco Ursa S.D. Diesel Lube. Oil #30		1.126	gal.	56.30
	16 lbs.	Texaco Thuban No. 80 Lube.		.167	5 lb.	2.68
	20 lbs.	Texaco Regal Starfak Special Grease		.30	lb.	6.00
	5 lbs.	Texaco Marfak No. 0 Grease		.216	lb.	1.08
	5 lbs.	Texaco Marfak H.D. No. 2 Grease		.216	lb.	1.08
	3 gals.	Texaco Antifreeze		2.51	gal.	7.53
	2 cans	Qts. Outboard Motor Oil (Chain Saw)		.55	qt.	1.[illegible]
	2	#69-R48 Rifle Nuts for I.R. Stoper Drill		5.90	each	11.80
	2	#B168-R48 Assembly Rods for I.R. Stoper Drill		5.00	each	10.00
	2	#27-R48 Water Tubes for I.R. Stoper Drill		2.90	each	5.80
	1	2" Brass Gate Valve		17.00	each	17.00
	1	1½" Brass Gate Valve		12.00	each	12.00
		AMOUNT FORWARD				$699.61

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.
KEY-DURAND LEAD-ZINC PROJECT No. DMA-946X - I-DMA-E30

INVENTORY

Mining supplies on hand July 1, 1952

SHEET NO. 2 PRICED BY F. A. H.

CALLED BY F. A. H. DEPARTMENT Mine EXTENDED BY F. A. H.

ENTERED BY F. A. H. LOCATION Key-Durand Mine EXAMINED BY F. A. H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
		Brought forward				699.01
	3	Miners Axe Handles		1.15	each	3.45
	2	Miners Drift Pick Handles		1.25	each	2.50
	1	Miners Sledge Hammer Handle		1.20	each	1.20
	248 ft.	3 Wire #8 Tirex Power Cable (used)		.25	ft.	62.00
	1	Miners Powder Bag		6.25	each	6.25
	103 lbs.	Oats (Horse feed)		.0375	lb.	3.86
	850 lbs.	Hay (Horse feed) baled		.025	lb.	21.25
	1 lot.	Small bolts & washers				1.50
	1 lot.	Assorted Pipe fittings & valves $\frac{1}{2}$" - $2\frac{1}{2}$"				55.00
	200 ft.	$1\frac{1}{2}$" Std. Galv. Pipe for Air Lines (used)		.35		70.00
	300 Bd. ft.	Com. rough lumber		55.00	per ft.	16.50
		Total				$943.12
		AMOUNT FORWARD				

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

MINING SUPPLIES USED DURING MONTH JUNE, 1952

Blasting Powder:		
On hand June 1	750 lbs.	$163.13
Purchased during month	1000 lbs.	262.50
Total	1750 lbs.	$425.63
On hand July 1	850 lbs.	223.12
Used month of June	900 lbs.	$202.51
Fuse: (Triple Tape Water)		
On hand June 1	5000 ft.	$ 67.25
Purchased during month	none	
Total	5000 ft.	$ 67.25
On hand July 1	2800 ft.	37.66
Used month of June	2200 ft.	$ 29.59
Blasting Caps: (6X)		
On hand June 1	850 caps	$ 18.36
Purchased during month	none	
Total	850 caps	$ 18.36
On hand July 1	500 caps	10.80
Used month of June	350 caps	$ 7.56
Miners Carbide:		
On hand June 1	110 lbs.	$ 11.55
On hand June 1	60 lbs.	12.60
Purchased during month	none	
Total	170 lbs.	$ 24.15
On hand July 1	110 lbs.	17.85
Used month of June	60 lbs.	$ 6.30
Mine Wedges:		
On hand July 1	900 wedges	$ 28.35
Mine Track Ties: 4" x 6" - 3 ft.		
On hand June 1	60 ties	$ 23.40
Purchased during month	none	
Total	60 ties	$ 23.40
On hand July 1	40 ties	15.60
Used month of June	20 ties	$ 7.80
Mine Rails, 25 lb. (Used):		
On hand June 1	4149 lbs.	$282.13
Purchased during month	none	
Total	4149 lbs.	$282.13
On hand July 1	2049 lbs.	139.33
Used month of June	2100 lbs.	$142.80

COPY

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

PROJECT No. DMA-946X
I-DMA-E30

Key-Durand Lead-Zinc
Mining Supplies Used During Month June, 1952 (continued)

Horse Feed, Oats:		
On hand June 1	220 lbs.	$ 8.25
Purchased during month	178 lbs.	6.85
Total	398 lbs.	$ 15.10
On hand July 1	103 lbs.	3.86
Used month of June	295 lbs.	$ 11.24
Horse Feed, Hay:		
On hand June 1	1530 lbs.	$ 38.25
Purchased during month	none	
Total	1530 lbs.	$ 38.25
On hand July 1	850 lbs.	21.25
Used month of June	680 lbs.	$ 17.00
Diesel Fuel:		
On hand June 1	245 gal.	$ 42.38
Purchased during month	605 gal.	104.68
Total	850 gal.	$147.06
On hand July 1	250 gal.	43.25
Used month of June	600 gal.	$103.81
Gasoline, White (Used for starting compressor & power unit and Tractor, etc.):		
On hand June 1	30 gal.	$ 7.80
Purchased during month	none	
Total	30 gal.	$ 7.80
On hand July 1	20 gal.	5.20
Used month of June	10 gal.	$ 2.60

COPY

P.O. Box 492
Albany, Oregon
July 28, 1952

Memorandum to: Western Montana Exploration & Development Co.
412 Western Bank Building, Missoula, Montana

From: W. Eulon Lee, Fiscal Officer,
U. S. Bureau of Mines, Albany, Oregon

Subject: June voucher for contract Idaho-30

We are passing your June monthly report and voucher in the amount of $2,444.07, as it has been approved for a total of $1,930.15.

We have deleted items 3 and 7 as follows:

Item 3	Drilling & Misc.	$123.90
Item 7	Misc. Other	457.17

We have not been able to verify the above amounts from the distribution of expenses on your distribution sheet. These items may be reclaimed on a supplemental report and voucher form. Please substantiate this supplemental report with a detailed itemization showing how each of these amounts was computed.

To U. S. Bureau of Mines,
1201 N. Division St.,
Spokane, Washington

M. E. Volin, Member, DMEA Field Team, Reg. II June 13, 1952

Glenn C. Reed, Mining Engineer, Bureau of Mines

Routine inspection, Contract Idm-230, 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

ndard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U. S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. .....

Bu. Vou. No. DMA-269

U. S. Interior, Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Oregon 6/24/52
(Give place and date)

THE UNITED STATES, Dr., Payee's Account No. Idm-E 30

To Key - Durand,
(Payee)

412 Western Bank Bldg., Missoula, Montana
(Address) (City) (State)

PAID BY

(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms net	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	May 1952	As per attached certified form MF-104 dated June 9, 1952				2,523 44	
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					
Shipped from	to	Weight	Government B/L No.		Total	2,523 44	

(Payee must NOT use this space)

Differences .....

Account verified; correct for 2,523 44

(Signature or initials) .....

Contract No. Idm-E 30 Date Req. No. Date Invoice Rec'd.

2,523.44

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	2,523.44	2,523.44

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19....., for $..... } on Treasurer of the United States in favor of payee named above.
{ Cash, $....., on ....., 19.....

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.).

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22000a-2

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No.
Idm-E 30

Name of Operator Roy-Burns
Docket No. DMA 946
Total Contract Amount $ 66,800.00
Government Participation: 50 % Amount, $ 5658.98
Distribution of Expenditures for Month of May, 1952

2523.44

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 30 1951

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

CERTIFICATION

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

Roy-Burns
(Name of Company)
412 Western Bank Bldg.

By Roy W. Roy
(Signature of Authorized Official)

June 9, 1952
(Date)

Senior Partner
(Title)

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

16--64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities		1454.47	1454.47			
(b) Buildings						
Bldg. Fence 10.00 207.97	277.75	604.69	882.44	421.84		
(c) Fixtures		78.80	78.80			
2. Operating Equipment:						
(a) Purchased[1]		1484.45	1484.45			
(b) Rented[2]	889.00					
		11307.24	12256.24		14435.24	
(c) Furnished by operator	160.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.65	11.65			
(c) Installations						

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3]	3307.76	26566.71	29874.47	2,588.39		
5. Supervision	187.50	687.70	875.20			
6. Supplies						
(a) Timber		77.00	77.00			
(b) Explosives	102.30	2396.38	2498.68			
(c) Repair Parts	2.50	451.10	453.60	5.35		
(d) Other	191.37	3989.38	4181.35	381.54	4,027.89	
7. Power	147.50	1180.19	1327.69	—0—	1,125.94	
8. Transportation	70.30	1287.40	1357.70	23.21	1,209.14	
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation	287.76	788.01	1075.77			
Payroll taxes		948.34	948.34			
10. Contract Work						
11. Other (specify) Misc.	34.03			—0—		
Clean source & trenches for Lab Geological Inspection		247.35	281.97		183.33	
Fl. D	400.01			—0—		
Total		1900.00	1900.00			
	6688.08	55174.74	60862.72			
Deletions						
Adjusted totals						
Totals previously reported	55174.74					
Totals to date	60862.72			5046.89	55,174.74	60,221.63

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by [signature]
Entered by
Approved by Glenn A. Reed
Amount approved for payment $2523.44
Remarks

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF May 1952

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting										
Crosscutting	2924.21	1049.00	296.77	539.59	4809.57	Ft	126.5			
Raising										
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation	26.96			400.61	427.57					
Geology and geophysics										
Trenching										
Sampling and assaying										
Roads and trails										
Test pits										
Other (specify) Boarding House	144.09			277.75	421.84	$	421.84	-0-	421.84	2500.00
Totals	3095.26	1049.00	296.77	1217.95	5658.98					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

	3330.80
Delete Meat House	100.45
Clearing Mill Site	135.09
	3095.26

DMA-9461
I-DMA-E30

NARRATIVE FOR MAY 1952

This month brought better weather conditions and surface snow was well gone by middle of the month, although some snow remained in deeper trenches (USBM Project 15-197) until latter part of the month.

Our crosscut No. 3 East was advanced 126 feet some of which was made through very hard quartzite formation. At approximately 181 feet east of starting point in South drift the crosscut intercepted a fault zone of similar character as in crosscuts 1 and 2 East. See progress map. First part of this fault zone was fairly well mineralized but without as much ground water as in XEC 1 and 2. However, XEC 3 has now, by this writing (June 9, 1952), been advanced some 30 feet since first of the month and has entered a heavily mineralized area with the usual amount of ground water. Ore in face now is a true zinc sulphide and appears to be the best ore we have encountered so far in the development program. Engineer Hancock will cut representative samples soon for assay.

On surface such work was accomplished as leveling off site for new cook and boarding house construction and cleaning out old USBM trenches for further study by consulting geologist toward an effort to correlate findings underground with areal geology previously discussed and reported by Mr. C. C. Popoff in his report on U. S. Bureau of Mines Project 15-197.

Ray W. Ly

COPY

KEY-DURAND LEAD-ZINC PROJECT No. DMA-946X I-DMA-E30

INVENTORY Mining Supplies on Hand June 1, 1952 PAGE 1

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	750 lbs.	(15 boxes) 1-1/8"x8" Du Pont Blasting Powder		.2175	lb.	163.13
	5000 ft.	Triple Tape Water Fuse		13.45	per thous.	67.25
	850	(8½ boxes)#6X Blasting Caps		2.16	Bx.	18.36
	170 lbs.	Miners Carbide		.10½	lb.	17.85
	245 gals.	Diesel Fuel		.173	Gal.	42.38
	30 gals.	White Gasoline		.26	gal.	7.80
	60 gals.	4"x6"-3ft. Mine Track Ties		.39	ea.	23.40
	900 gals.	Mine Wedges		.0315	ea.	28.35
	4149 lbs.	25 lb. Mine Rails (used)		.068	lb.	282.13
	60 lbs	3/8"x3" Track Spikes		.17	lb.	10.20
	16 lbs.	½"x2" Track Bolts		.20	lb.	3.20
	12 lbs.	½"x2¼" Track Bolts		.1784	lb.	2.14
	44 prs.	18" Track Fish Plates		.60	pr.	26.40
	18 gals.	Texaco Alcaid Compressor Oil		.63	gal.	11.34
	20 gals.	Texaco EP-W Rock Drill Oil		.69	gal.	13.80
	12 gals.	Texaco Ursa S.D. Diesel Lube #30 Oil		1.126	gal.	13.51
	20 lbs.	Texaco Thuban No. 80 Lube		.1675	lb.	3.35
	24 lbs.	Texaco Regal Starfak Spec. Grease		.30	lb.	7.20
	5 lbs.	Texaco Marfak No. 0 Grease		.216	lb.	1.08
	5 lbs.	Texaco Marfak H. D. No. 2 Grease		.216	lb.	1.08
	3 gals	Texaco Antifreeze		2.51	Gal.	7.53
	2	#69-R48 Rifle nuts for I.R.R48 Stoper drill		5.90	ea.	11.80
	2	#B168-R48 Assembly rods for I.R.R48 Stoper Drill		5.00	ea.	10.00
	2	#27-R48 Water Tubes for I.R.R48 Stoper drill		2.90	ea.	5.80
	1	2" Brass Gate Valve		17.00	ea.	17.00
	1	1½" Brass Gate Valve		12.00	ea.	12.00
	4	Miners Axe Handles		1.15	ea.	4.60
	2	Miners Drift Pick Handles		1.25	ea.	2.50
		AMOUNT FORWARD				$815.13

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

INVENTORY Mining Supplies on Hand June 1, 1952 PAGE 2

SHEET NO. 2 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT MINE EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
		Brought Forward				$ 815.18
	2	Sledge Hammer Handles		1.20	ea.	2.40
	1	DuPont No. 2 Cap Crimper		1.50	ea.	1.50
	248 ft.	3 Wire #8 Tirex Power Cable (used)		.25	ft.	62.00
	1	Miners Powder Bag		6.25	ea.	6.25
	220 lbs.	Oats		.0375	lb.	8.25
	1530 lbs.	Baled Hay		.025	lb.	38.25
	1 Lot	Small Bolts and Washers				2.00
	1 Lot	Assorted Pipe Fittings & Valves ½" to 2½"				76.50
	60 ft.	1" Std. Galv. Pipe for water lines		.29	ft.	17.40
	200 ft.	1½" Std. Galv. Pipe for air lines (used)		.35	ft	70.00
	300 Bd. ft.	Assorted Com. Rought Lumber		55.00	per thous.	16.50
		Total				$1116.23
		AMOUNT FORWARD				

FORM 604-72 W U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

PROJECT No. DMA-946X
I-DMA-E-30

KEY-DURAND LEAD-ZINC

PAY ROLL DISTRIBUTION

Mine Development, Lower Wasa No. 3 Level		Charge item Key-Durand DMA Contract # I-DMA-E-30
Driving Crosscut No. 3 East 126.5 ft. @ $10.00 and $12.00 per ft.--Contract	1285.00	No. 2b
Timbering and Repairs in main adit tunnel, Wasa No. 3 Level--Day work	26.96	No. 1
Installing and Repairs Air & Water lines in mine Day work	26.96	
Mine Haulage: Are & Shoeing horse, clean tracks and Ditch, Laying switch, level dump	137.64	
Air Compressor & Power Unit Operation & Maintenance	64.03	
Sharpening Tools, Drills & Drill Repairs, etc.	70.42	
Cleaning Out Surface Cuts & Trenches for Geological Study	175.28	
Roads: Maintenance, Grading etc., cutting out fallen timber	109.39	
Camp Buildings: Building New Screened Meat House (8'x8'), for Storage of meat & veg.	100.45	
Camp Buildings: Clearing site for new Boarding House cutting old timber and grading	144.09	No. 6, Amendment #4 Exhibit "F"
Clearing Mill Building Site-Cutting off timber & dozing grade for track from mine	135.09	
Indirect Costs:		
Shift Bossing	52.86	
General Supervision	187.50	
Engineering: Surveying, Maps, Sampling, Etc.	142.22	
Office work	183.35	
Transportation: Hauling supplies, trips to mine, etc.	91.65	
General Camp Maintenance: Spring clean up, Watchman, cutting wood, care of buildings	99.91	
Administration: Trips to Missoula Office, etc.	50.00	
Boarding House:		
Labor Cooking	248.00	
Total	$3330.80	

Certified Correct:
Francis A. Hancock
Mining Engineer in Charge

COPY

PROJECT No. DMA-946 X
I-LMA-E-30

KEY-DURAND LEAD-ZINC

SETTLEMENT SHEET

Mine Development Contract Month May, 1952

Charge Item No. 2b, Key-Durand LMA Contract:

To driving No. 3 Crosscut East 10 ft. @ $12. per ft.	$ 120.00
To driving No. 3 Crosscut East 116.5 ft. @ $10. per ft.	1165.00
Total--126.5 Ft	$1285.00

Paid Contractors as per May, 1952 Payroll:

Charles F. Turner	28 days work @ $22.9464	$ 642.50
William L. Echols	28 days work @ $22.9464	642.50
Total		$1285.00

Certified Correct:
Francis A. Hancock
Engineer in Charge

COPY

PROJECT No. DMA-946X
I-DMA-E30

KEY-DUPAND LEAD-ZINC

STATEMENT

MINING EQUIPMENT RENTAL, MONTH May, 1952

Miller Machinery Company, Missoula, Montana	
1 - 315 Cu. ft. Worthington Portable Diesel Air Compressor	$414.00
1 - Eimco 12B Mine Car Loader	250.00
1 - Diesel-Electric Generator Set, 20 K.W., 3 phase, 220-440 volts	225.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-Up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Coppus TM-6 Ventilating Fan and Vent Tubing	30.00
1 - I.R. DA-35 Drifter Drill	30.00
1 - I.R.R-48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (132 hours @ $8.00)	1056.00
	$2105.00

DISTRIBUTION:

Mining Equipment Renatl, Month May		$1049.00
D-6 Caterpillar Tractor & Dozer Time:		
Roads: Maintenance & Grading	$224.00	
Clearing Building Site for new boarding house	256.00	
Cleaning out surface cuts and trenches	384.00	
Clearing Mill Building Site and Grade for track for mine	192.00	
Total dozer time		1056.00
Total		$2105.00

COPY

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

ACCOUNTS PAYABLE & DISTRIBUTION for month of MAY, 1952

COPY

Accounts Payable:

Miller Machinery Company	$ 889.00
Miller Machinery Company	125.67
Roy W. Key, M.D.	1216.00
Roy W. Key, M.D.	21.57
Roy W. Key, M.D.	36.20
Davis Texaco Service	11.15
Farmers' Union Oil Company	152.82
R.L. Lucier, Sawmill	19.20
Raymond H. Heady-Sawmill	6.49
W.P. Allen Ranch	44.63
Francis A. Hancock	14.96
Missoula Mercantile Company	10.80
Fischer's Lumber Yard	83.65
Marshall-Wells Stores	5.28
Hall Meat Market & Grocery	134.93
Fagan's Cash Grocery	28.43
John R. Daily, Inc.	22.55
Montana Industrial Accident Board	287.76
Cliff Beck Motors	2.85
	$3113.94

Distribution:

Mining Equipment Rentals	$1049.00
Mining Supplies	186.77
Mine Haulage, Horse feed, etc.	54.68
Air Compressor & Power Unit Plant Operation	92.82
Small tools & Equipment	7.70
Transportation, Hauling Supplies, Trips to mine, etc.	70.30
Roads Maintenance and Grading	233.86
Cleaning out Surface cuts and Tranches	400.61
Clearing Camp Building Site for New Boarding House	287.07
Clearing Site for Mill Building & Track from mine	200.31
Commissary Account	24.30
Engineering Supplies & Equipment Sampling	23.21
Office Supplies	.75
Telephone & Telegraph	10.07
Camp Bldg's New Screened Meat House Construction	27.04
Payroll Taxes	287.76
Boarding House Equipment	10.68
Boarding House Supplies	167.01
TOTAL	$3113.94

PROJECT No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

MINING SUPPLIES USED DURING MONTH MAY, 1952

Blasting Powder:		
On hand May 1	2050 lbs.	$445.88
Purchased during month	None	
Total	2050 lbs.	$445.88
On hand June 1	750 lbs.	163.13
Used month of May	1300 lbs.	$282.75
Fuse: (Triple Tape Water)		
On hand May 1	2500 ft.	$ 33.63
Purchased during month	6000 ft.	80.70
Total	8500 ft.	$114.33
On hand June 1	5000 ft.	67.25
Used Month of May	3500 ft.	$ 47.08
Blasting Caps: (6X)		
On hand May 1	400	$ 8.64
Purchased during month	1000	21.60
Total	1400	$ 30.24
On hand June 1	850	18.36
Used month of May	550	$ 11.88
Miners Carbide:		
On hand May 1	90 lbs.	$ 9.45
Purchased during month	160 lbs.	16.80
Total	250 lbs.	$ 26.25
On hand June 1	170 lbs.	17.85
Used month of May	80 lbs.	$ 8.40
Mine Wedges:		
On hand May 1	984	$ 31.00
Purchased during month	none	
Total	984	$ 31.00
On hand June 1	900	28.35
Used Month of May	84	$ 2.65
Mine Track Ties: 4" x 6" - 3 ft.		
On hand May 1	32	$ 12.48
Purchased during month	60	23.40
Total	92	$ 35.88
On hand June 1	60	23.40
Used month of May	32	$ 12.48
Mine Rails, 25 lbs.		
On hand May 1	6298 lbs.	$464.06
Purchased during month	none	
Total	6298 lbs.	$464.06 new and used
On hand June 1	4149 lbs.	282.13 used
Used month of May	2149 lbs.	$181.93

COPY

PROJECT No. DMA-946X
I-DMA-E30

Key-Durend Lead-Zinc
Mining Supplies Used During Month May, 1952 (continued)

Horse Feed, Oats:		
On hand May 1	220 lbs. @ .03½	$ 7.70
Purchased during month	270 lbs. @ .03-3/4	10.10
Total	490 lbs.	$ 17.80
On hand June 1	220 lbs.	8.25
Used month May	270 lbs.	$ 9.55
Horse Feed, Hay:		
On hand May 1	none	
Purchased during month	1785 lbs.	$ 44.63
Total	1785	$ 44.63
On hand June 1	1530 lbs.	38.25
Used month May	255 lbs.	$ 6.38
Diesel Fuel:		
On hand May 1	130 gals.	$ 22.49
Purchased during month	755 gals.	130.62
Total	885 gals.	$153.11
On hand June 1	245 gals.	42.38
Used month of May	640 gals.	$110.73
Gasoline, White: (Used for starting compressor & power unit and Tractor, etc.)		
On hand May 1	25 gals.	$ 6.50
Purchased during month	30 gals.	7.80
Total	55 gals.	$ 14.30
On hand June 1	30 gals.	$ 7.80
Used month of May	25 gals.	$ 6.50

Note: of the above 25 gals. gasoline used during May, 10 gals. were sold to an employee and charged to commissary account and deducted from wages on May payroll.

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No. 30
Idm-E

Name of Operator Roy-Burnd
Docket No. DMA 960
Total Contract Amount $ 60,000.00
Government Participation: 60 % Amount, $ 6701.00
Distribution of Expenditures for Month of April, 1952

Work

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 20 1952

CERTIFICATION

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

Roy-Burnd
412 Cook Bldg., Milwaukee
(Name of Company)

By Roy W. Kay
(Signature of Authorized Official)

May 10, 1952
(Date)

Senior Partner
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities		1454.47	1454.47			
(b) Buildings		696.00	696.00			
(c) Fixtures		70.00	70.00			
2. Operating Equipment:						
(a) Purchased[1]		1454.48	1454.48			
(b) Rented[2]	330.00					
		10999.20	11507.20			
(c) Furnished by operator	100.00			288.00		
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.00	11.00			
(c) Installations						

16—64068-3.

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3] ✓	2300.64	24366.07	26666.71			
5. Supervision ✓	214.30	173.40	387.70			
6. Supplies						
(a) Timber		77.00	77.00			
(b) Explosives ✓	435.00	1861.38	2296.38			
(c) Repair Parts ✓	110.60	340.50	451.10			
(d) Other ✗	434.65	3554.73	3989.38	473.16		
7. Power ✗	54.25	1125.94	1180.19	0		
8. Transportation ✗	48.26	1209.14	1257.40	0		
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation		788.01	788.01			
Payroll taxes		942.34	942.34			
10. Contract Work						
11. Other (specify) ✓	50.40	197.87	247.38			
Surveying ✗	66.00			0		
[illegible]		1900.00	1900.00			
Total	4761.06	50413.68	55174.74			
Deletions						
Adjusted totals						
Totals previously reported	50413.68					
Totals to date	55174.74			4761.06	50,413.68	55,174.74

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by W. K. Lee

Entered by

Approved by Glenn A. Reed

Amount approved for payment $2380.53

Remarks

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF April 1952

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting						Ft		579	579	600
Crosscutting	2250.47	993.79	928.60	205.57	4387.43	Ft	72	315	387	600
Raising Timbering 2c	255.47	55.21	51.55	11.40	373.63	Ft	4	79.4	83.4	150
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation										
Geology and geophysics										
Trenching										
Sampling and assaying										
Roads and trails										
Test pits										
Other (specify)										
Totals	2514.94	1049.00	980.15	216.97	4761.06					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

DAA-946X
I-DA-530

NARRATIVE FOR April, 1952

Progress for this month was somewhat low when considered on a strickly footage basis which was due to very hard formation encountered in Crosscut No. 3 east and to certain other measures which had to be carried out during this month, namely side swiping to start XXC3 and XXC1 and the installation of ventilating fan and several hundred feet of fan bag-16" and 12" in size. It was also necessary to replace several sets of timber in South drift and to crib up over 2 long sets in Wasa No. 3 or Lower Tunnel, the latter due to sloughing from increased flow of ground water at this season of the year (Spring thaw).

The Wasa Tunnel, South drift and all crosscuts are now in good condition and appear in a more efficient state. Present contract miners are the best work men we have employed so far on this project.

Roy W. Ley
Roy W. Ley

COPY

INVENTORY [illegible] PAGE 1

SHEET NO. 1 PRICED BY [illegible]

CALLED BY [illegible] DEPARTMENT [illegible] EXTENDED BY [illegible]

ENTERED BY [illegible] LOCATION [illegible] EXAMINED BY [illegible]

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
	5000 lbs.	(41 bxc.) 1-1/8 x 8' [illegible] Roofing Nailer		.0725	lb.	[illegible]
	2000 lbs.	[illegible]		13.45	[illegible]	[illegible]
	600	(4 bxc.) [illegible]		2.16	bx.	[illegible]
	25 lbs.	[illegible]		.121	lb.	3.40
	160 gal.	[illegible]		.172	gal.	[illegible]
	25 gals.	[illegible]		.25	gal.	6.50
	30	[illegible]		.50	ea.	15.00
	224	[illegible]		.0[illegible]	ea.	[illegible]
	2000 lbs.	25 lb. [illegible] (new)		.085	lb.	170.00
	4800 lbs.	25 lb. [illegible] (used)		.065	lb.	312.00
	100 lbs.	3/0 [illegible]		.17	lb.	17.00
	10 lbs.	[illegible]		.50	lb.	5.00
	10 lbs.	[illegible]		.17[illegible]	lb.	1.85
	60 prs.	[illegible]		.50	pr.	30.00
	33 gals.	[illegible]		.65	gal.	18.00
	26 gals.	[illegible]		.65	gal.	16.90
	26 gals.	[illegible]		.[illegible]	lb.	19.87
	38 lbs.	[illegible] No. 20 [illegible]		.107[illegible]	lb.	4.19
	30 lbs.	[illegible]		.30	lb.	9.00
	6 lbs.	[illegible] No. 8 [illegible]		.216	lb.	1.30
	6 lbs.	[illegible] No. 8 [illegible]		.216	lb.	1.30
	3 gals.	[illegible]		2.51	gal.	7.53
	2	[illegible]		5.50	ea.	11.00
	4	[illegible]		2.15	ea.	8.60
	2	[illegible]		5.00	ea.	10.00
	3	[illegible]		2.90	ea.	8.70
	1	8" [illegible] Gate Valve				17.00
	1	12" [illegible] Gate Valve				10.00
		AMOUNT FORWARD				[illegible]

FORM 604-72 U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

INVENTORY Mining Supplies on hand May 1, 1982 PAGE 2

SHEET NO. 2 PRICED BY [illegible]

CALLED BY [illegible] DEPARTMENT Mine EXTENDED BY [illegible]

ENTERED BY [illegible] LOCATION Rey-Durand Mine EXAMINED BY [illegible]

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
		Brought Forward				1249 33
	5	Miners Axe Handles		1.18	ea.	5 78
	1	Drift Pick Handles (Miners)		1.83	ea.	1.83
	8	4 lb. Miners Axes		8.10	ea.	10 80
	1	Du Pont no. 2 Sq Crimper		1.00	ea.	1 00
	240 ft.	3 wire .8 Liner Cable-Rubber cover		.28	ft.	(used) 68.00
	1	Liner Powder Can		6.25	ea.	6 25
	310 lbs.	Oats		.03½	lb.	7 70
	1 lot	Small Bolts & Washers				8 25
	1 lot	Assorted Pipe Fittings ½" to 8"				61 50
	147 ft.	1" Standard Galv. Pipe for Mine cover		.29	ft.	42 63
	500 B.M.Ft.	Assorted Can Sawn Lumber (new)		55.00	per thous.	27.50
		Total				1477 89
		AMOUNT FORWARD				

FORM 604-72 WL U.S.A.

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS

Project No. DMA-946 X
I-DMA-530

KEY-DURAND LEAD-ZINC

PAY ROLL DISTRIBUTION

			Key-Durand DMA Contract Charge Item:
Mine Development, Lower Nasa No. 3 Level:			
Driving No. 3 Crosscut East-69 ft. @$10. & $12. per ft.	Contract	$730.00	No. 2b
Driving No. 1 Crosscut West-3 ft. @ $10. per ft.	Contract	30.00	No. 2b
Making Room (Drilling & Blasting) & Installing Vent Tubing in South Drift for ventilation	Day work	286.45	No. 2a
Cleaning out caved ground, timbering & repairing in main Adit tunnel Nasa No. 3 Level	Day work	171.87	No. 1
Installing New Drilling Water System in No. 2X cut East (old system went dry)	Day work	55.92	
Mine Haulage: Care of Horse, cleaning ditch & tracks, Level down dump, etc.		82.14	
Air Compressor & Power Unit Operation & Maintenance (Power unit for mine ventilation)		64.03	
Sharpening Tools, Drill Repairs & Changing Scoop on mine car Loader		60.66	
Setting up Tank for Diesel Fuel Supply (Including building frame foundation)		35.70	
Bulldozing snow from road to and cleaning out surface Trench No. 13 for surveying		16.00	
Roads: Maintenance, Snow and mud removal		32.00	
Mine Supplies: Taking up Mine Rails and hauling to mine from old tunnel at Phosphate Mine		45.07	
Moving Diamond Drill Rods & Cleaning & Greasing same to new Mine Shop Building (Removed Couplings)		40.44	
Indirect Costs:			
General Supervision		214.30	
Engineering, Surveying, Maps, Sampling, Etc.		60.31	
Office Work		184.83	
Transportation: Hauling Supplies, trips to mine, etc.		66.95	
General Camp Maintenance: Watchman, cutting wood, care of buildings, etc.		5[illegible].92	
Administration: Trips to Las Vegas Office, etc.		89.35	
Boarding House:			
Labor Cooking		208.00	
	Total	$2514.94	

COPY

Certified Correct:
Francis A. Hancock
Engineer in Charge

Project No. [illegible] -946 X
I-LLA-E30

KEY-LOU AND LOUL-[illegible]

Mining Supplies Used during Month April, 1952

Blasting Powder:		
On hand April 1	650 lbs.	$141.37
Purchased during month	2000 lbs.	435.00
Total	2650 lbs.	$576.38
On hand May 1	2050 lbs.	445.88
Used month April	600 lbs.	$130.50
Fuse (Tripe tape water) :		
On hand April 1	6000 ft.	$ 80.70
Purchased during month	none	
Total	6000 ft.	$ 80.70
On hand May 1	2500 ft.	33.63
Used month April	3500 ft.	$ 47.07
Blasting Caps : (6X)		
On hand April 1	900 caps	$ 19.44
Purchased during month	none	
Total	900 caps	$ 19.44
On hand May 1	400 caps	8.64
Used month April	500 caps	$ 10.80
Miners Carbide:		
On hand April 1	120 lbs.	$ 12.60
Purchased during month	none	
Total	120 lbs.	$ 12.60
On hand May 1	90 lbs.	9.45
Used month April	30 lbs.	$ 3.15
Mine Sledges:		
On hand April 1	1000	$ 31.50
Purchased during month	none	
Total	1000	$ 31.50
On hand May 1	984	31.00
Used month April	16	$ .50
Mine Track Ties: 4" x 6"-3 ft.		
On hand April 1	16	$ 6.24
From new lumber on hand	32	12.48
Total	48	$ 18.72
On hand May 1	32	6.24
Used month April	16	$ 12.48

COPY

Project No. LRA-846
I-DRA-R3C

Key-Durand Lead-Zinc
Mining Supplies Used during Month April, 1952 (continued):

Mine Rails, 25 lb:			
On hand April 1	2453 lbs.	new @ .085	$208.50
Purchased during month	4898 lbs.	used @ .068	294.06
Total	6751 lbs.		$502.56
On hand May 1	6298 lbs.	new & used	464.06
Used month April	453 lbs.	new	$ 38.50
Horse Feed, Oats:			
On hand April 1	150 lbs.		$ 5.25
Purchased during month	380 lbs.		13.30
Total	530 lbs.		$ 18.55
On hand May 1	220 lbs.		7.70
Used month April	310 lbs.		$ 10.85
Horse Feed, Hay:			
On hand April 1	800 lbs.		$ 14.00
Purchased during month	none		
Total	800 lbs.		$ 14.00
On hand May 1	none		
Used month April	800 lbs.		$ 14.00
Diesel Fuel:			
On hand April 1	520 Gals.		$ 89.96
Purchased during Month	none		
Total	520 Gals.		$ 89.96
On hand May 1	130 Gals.		22.49
Used month April	390 Gals.		$ 67.47
Gasoline, White (Used for Starting Compressor, Cat, & Power Unit):			
On hand April 1	10 Gals.		$ 2.60
Purchased during month	30 Gals.		7.80
Total	40 Gals.		$ 10.40
On hand May 1	25 Gals.		6.50
Used month April	15 Gals.		$ 3.90

COPY

Project No. DMA-946 X
I-DMA-R30

KEY-DURANT LEAD-ZINC

STATEMENT

MINING EQUIPMENT RENTAL, MONTH APRIL, 1952

Miller Machinery Company, Missoula, Montana	
1 - 315 Cu. Ft. Worthington Portable Diesel Air Compressor	$ 414.00
1 - Eimco 12-B Mine Car Loader	250.00
1 - Diesel-Electric Generator Set, 20 KW, 3 phase, 220-440 Volts.	225.00
Roy W. Fey, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-Up Truck	$ 50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Coppus TM-6 Ventilating Fan and Vent Tubing	30.00
1 - I.R.D.A-35 Drifter Drill	30.00
1 - I.R. I-48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (32 hours @ $8.00)	256.00
Total	$1305.00

Distribution D-6 Caterpillar Tractor and Dozer Time:

Roads: Maintenance--Snow & Mud Removal	$128.00
Grading and Leveling down mine dump (mine haulage)	32.00
Hauling Mine Rails from Phosphate Mine	32.00
Cleaning out snow from road to and Trench #13	64.00
Total	$256.00

COPY

Project No. DMA-946 X
I-LI A-F30

KEY-DURAND LEAD-ZINC

SETTLEMENT SHEET

MINE DEVELOPMENT CONTRACTS- Month April, 1952

Charge Item No. 2b, Key-Durand DMA Contract:

To starting No. 1 Crosscut West, (Side Swipe) 3 feet @ $10. per ft.	$ 30.00
To starting No. 3 Crosscut East, (3 side swipes) 9 feet @ $10. per ft.	90.00
To driving No. 3 Crosscut East 40 feet @ $10. per ft.	400.00
To driving No. 3 Crosscut East 20 feet @ $12. per ft.	240.00
Total for 72 feet Crosscuts	$760.00

Recap:

Item No. 2b to driving 3 ft. in No. 1 Crosscut West	$ 30.00
Item No. 2b to driving 69 ft. in No. 3 Crosscut East	730.00
Total	$760.00

Paid Contractors as per April, 1952, Payroll:

Jack A. Parks	1½ days work @ $17.15	$ 25.72
Willard Barrett	2 days work @ $17.14	34.28
Chas. F. Turner	15 days work @ $23.333	350.00
W. L. Nichols	15 days work @ $23.333	350.00
	Total	$760.00

Note:

20 feet of driving in No. 3 Crosscut East was paid for at $12.00 per foot due to the very hard rock encountered. This hard formation required almost double the length of time to drill the round; not only was it slow drilling, but more holes were required to break the ground.

In starting crosscuts from the drift it is necessary to widen the drift by side swipes to gain sufficient room to make the turn into the crosscut; also to have room for a switch in the track for the mine cars.

COPY

Project No. [illegible]A-946 X
I-[illegible]A-[illegible]30

KEY-LUCKY LEAD-ZINC

ACCOUNTS PAYABLE & DISTRIBUTION for MONTH APRIL, 1952

Miller Machinery Company	$889.00	
Miller Machinery Company	207.74	
Roy W. Key, M.D.	416.00	
International Mineral & Chemical Co.	214.90	
Jesse Abbott	62.00	
The Swender Blue Print Co.	22.95	
Montana Laboratory Co.	39.00	
Westmont Tractor & Equipment Co.	3.75	
Missoula Mercantile Company	13.21	
Fischer's Lumber Yard	479.90	
Francis A. Hancock, M.D.	20.01	
John K. Daily, Inc.	134.51	
Farmers Union Oil Company	21.75	
Ronald W. Davis (Texaco Service)	13.86	
Hall Meat Market & Grocery	119.37	
Marshall-Wells Stores	1.80	
Hagen's Cash Grocery	11.59	
	$ 2671.34	
Labor	2514.94	
	$ 5186.28	
Delete	128.00	
Delete	22.95	
Delete	247.82	
Delete	16.45	
	$4761.06	

Distribution:

Mining Equipment Rentals	$1049.00	
Mining Supplies	969.55	
Mine Haulage, Horse feed, etc., leveling Camp	46.45	
Air Compressor Plant Operation	7.80	
Small Tools and Equipment	10.60	
Opening Surface Trench @ 13 for Surveying	54.00	
Roads Snow & Mud Removal	128.00	Delete
Transportation, Hauling Supplies, etc.	48.26	
Assaying	39.00	
Office Supplies, Postage, etc.	.71	
Telephone and Telegraph	10.75	
Expense Production Contract Application	22.95	Delete
Boarding House Supplies	257.82	Delete
Commissary Account Supplies	16.45	

COPY

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No. Idm-E 30

Name of Operator Key-Durand
Docket No. DMA 946 X
Total Contract Amount $ 66500.00
Government Participation: 50 % Amount, $ 5654.68
Distribution of Expenditures for Month of March, 1952

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

CERTIFICATION

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

Key-Durand
(Name of Company)
413 Western Bank Bldg.
Missoula, Montana
April 12, 1952
(Date)

By Ray W. Key
(Signature of Authorized Official)

Senior Partner
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only		
				Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities	92.25	1362.22	1454.47			
(b) Buildings	61.12	543.57	604.69			
(c) Fixtures		73.80	73.80			
2. Operating Equipment:						
(a) Purchased[1]	200.00	(x) 1434.45	1434.45			
(b) Rented[2]	889.00					
		9145.24	10258.24			
(c) Furnished by operator	160.00					
	64.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.55	11.55			
(c) Installations						

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3]	2450.26	21915.81	24366.07			
5. Supervision	173.40		173.40			
6. Supplies						
(a) Timber		77.00	77.00			
(b) Explosives	102.30	1859.08	1961.38			
(c) Repair Parts	22.83	317.72	340.60			
(d) Other	886.59	2668.14	3554.73			
7. Power	220.28	905.66	1125.94			
8. Transportation	92.86	1116.28	1209.14			
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation	114.54	673.47	788.01			
Payroll Taxes	316.53	626.81	942.34			
10. Contract Work						
11. Other (specify)	8.67	124.20	132.87			
Exh. B.		1900.00	1900.00			
Total	5854.68					
Deletions	200.00	(x)				
Adjusted totals	5654.68	44759.00	50413.68			
Totals previously reported	44759.00					
Totals to date	50413.68					

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Glenn A. Reed
Amount approved for payment
Remarks

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF March, 1952

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	1517.46	677.08	615.40	458.00	3268.05	Ft.	73	506	579	800
Crosscutting	958.55	308.02	362.55	269.70	1899.70	Ft.	43	272	315	800
Raising Timbering (Sc)	147.65	37.10	33.73	25.10	243.58	Ft.	4	75.4	79.4	150
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation										
Geology and geophysics										
Trenching										
Sampling and assaying										
Roads and trails										
Test pits										
Other (specify) Bldg. & Recil.				153.37	153.37					
Totals	2623.66	1113.00	1011.77	906.25	5654.68					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

Key & Durand
DMA-946X
I-DMA-E30

NARRATIVE FOR MARCH 1952

Progress for March was fairly good despite 2 days lost on account of heavy wet Spring snow which caused trouble in keeping outside track clear enough for muck cars to reach dump track. Two sets of timbers had to be replaced in South drift on account of lagging giving away to slow sloughing of wall enough at one point to disarrange the standing timbers and caps.

The heavy Spring snows necessitated some road cleaning as well as snow removal from around camp and shop buildings by use of the D-6 tractor-dozer. Older residents of Hall, Montana and vicinity state that not in their memory has this ~~vicinity~~ area received so much snow as during past winter. The graded dirt road from Highway 10-A to mine started to break up last week in March due to thawing and at present writing we have much mud to contend with. The "breakup" of road was anticipated and for this reason supplies such as rail, pipe and Diesel fuel were purchased in a slightly higher quantity than usual in order to get these items into camp before the Spring thaw.

Of particular interest during the month was the interception of an entirely different type of fair zinc ore in face of South drift "under" Trench No. 13. Whether or not this is one part of the large vein seen on surface at Trench No. 13 has not been determined for sure, but Engineer Hancock feels it is the deepest or most westerly ore found in U. S. Bureau of Mines Diamond Drill Hole No 8A, (see progress map). In any event an easy turn was made in the drift to left or to East and this crosscut will either prove or disprove our ideas about the new ore.

Roy W. Key

Roy W. Key

COPY

Project No. DMA-946X
I-DMA-E-30

STATEMENT

Mining Equipment Rental, Month of March, 1952

Miller Machinery Company, Missoula, Montana	
1 - 315 Cu. Ft. Worthington Portable Diesel Air Compressor	$ 414.00
1 - Eimco 12-B Mine Car Loader	250.00
1 - Diesel-Electric Generator Set, 20 K.W., 3 phase, 220-440 Volts	225.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-Up Truck	50.00
3 - Mine Cars @ $10.00	30.00
1 - Coppus TM-6 Ventilating Fan and Fan Bag	30.00
1 - I.R. DA-35 Drifter Drill	30.00
1 - I.R. R-48 Stoper Drill	80.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (28 hrs. @ $8.00)	224.00
Total	$1273.00

Distribution D-6 Caterpillar Tractor and Dozer Time:		
Roads: Maintenance and snow Removal	10 hrs. @ $8.00	$80.00
Grading and leveling down mine dump	10 hrs. @ $8.00	80.00
Camp Maintenance: Snow Removal around camp and workings	8 hrs. @ $8.00	64.00
Total		$224.00

COPY

Project No. DMA-946X
I-DMA-F-30

KAY-DURAND LEASE-TERMS

SETTLEMENT SHEET

Mine Development Contracts, Month of March, 1952

Charge Item No. 2a, Kay-Durand, D.M.A. Contract:
To driving South Drift, Lower Base No. 3 Level, 73 feet @ $10.00 per ft. $ 730.00

Charge Item No. 2b, Kay-Durand, D. M. A. CONTRACT:
To driving No. 2 X Cut East from South Drift, 43 feet @ $10. per foot 430.00

Total for 116 feet driving $1160.00

Re-cap:

Item No. 2a, To driving 73 feet in south drift @ $10.00	$ 730.00
Item No. 2b, To driving 43 feet in No. 2X cut @ $10.00	430.00
Total	$1160.00

Paid Contractors as per March, 1952 Payroll:

Jack A. Parks, 25 days work @ $23.20	$ 580.00
Willard Barrett, 22-1/2 days work @ $23.20	522.00
Ben H. Gilman, 2-1/2 days work @ $23.20	58.00
Total	$1160.00

COPY

PROJECT No. DMA-946-X
I-DMA-E-30

KEY-DURAND LEAD-ZINC

PAY ROLL DISTRIBUTION

				Key-Durand DMA Contract Charge Item
Mine Development: Lower Wasa No. 3 Level				
Driving South Drift	73 feet @ $10.00 per foot	Contract	$730.00	No. 2a
Driving No. 2 X Cut East	43 feet @ $10.00 per foot	Contract	430.00	No. 2b
Driving No. 1 X Cut East	4 feet and timbering	Day Work	64.57	No. 2b
Timbering Mine Workings: Changing 2 sets in South Drift that crushed in....			104.55	No. 2c
Mine Haulage: Care of horse, clean tracks and ditch, level dump, snow and ice removal.....			103.03	
Air Compressor Plant: Maintenance and Operation			55.35	
Sharpening tools, Drill Repairs, etc.			67.65	
Mine Air and Water Lines, Installing larger air line and changing water lines.....			67.65	
Wiring new mine Shop and Mine for ventilating fan and lights			43.05	
Roads: Maintenance and snow Removal			20.00	
Indirect Costs:				
General Supervision			173.40	
Engineering: Surveying, Maps, etc.			100.75	
Office Work			188.73	
Transportation: Hauling Supplies, Trips to mine, etc.			88.72	
General Camp Maintenance: Watchman, cutting wood, buildings, snow removal.....			89.81	
Administration: Trips to Missoula Office, etc.			48.40	
Boarding House:				
Cooking Labor			248.00	
	Total		$2623.66	

Certified Correct:
Francis A. Hancock
Mining Engineer in Charge

COPY

PROJECT No. DMA-946X
I-DMA-E-30

KEY-DURAND LEAD-ZINC

Accounts Payable and Distribution for Month of March, 1952

Miller Machinery Company, Missoula, Montana	$ 889.00
Miller Machinery Company, Missoula, Montana	181.98
Roy W. Key, M.D., Missoula, Montana	384.00
Roy W. Key, M.D., Missoula, Montana	23.20
Roy W. Key, M.D., Missoula, Montana	5.00
Jesse Abbott, Missoula, Montana	350.00
Butte Machinery Company, Butte, Montana	358.00
Illinois Powder Manufacturing Co., Missoula, Montana	102.30
Farmers Union Oil Company, Hall, Montana	149.44
Archie Fraser (Hauling Rails & Pipe), Hall, Montana	20.00
John J. Renfrew, Drummond Electric Shop, Drummond, Montana	153.37
The Texas Company (antifreeze), Missoula, Montana	15.06
Fischer's Lumber Yard, Hall, Montana	244.75
Philipsburg Hardware Co., Philipsburg, Montana	.83
Donald W. Davis, Texaco Station, Missoula, Montana	3.50
Francis A. Hancock, (Postage), Hall, Montana	.67
Millers Dry Goods Store, Drummond, Montana	7.45
John R. Daily, Inc., Missoula, Montana	121.44
Mrs. Henry Kolbeck, Hall, Montana	4.50
Fagan's Cash Store, Drummond, Montana	44.24
Hall Meat Market & Grocery, Hall, Montana	63.73
Marshall-Wells Stores, Drummond, Montana	11.41
Montana Laboratory Co., Philipsburg, Montana	3.00
Industrial Accident Board, Helena, Montana	114.54
Collector of Internal Revenue, Social Security Tax (1st Qt.,1952)	113.05
Unemployment Compensation Commission of Montana (1st Qt., 1952)	203.48
	$3567.94
Labor	2623.66
	$6191.60
Delete	84.15
Delete	11.41
Delete	227.61
Delete	13.75
	$5854.68

Distribution:

Mining Equipment Rentals	$1049.00
Mining Supplies	963.17
Mining Equipment	200.00
Mine Ventilation Fan, Wiring, etc.	111.93
Small Tools & Equipment	9.90
Mine Haulage, horse feed, etc.	92.60
Air Compressor Plant, Maintenance & Operation	142.55
Carried Forward	$2569.15

PROJECT No. DMA-946X
I-DMA-E-30

Key-Durand Lead-Zinc
Accounts Payable and Distribution for Month of March, 1952

Distribution, Continued:

Brought Forward	$2569.15	
Transportation, Hauling Supplies, Trips to mine	92.86	
Roads Maintenance, Snow Removal	84.15	Delete
New Mine Shop Wiring	61.12	
Camp Maintenance and Snow Removal	68.15	
Engineering Supplies, Maps, etc.	5.00	
Office Supplies, Postage, etc.	.67	
Assaying Mine Samples	3.00	
Payroll Taxes	431.07	
Boarding House Equipment	11.41	Delete
Boarding House Supplies	227.61	Delete
Commissary Accounts Supplies	13.75	Delete
	$3567.94	
Less Deletions	336.92	
	$3231.02	

COPY

PROJECT No. DMA-946X
I-DMA-2-30

KEY-DURAND LEAD-ZINC

MINING SUPPLIES USED MONTH OF March, 1952

Blasting Powder:		
On hand March 1	1700 lbs.	$369.75
Purchased during month	none	
Total	1700 lbs.	$369.75
On hand April 1	650 lbs.	141.37
Used month of March	1050 lbs.	$228.38
Fuse:		
On hand March 1	4000 ft.	$ 51.04
Purchased during month	6000 ft.	80.70
Total	10000 ft.	$131.74
On hand April 1	6000 ft.	80.70
Used month of March	4000 ft.	$ 50.04
Blasting Caps:		
On hand March 1	400 caps	$ 8.64
Purchased during month	1000 caps	21.60
Total	1400 caps	$ 30.24
On hand April 1	900 caps	19.44
Used during March	500 caps	$ 10.80
Miners Carbide:		
On hand March 1	85 lbs.	$ 8.93
Purchased during month	100 lbs.	10.50
Total	185 lbs.	$ 19.43
On hand April 1	120 lbs.	12.60
Used month of March	65 lbs.	$ 6.83
Mine Wedges:		
On hand March 1	1080	$ 34.30
Purchased during month	none	
Total	1080	$ 34.30
On hand April 1	1000	31.50
Used during March	80 @ 3-1/2¢	$ 2.80
Mine Track Ties--4"x 6" - 3 ft.		
On hand March 1	54	$ 21.06
Purchased during month	None	
Total	54	$ 21.06
On hand April 1	16	6.24
Used month of March	38	$ 14.82

COPY

PROJECT no. DMA-946A
I-DMA-E-30

Key-Durand Lead-Zinc
Mining Supplies Used Month of March, 1952, Continued:

Mine Rails - 25 lb.			
On hand March 1	416 lbs.	@ .05	$ 20.80
Purchased during month	4000 lbs.	@ .085	340.00
Total	4416 lbs.		$360.80
On hand April 1	2453 lbs.		208.50
Used month of March	1963 lbs.		$152.30
Horse Feed - Oats:			
On hand March 1	140 lbs.		$ 4.55
Purchased during month	235 lbs.		7.88
Total	375 lbs.		$ 12.40
On Hand April 1	150 lbs.		5.25
Used month of March	225 lbs.		$ 7.15
Horse Feed - Hay:			
On hand March 1	1700 lbs.		$ 29.75
Purchased during month	none		
Total	1700 lbs.		$ 29.75
On hand April 1	800 lbs.		14.00
Used month of March	900 lbs.		$ 15.75
Diesel Fuel:			
On hand March 1	200 gals.		$ 34.60
Purchased during month	786 gals.		135.98
Total	986 gals.		$170.58
On hand April 1	520 gals.		89.96
Used month of March	466 gals.		$ 80.62
Mine Air Lines:			
Used month of March	145 feet	2" standard black pipe	$ 60.90

COPY

KEY-DURAND LEAD-ZINC PROJECT No. HMA-946X I-HMA-E-30

INVENTORY

Mine Supplies on Hand, April 1, 1952

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
650	lbs.	(13 boxes) 1-1/8"x8" Celox No. 3 Blasting Powder	.2175	lb.		141. 37	
6000	ft.	Triple tape Water Fuse	13.45	thousand		80. 70	
900	9 bxs.	6X Blasting caps	2.16	box		19. 46	
120	lbs.	Miners Carbide	.10-1/2	lb.		12. 60	
520	gals.	Diesel Fuel	.173	gal.		89. 96	
10	gals.	White Gasoline	.26	gal.		2. 60	
16		4"x6"-3 ft. Mine track ties	.39	ea.		6. 24	
1000		Mine Wedges	.0315	ea.		31. 50	
2453	lbs.	25 lb. Mine Rails	.085	lb.		208. 50	
110	lbs.	3/8"x3" Track Spikes	.17	lb.		18.70	
16	lbs.	1/2" x 2" Track Bolts	.20	lb.		3. 20	
20	lbs.	1/2" x 2-1/4" Track Bolts	.1784	lb.		3. 58	
46	pairs	18" Track Fish Plates	.60	pair		27. 60	
10	lbs.	Regal Starfak Special Grease	.30	lb.		3. 00	
6	lbs.	Marfak No. 0. Grease	.216	lb.		1. 30	
6	lbs.	Marfak H.D. No. 2 Grease	.216	lb.		1. 29	
40	gals.	Alcaid Compressor Oil	.63	gal.		25. 20	
24	gals.	Rock Drill Lube # EP-7	.69	gal.		16. 56	
30	gals.	Ursa Super Duty Diesel Lube Oil # 30	1.126	gal.		33. 78	
5	gals.	Ursa Super Duty Diesel Lube Oil # 10	1.126	gal.		5. 63	
30	lbs.	Thuban No. 80 Lube (Texaco)	.1675	lb.		5. 03	
2		#69-R48 Rifle Nuts for I.R.R-48 Stopor drill	5.90	ea.		11. 80	
4		#60-R48 Pawls for I.R.R-48 Stoper Drill	2.15	ea.		8. 60	
4		# B168-R48 Assembly Rods for I.R.R-48 Stoper drill	5.00	ea.		20. 00	
3		#87-R48 Water Tubes for I.R.R-48 Stopor Drill	2.90	ea.		8. 70	
1	2"	Brass Gate Valve				17. 00	
1	1-1/2 "	Brass Gate Valve				12. 00	
6		Miners Axe Handles	1.15	ea.		6. 90	
		Carried Forward				822. 78	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

INVENTORY Mining Supplies on Hand, April 1, 1952 PAGE 2

SHEET NO. 2 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
2		Brought Forward				882.98	
2		Drift Pick Handles	1.29	ea.		2.58	
2		4 lb. Miners Axes	5.10	ea.		10.20	
1		Du Pont No.2 Cap Crimper				1.50	
150	lbs.	Oats	.03 1/2			5.25	
800	lbs.	Hay	.01 3/4			14.00	
1	lot	Small Bolts and Washers				2.25	
1	lot	Assorted Pipe Fittings 1/2" to 2"				61.50	
327	ft.	3" Standard Steel Pipe(for air line),(used)	.46			150.00	
147	ft.	1" Standard Galv. pipe (water line)	.29			42.63	
700	Bd.Ft.	Assorted Gen. Rough Lumber (new)	55.00	thous.		38.50	
		Total				$1151.19	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

MF-104
(August 1951)

Budget Bureau No. 42-R1036
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No. 30
Idm-E

Name of Operator Rey-Laurend
Docket No. DMA 9406
Total Contract Amount $ 66[illegible]0.00
Government Participation: 50 % Amount, $ 4099.71
Distribution of Expenditures for Month of February, 1952

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

Defense [illegible]

MAR 3 - 1952

CERTIFICATION

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

Rey-Laurend
(Name of Company)
418 Western Montana Bank Bldg.

By Roy W. Ray
(Signature of Authorized Official)

March 10, 1952
(Date)

Senior Partner
(Title)

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

16—64063-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities		1362.22	1362.22			
(b) Buildings						
New shop bldg.	40.00	503.57	543.57			
(c) Fixtures	23.10	55.70	78.80			
2. Operating Equipment:						
(a) Purchased[1]		1434.45	1434.45			
(b) Rented[2]	889.00					
		8032.24	9145.24			
(c) Furnished by operator	160.00					
	64.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.55	11.55			
(c) Installations						

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3]	2476.38	19541.43	21915.81			
5. Supervision						
6. Supplies						
(a) Timber		77.00	77.00			
(b) Explosives		1869.08	1869.08			
(c) Repair Parts	13.11	304.61	317.72			
(d) Other	189.35	2478.89	2668.14			
7. Power	65.49	840.17	905.66			
8. Transportation	36.92	1080.36	1116.28			
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation	136.21	537.26	673.47			
Payroll Taxes		695.81	695.81			
10. Contract Work						
11. Other (specify)	18.35	105.95	124.30			
Exh. D		1900.00	1900.00			
Total	4039.71	40659.29	44699.00			
Deletions						
Adjusted totals						
Totals previously reported	40659.29					
Totals to date	44699.00					

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Thomas E Howard
Amount approved for payment
Remarks

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF [illegible]

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Crosscutting	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Raising	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Shafts								(7 5.4)		
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation						[illegible]		[illegible]		
Geology and geophysics										
Trenching						[illegible]		[illegible]		
Sampling and assaying										
Roads and trails						[illegible]		[illegible]		
Test pits										
Other (specify) [illegible]	[illegible]			[illegible]	[illegible]					
Totals	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

DBA-9461
I-DBA-530

Narrative for February 1952

Poor progress due to short month and lost time while making repairs to Ai Compressor.

Also two days work was lost in mine while moving Air Compressor and other ment into the new mine shop building and laying a new air line from the shop bu to mine.

Due to the warmer weather and the heavy flow of water at the working faces mine, there was much sloughing off the walls in the main adit tunnel and consid work entailed in keeping the drainage ditch and tracks clear for the mine cars the south drift and crosscuts, which work is not covered in the contract for dr at the faces and has to be done by the general labor under days pay — hence th cost for mine haulage.

Total advance for month is as follows: South Drift - 36 feet, Crosscut No 8 feet, Crosscut No 2 East - 39 feet, Total footage - 83 feet.

The No 1X cut east has been timbered to the face. 10-5 foot sets have bee in and cribbed to the roof where caved. It was found necessary to do this work it was caving badly in the ore between the faults on the footwall and hanging w

The cost for doing this work included drilling and blasting the walls to m room for the timbers and cribbing over the sets of timber to hold the roof wher Two sets of cribbing were over 6 feet high.

The cost also included cutting the logs for cribbing in the works and hauli them in.

The first 6 rounds in ore of Crosscut No 2 East were sampled from top to b of the face with following results (Footwall toward East):

1. 0.30% Copper, 0.16% Lead, 9.15% Zinc
2. 0.15% Copper, 0.11% Lead, 2.35% Zinc
3. 0.20% Copper, 0.11% Lead, 2.78% Zinc
4. 0.40% Copper, 0.27% Lead, 5.08% Zinc
5. 0.60% Copper, 0.27% Lead, 0.38% Zinc
6. 0.80% Copper, 0.22% Lead, 0.38% Zinc

During the month we had demonstrated to us a Sandvik drilling outfit using Coromant carbide tipped steel of various lengths. This Swedish outfit put in a of holes in about 1/2 time required for our own R48 Stoppers. During month of M we expect to have demonstrated a Le Roi-Cleveland 2 way air feed sinker drill wh a somewhat heavier machine than the Swedish Sandvik outfit. However, the Sandvi has several points which make it attractive for our as yet small operation.

Roy W. Kay

Roy W. Kay

COPY

Hey-Durand Lead Mine Project No. [illegible] I-[illegible]-C-30

INVENTORY

Mining Equipment on Hand March 1, 1960 PAGE 1

SHEET NO. 1 PRICED BY [illegible]

CALLED BY [illegible] DEPARTMENT Mine EXTENDED BY [illegible]

ENTERED BY [illegible] LOCATION Hey-Durand Mine EXAMINED BY [illegible]

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
1700	lbs.	34 tons, 1-1/8"x20" Gelex No. 3 Blasting powder	.2175	lb.		369 75	
4000	ft.	Black Monarch Fuse	10.76	thsd.		91 04	
400		4 bxs. of Blasting Caps	2.10	box		8 04	
88	lbs.	Miners carbide	.10½	lb.		9 50	
200	gals.	Diesel Fuel	.175	gal.		34 00	
20	gals.	White Gasoline	.20	gal.		4 00	
2	cans	Dry Gas	.65	can		1 30	
54		4x6-3ft. Mine Track Ties	.39	ea.		21 06	
1000		Mine Wedges 1000 @	.03 .315	ea. ea.		31 50	
416	lbs.	65 lb. Mine Rails	.65	lb.		270 40	
140	lbs.	5/8"x8" Track Spikes	.17	lb.		23 80	
16	lbs.	5/8"x8" Track Bolts	.20	lb.		3 20	
35	lbs.	5/8"x2½" Track Bolts	.17½	lb.		6 46	
10	pro.	18" Track Fish Plates	.60	pr.		6 00	
10	lbs.	Regal Starfak Special Grease	.30	lb.		3 00	
6	"	Norfak No. 0 Grease	.216	lb.		1 30	
6	"	Norfak Mp. No. 2 Grease	.216	lb.		1 29	
40	Gals.	Alcoa Compressor Oil	.63	Gal.		30 24	
30	Gals.	Rock Drill Lube-Ex-P	.63	Gal.		20 70	
32	Gals	Urco Super Duty Diesel Lube Oil 30	1.125	Gal.		36 00	
20	Gals	Urco Super Duty Diesel Lube Oil 10	1.125	Gal.		22 50	
40	lbs.	Shuban "80" Lube	.16¾	lb.		6 70	
2		6-140 Little Giant for S.I.-65 Stoper Drill	5.50	ea.		11 00	
4		6-140 Pawls for S.I.-65 Stoper Drill	2.15	ea.		8 60	
2		6-163-165 Assembly Pots for S.I.-65 Stoper Drill	5.00	ea.		10 00	
3		6-27-140 Piston Rods for S.I.-65 Stoper Drill	2.00	ea.		6 00	
1		2" Brass Gate Valve				17 00	
1		1½" Brass Gate Valve				12 00	
4		Miners Axe Handles	1.15	ea.		4 60	
		Carried Forward				791 70	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

INVENTORY Mining supplies on hand March 1, 1938 PAGE 8

SHEET NO. 8 PRICED BY E.A.B.

CALLED BY E.A.B. DEPARTMENT Mine EXTENDED BY E.A.B.

ENTERED BY E.A.B. LOCATION Key-Tunnel Mine EXAMINED BY E.A.B.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
		Brought Forward				741.70	
2		Pick Handles	1.20	ea.		2 40	
5		4 lb. Miners Axes	2.10	ea.		10 20	
1		Du Pont No. 2 Gap Gelatin				1 50	
140	lbs.	Oats	.03	lb.		4 55	
1700	lbs.	Hay	.01-3/4	lb.		29 75	
1	lot	Small bolts and washers				2 00	
1	lot	Assorted Pipe Fitting ½" to 8"				61 50	
700	ft.	Assorted Rough Lumber (new)	55.00	thous.		38 50	
		Total				840 85	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

Prod of No. [illegible]
KRY-[illegible] I-[illegible]
[illegible]

COPY

Mining Supplies Used Month February, 1952

Blasting Powder:		
On hand February 1	2200 lbs.	$ 478.50
Purchased during month	none	
Total	2200 lbs.	$ 478.50
On hand March 1	1700 lbs.	369.75
Used month February	500 lbs.	$ 108.75
Fuse:		
On hand February 1	7000 feet	$ 89.32
Purchased during month	none	
Total	7000 feet	$ 89.32
On hand March 1	4000 feet	51.04
Used month February	3000 feet	$ 38.28
Blasting Caps:		
On hand February 1	800 caps	$ 17.28
Purchased during month	none	
Total	800 caps	$ 17.28
On hand March 1	400 "	8.64
Used month February	400 caps	$ 8.64
Miners Carbide:		
On hand February 1	125 lbs.	$ 14.13
Purchased during month	none	
Total	125 lbs.	$ 14.13
On hand March 1	85 lbs.	9.93
Used month February	40 lbs.	$ 4.20
Mine Wedges:		
On hand February 1	260	$ 9.10
Purchased during month	1000	31.50
Total	1260	$ 40.60
On hand March 1	1080	34.30
Used month February	180	$ 6.30
Mine Track Ties -- 4"x6"-3 ft.		
On hand February 1	84	$ 32.76
Purchased during month	none	
Total	84	$ 32.76
On hand March 1	54	21.06
Used month February	30	$ 11.70
Mine Rails (25 lb.):		
On hand February 1	1799 lbs.	$ 89.95
Purchased during month	None	
Total	1799 lbs.	$ 89.95
On hand March 1	416 "	20.80
Used month February	1383 lbs.	$ 69.15

PROJECT NO. [illegible]A-9416
I-[illegible]A-E-30

KEY-DU[illegible]AL L[illegible]-ZINC

Mining Supplies Used month February, 1952 (continued):

Horse Feed, Oats:		
On hand February 1	100 lbs.	$ 3.25
Purchased during month	270 "	8.75
Total	370 lbs.	$ 12.00
On hand March 1	140 lbs.	4.55
Used month February	230 lbs.	$ 7.45
Horse Feed, Hay:		
On hand February 1	2600 lbs.	$ 45.50
Purchased during month	none	
Total	2600 lbs.	$ 45.50
On hand March 1	1700 "	29.75
Used month February	900 lbs.	$ 15.75
Diesel Fuel:		
On hand February 1	220 gals.	$ 38.06
Purchased during month	275 gals.	47.58
Total	495 gals.	$ 85.64
On hand March 1	200 gals.	34.60
Used month February	295 gals.	$ 51.04

Mine Air Lines:
Used month February--210 feet 2" standard Black Pipe $88.20

Mine Water Lines:
Used month February--105 feet 1" standard Galv. Pipe $ 29.40

COPY

PROJECT NO. LMA-846X
I-LMA-[illegible]-30

KEY-[illegible] LEAD-ZINC

STATEMENT

MINING EQUIPMENT [illegible] MONTH FEBRUARY, 1952

Miller Machinery Company, Missoula, Montana	
1 - 315 cu. ft. Worthington Portable Diesel Air Compressor	$ 414.00
1 - Eimco 12-B Mine car Loader	280.00
1 - Diesel-Electric Generator Set, 20 K.W. 3 phase 220-440 Volts	225.00
Roy W. Key, M.D., Missoula, Montana	
1 - 3/4 ton Chevrolet Pick-Up Truck	50.00
3 - Mine Cars, @ $10.00	30.00
1 - Coppus TE-6 Ventilating Fan	30.00
1 - I.R.D. A-35 Drifter Drill	30.00
1 - I.R.D.-45 Stoper Drill	30.00
1 - Model D-6 Caterpiller Tractor with Angle Dozer (16 hours @ $8.00)	128.00
Total	$1177.00

Distribution D-6 Caterpiller Tractor & Dozer Time:

Roads: Maintenance and snow Removal	4 hrs. @ $8.00		32.00
Grading and leveling down Mine dump	8 hrs. @ $8.00		64.00
Moving Air Compressor & Equipment into New Shop building	4 hrs. @ $8.00		32.00
Total.....			128.00

COPY

PROJECT No. LEA-940X
I-LEA-E-30

KEY-DURAND LEA-ZINC

SETTLEMENT SHEET

LIST LEVEL FEET CONTRACT, MONTH FEBRUARY, 1952

Charge Item No. 2a, Key-Durand LEA Contract:
To driving South Drift, Lower Lass #3 Level
36 feet @ $10.00 per foot — $360.00

Charge Item No. 2b, Key Durand LEA Contract:
To driving No. 2 Crosscut East from South Drift
39 feet @ $10.00 per foot — $390.00
To driving No. 2 Crosscut East from South Drift
5 sets timber @ $10.00 — 50.00
Total for 75 feet driving — $800.00

Recap:

Item # 2a To driving 36 ft. in South Drift @ 10.00		$360.00
Item # 2b To driving 39 ft. in No.2 Crosscut @ 10. & $12.		440.00
	Total	$800.00

Paid Contractors as per February, 1952, payroll:

Jack A. Parks, 20 days work @ 20.00	$400.00
Willard Barrett, 20 days work @ 20.00	400.00
Total	$800.00

Note:
The contract price for driving a 5' x 7' tunnel without timber is $10.00 per foot, and $12.00 per foot timbered. The sets of timber are stood 5 feet from center to center, so there is one set for each 5 feet of tunnel. More ground has to be broken where timbered to make room for the sets. The difference in price for with or without timber is $2.00 per foot of tunnel so for each 5 foot set of timber the price is $10. per set. When a tunnel is driven without timber, and at a later time is found necessary to timber it, because of caving or sloughing of the roof or walls, the cost is greater because the roof and walls usually have to be drilled and blasted to make room for the sets.

COPY

PROJECT No. DMA-9467
I-DMA-E-30

KEY-DURAND LEAD-ZINC

PAY ROLL DISTRIBUTION

				Charge Item
Mine Development:				
Lower Vasa No. 3 Level:				
Driving South Drift 36 Ft. @ $10. per ft. contract			$ 360.00	#2a
Driving No. 2 Crosscut E., 39 ft. @ $10. per ft. contract		$390.00		
Driving No. 2 Crosscut E., 5 sets timber @$10. contract		50.00	440.00	#2b
Driving No. 1 Crosscut E., 8 ft. @ $10. per ft day pay		80.00		
Driving No. 1 Crosscut E., Making room, framing and standing, 6 sets timber & cribbing cave; day pay		178.30	258.30	#2b
Mine Haulage: Care of horse, clean tracks & ditch, snow and ice removal, level dump			161.85	
Air Compressor Plant: Maintenance & Operation			51.60	
Sharpening Tools, etc.			61.05	
Shift Bossing			60.00	
Roads: Maintenance & Snow Removal			8.00	
Buildings: New Mine Shop Construction			97.23	
Moving Air Compressor & Diesel-Electric set and equipment into new mine shop and connecting air line from new building to mine			73.20	
Mine Air Lines-Laying new pipe in mine			18.45	
Indirect Costs:				
General Supervision			181.00	
Engineering: Surveying, maps, etc.			86.25	
Office work, stenographer, etc.			186.25	
Transportation: Hauling Supplies, trips to mine, etc.			69.00	
General Camp Maintenance: Watchman, cut wood, shovel snow, etc.			61.20	
Administration: Trips Missoula Office, etc.			69.00	
Boarding House:				
Labor Cooking, etc.			232.00	
Total			$2474.38	

Certified Correct:
Francis A. Hancock
Engineer in Charge

COPY

PROJECT No. DMA-946X
I-DMA-F-30

KEY-DURAND LEAD-ZINC

ACCOUNTS PAYABLE & DISTRIBUTION FOR MONTH FEBRUARY, 1952

COPY

Miller Machinery Company, Missoula	$ 889.00
Miller Machinery Company, Missoula	73.67
Roy W. Key, M.D., Missoula	288.00
Missoula,Mercantile Company, Missoula	4.48
Davis Texaco Service, Missoula, Mont.	3.05
Farmers Union Oil Company, Hall, Mont.	63.90
Fischer's Lumber Yard, Hall, Mont.	166.50
Montana Laboratory Co., Philipsburg, Mont.	15.00
Philipsburg Hardware Co., Philipsburg, Mont.	.83
Roy W. Key, M.D., Missoula, Montana	1.70
Marshall-Wells Stores, Drummond, Mont.	8.89
Morse Brothers, Hall, Mont.	4.45
John H. Daly, Inc. Missoula, Mont.	90.18
Mrs. Henry Kolbeck, Hall, Mont.	2.75
Fagan's Cash Store, Drummond	21.90
Hall Meat Market & Grocery, Hall, Mont.	78.70
Francis A. Hancock, Hall, Mont.	12.50
Industrial Accident Board	136.21
Total	$1861.69

Recap:

Mining Equipment Rental	1049.00	
Mining Supplies	177.34	
Small Tools & Equipment	16.92	
Mine Haulage, Horse feed, oats	9.35	
Air Compressor Plant, Operation, Diesel Fuel and Supplies	56.14	
Mine Development, Leveling mine dump	64.00	
Roads: Maintenance and Snow Removal	32.00	Delete
Moving Compressor & Power Unit & Equip. into new Mine Shop	39.00	
Transportation: Hauling Supplies to mine, trips to mine and Missoula	26.92	
Buildings: New Mine Shop Construction	8.00	
New Mine Shop New Blacksmith forge (steel)	23.10	
Assaying Mine Samples	15.00	
Engineering Supplies, etc.	6.10	
Office Supplies	2.00	
Telephone Calls	3.25	
Boarding HouseEquipment	7.03	Delete
Boarding House Supplies	184.73	Delete
Commissary Account	12.60	Delete
Industrial Accident Board	136.21	
Labor	2474.38	
	$4336.07	
Less Deletions	236.36	
	$4099.71	

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No.
Idm-E 30

Name of Operator Key-Durand
Docket No. DMA 946X
Total Contract Amount $ 66500.00
Government Participation: 50 % Amount, $ 5761.26
Distribution of Expenditures for Month of January, 1952

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

FEB 25 8 48 PM '52
WASHINGTON, D.C.

CERTIFICATION

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

Key-Durand
(Name of Company)

By Roy W Key
(Signature of Authorized Official)

419 Western Bank Building
Missoula, Montana
(Date)

Senior Partner
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities		1362.22	1362.22			
(b) Buildings						
New Shop Bldg.	19.66	483.92	503.57			
(c) Fixtures		55.70	55.70			
2. Operating Equipment:						
(a) Purchased[1]	300.00	1434.45	1734.45			
(b) Rented[2]	889.00					
		5903.24	6792.24			
(c) Furnished by operator	240.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.55	11.55			
(c) Installations						

MON[illegible] SUMMARY COST STATEMENT-[illegible]ued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3]	2978.40	16463.03	19441.43			
5. Supervision						
6. Supplies						
(a) Timber	77.00		77.00			
(b) Explosives	508.80	1350.28	1859.08			
(c) Repair Parts	3.85	300.76	304.61			
(d) Other	298.42	2180.47	2478.89			
7. Power	137.58	702.59	840.17			
8. Transportation	145.24	1026.35	1171.59			
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation	117.03	420.24	537.25			
Payroll taxes		625.81	625.81			
10. Contract Work						
11. Other (specify) Misc.	46.30	59.65	105.95			
Exhibit B		1900.00	1900.00			
Total	5761.26	35280.26	41041.52			
Deletions						
Adjusted totals						
Totals previously reported						
Totals to date	35280.26					
	41041.52					

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Glenn A. Rud
Amount approved for payment
Remarks

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF January 1953

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	[illegible]	[illegible]	370.00	150.00	3014.72	ft	66	435		[illegible]
Crosscutting	1700.00	[illegible]	497.00	[illegible]	[illegible]	ft	60	163		[illegible]
Raising	[illegible]	[illegible]	[illegible]	81.00	488.25	ft	95.4	0		100
Shafts										[illegible]
Winzes										[illegible]
Drill holes										
Overburden										
Rehabilitation and preparation						[illegible]		[illegible]		
Geology and geophysics										
Trenching						[illegible]		20		
Sampling and assaying										
Roads and trails						[illegible]		[illegible]		
Test pits										
Other (specify) [illegible]	[illegible]			[illegible]	[illegible]					
Totals	[illegible]	1650.00	[illegible]	5702.20						

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

DMA-946X
I-DMA-E30

COPY

Narrative for January 1952

Despite rather severe winter weather and an unusual amount of snow fall during January, 108 feet of advance was made underground -- 62 feet as crosscuts and 46 feet as progress of drift southward and nearer Trench 13 territory. It was necessary to go back and timber the mineralized zone in XEC1 and to timber the mineralized portion of XEC2 already cut. Both these mineralized zones are making much water, so much as to require that the operators furnish miners with rubber clothes for health and comfort. It was necessary for operators to twice plough out road from workings to highway at phosphate mill.

It is noted that somewhat better ore is found toward bottom of XEC2 than at top of the cut; this condition thought to be due to mineralization being deposited in layers as is often seen in large veins or mineralized shear zones. The face of drift is becoming increasingly mineralized and a number of brown streaks along small water courses are noted. Engineer Hancock has directed drift to swing slightly to west or to the right as it is predicted that directly under Trench 13 or some 100 feet south thereof the formation will change considerably and show a more definite "wall" structure.

At present writing (February 8) the new mine shop building is complete. Montana Power Company is doing preliminary engineering work toward installing electrical power (500 H P) at our workings.

Ray W. Kay

Project No. DMA-946X
I-DMA-E30

KEY-DUBAND LEAD-ZINC

Statement

Mining Equipment Rental, Month, January, 1952

COPY

Miller Machinery Company, Missoula, Montana

1 - 315 Cu. ft. worthington Portable Diesel Air Compressor	$ 414.00
1 - Eimco 12-B Mine Car Loader	250.00
1 - Diesel-Electric Generator Set, 20 K.W. 3 phase 220-440 Volts	225.00

Roy W. Key, M.D., Missoula, Montana

1 - 3/4 ton Chevrolet Pick-Up Truck	50.00
3 - Mine Cars @ $10.00 each	30.00
1 - Coppus TM-6 Ventilating Fan	30.00
1 - I.R.RA-35 Drifter Drill	30.00
1 - I.R.R-48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer (30 hours @ $8.00)	240.00
Total	$1289.00

Distribution D-6 Caterpillar Tractor and Dozer Time:

Roads: Maintenance and snow removal, 20 hrs. @ $8.00	$160.00
Grading and leveling down dump at mine 10 hrs. @ $8.00	80.00
Total	$240.00

Project No. DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

Mining Supplies Used Month January, 1952

Blasting Powder:		
On hand January 1	1100 lbs.	$ 239.25
Purchased during month	2000 lbs.	435.00
Total	3100 lbs.	$ 674.25
On hand February 1	2200 lbs.	478.50
Used month January	900 lbs.	$ 195.75
Fuse:		
On hand January 1	4000 feet	$ 53.80
Purchased during month	6000 feet	73.80
Total	10000 feet	$ 127.60
On hand February 1	7000 "	89.32
Used month January	3000 feet	$ 38.28
Blasting Caps:		
On hand January 1	1100	$ 23.76
Purchased during month	none	
On hand February 1	800	17.28
Used month January	300	$ 6.48
Miners Carbide:		
On hand January 1	90 lbs.	$ 9.45
Purchased during month	100 "	10.50
Total	190 lbs.	$ 19.95
On hand February 1	125 "	13.13
Used Month January	65 lbs.	$ 6,82
Mine Wedges:		
On hand January 1	400	$ 14.00
On hand February 1	260	9.10
Used Month January	140	$ 4.90
Mine Track Ties 4" x 6" -3 ft.:		
On hand January 1	60	$ 23.40
Purchased during month	80	31.20
Total	140	$ 54.60
On hand February 1	84	32.76
Used month January	56	$ 21.84
Mine Rails: (25 lbs.)		
On hand January 1	3375 lbs.	$ 168.75
On hand February 1	1799 lbs.	89.95
Used Month January	1576 lbs.	$ 78.80

KEY-DURAND LEAD-ZINC

Mining Supplies Used Month January, 1952 (continued)

Horse Feed, Hay:		
On hand January 1	3500 lbs.	$ 61.25
On hand February 1	2600 lbs.	45.50
Used Month January	900 lbs.	$ 15.75
Horse Feed, Oats:		
On hand January 1	150 lbs.	$ 4.13
Purchased during month	226 lbs.	7.35
Total	376 lbs.	$ 11.48
On hand February 1	100 lbs.	3.25
Used Month January	276 lbs.	$ 8.23
Diesel Fuel:		
On hand January 1	200 Gals.	$ 34.60
Purchased during month	487 Gals.	84.27
Total	687 Gals.	$ 118.87
On hand February 1	220 Gals.	38.06
Used Month January	467 Gals.	$ 80.81

COPY

Project No. DMA-946X
I-DME-30

Key-Durand Lead-Zinc

PAY ROLL DISTRIBUTION

Mine Development: Lower Wasa No. 3 Level		Charge Item Key-Durand DMA Contract
Driving South Drift 46' @ $10. per ft., contract	$ 460.00	2a
Driving No.2 Crosscut East 52' @ $10. per ft., contract	520.00	2b
Driving No. 2 Crosscut East 10' @$12. per timbered ft. contract	120.00	2b
Waking room and timbering No. 1 crosscut East, Days Pay work	240.97	2b
Timbering & Catching up bad ground, Main Adit, wase# 3	105.48	2c
Mine Haulage: care of horse, cleaning track & ditch, snow and ice removal, level dump,etc.	117.91	
Air Compressor Plant: Operation & Maintenance	51.43	
Sharpening Tools, Drill Repairs,etc.	82.75	
Mine Supplies & Equipment: Taking up rails at Inter-Nation Chemical Mine and Hauling to Key-Durand mine	37.46	
Shift Bossing	77.15	
Roads: Maintenance & Snow Removal	56.00	
Buildings: New Mine Shop Construction	183.53	No.5 "exhit-it F"
Electric Power Line Survey	6.43	
Indirect Costs:		
General Supervision	121.00	
Engineering: Surveying, Maps, Sampling,etc.	145.15	
Office Work	180.65	
Transportation: Hauling Supplies, trips to Mine, etc.	101.56	
General Camp Maintenance, Watchman, cuttling wood, Maintenance buildings, shovel snow,etc.	58.43	
Administration: Trips to Missoula Office, Spokane,etc.	64.50	
Boarding House: Labor Cooking	248.00	
Total	$2978.40	

Certified Correct:
Francis A. Hancock
Mining Engineer in Charge

Project No. DMA-946X
I-DME-30

Key-Durand Lead-Zinc

SETTLEMENT SHEET

Mine Development Contracts, Month January, 1952

COPY

Charge Item 2a, Key-Durand DMA Contract:
To driving South Drift, Lower Basa #3 Level
46 feet @ $10.00 per foot.....$ 460.00

Charge Item 2b, Key-Durand DMA Contract:
To driving No. 2 Crosscut East from South Drift
52 feet @ $10.00 per foot..... 520.00
To driving No. 2 Crosscut East from South Drift
10 feet Timbered @ $12.00..... 120.00

Total for 108 feet.....$1100.00

Recap:
Item #2a To driving 46 feet south drift @ $10.00.....$ 460.00
Item #2b To driving 62 feet #2 Crosscut @ $10. & $12.. 640.00

Total $1100.00

Paid Contractors as per January, 1952, Payroll:

Joe A. Clements,	14 days work @ $20.40	$ 285.60
Jack Parks,	27 days work @ $20.618	556.68
Willard Barrett,	12½ days work @ $20.617	257.72

Total.....$1100.00

Project No.DMA-946X
I-DMA-E30

KEY-DURAND LEAD-ZINC

Accounts Payable & Distribution for Month January, 1952

COPY

Miller Machinery Co.	$ 889.00
Miller Machinery Co.	437.17
Roy W. Key, M.D.	400.00
Farmers Union Oil Company	150.54
Philipsburg Hardware	557.01
R.L. Lucier, Sawmill	77.00
Fischer's Lumber Yard	122.10
Joe Atwell, Hall	10.80
The Texas Company	91.66
Marshall-Wells Stores	44.95
Montana Laboratory Co.	33.00
Roy W. Key, M.D.	3.00
Roy W. Key, M.D.	82.23
Francis A. Hancock	11.00
Westmont Tractor & Equipment Co.	4.54
"C" Jack James, Drummond	1.50
Cliff Beck Motors	9.45
Western Meat Packers Inc.	117.90
Morse Brothers, Hall	6.50
Hall Meat Market & Grocery	77.06
Fagan's Cash Store, Drummond	109.60
Miller's Dry Goods Store	6.70
Mrs. Henry Kolbeck	12.90
Industrial Accident Board, Dec.	117.02
Total	$3372.63

Recap:

Mine Equipment Rental	$1049.00	
Mining Supplies	873.50	
Small Tools & Equipment	300.00	
Mine Haulage, horse feed, harness repair, etc.	17.45	
Air Compressor Plant, Maintenance & Operation	123.98	
Mine Development, Leveling Pump	80.00	
Roads, Maintenance & snow removal	170.85	Delete
Transportation, Hauling Supplies & trips to mine	61.55	
New Mine Shop Building, Construction	19.65	
Travel Expense	83.69	
Tel & Tel	1.30	
Assaying	3[illegible].00	
Prepaid Deposit on Oil Drums	12.00	
Office Supplies, Postage, etc.	6.77	
Engineering Supplies, Maps, etc.	3.95	
Boarding House Equipment	75.01	Delete
Carried Forward	$2911.70	

Project No. LMA-946X I-DMA-E30
Key-Durand Lead-Zinc
Accounts Payable & Distribution for Month January, 1952

Recap: (continued)

Brought Forward:	$2911.70	
Boarding House Supplies	303.44	Delete
Commissary Supplies	40.47	Delete
Payroll Taxes, Ind. Acc. Ins.	117.02	
Total	$3372.63	
Payroll	2978.40	
	$6351.03	
Deleted	589.77	
	$5761.26	

COPY

Key-Durand Lead-Zinc Project No. DMA-946X I-DMA-E30

INVENTORY Mining Supplies on Hand February 1, 1952

SHEET NO. 1 PRICED BY F.A.H.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.A.H. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
2200#	50# bx.	44bxs. 1-1/8"x8" Gelex No.3 DuPont Blasting Powder	21.75	100#		478 50	
7000	feet	Black Monarch Fuse	12.76	1000 Ft.		89.32	
800	100 bx.	6X Blasting caps	2.16	box		17.28	
125	lbs.	Miners Carbide	10½¢	lb.		13.13	
220	gals.	Diesel Fuel	.173	gal.		38.06	
20	gals.	Gasoline	.26	gal.		5.20	
3	cans	Dry Gas	.65	can		1.95	
84	4x6-3ft.	Mine Track Ties	.39	each		32.76	
260		Mine Wedges	3½¢	each		9.10	
1799	lbs.	25 lb. Mine Rails	5¢	lb.		89.95	
200	lbs.	3/8"x3" Track Spikes	.17	lb.		34.00	
20	lbs.	Track Bolts	.20	lb.		4.00	
20	pairs	18" Track Fish Plates	.60	pair		12.00	
15	lbs.	Regal Starfak Special Grease	.30	lb.		4.50	
8	lbs.	Marfak No. 0 Grease	.216	lb.		1.73	
8	lbs.	Marfak H.D. No. 2 Grease	.216	lb.		1.73	
54	Gals.	Alcaid Compressor Oil	.63	Gal.		34.02	
54	Gals.	Rock Drill Lube-EP-V	.69	Gal		34.50	
46	lbs.	Thuban "80" Lube	.1675	lb.		7.70	
32	Gals	Ursa Super Duty Diesel Lube Oil"30"	1.126	Gals.		36.03	
20	Gals	Ursa Super Duty Diesel Lube Oil"10"	1.126	gals.		22.50	
1	only	53S.B.R.85 Chuck Bushing for R.48 Stoper Drill	18.35	ea.		18.35	
2	only	#69-R-48 Rifle Nuts for I.R.R48 Stoper Drill	5.90	ea.		11.80	
4	only	#60-R48 Pawls for I.R.R48 Stoper drill	2.15	ea.		8.60	
2	only	#B168-R48 Assembly Rods	5.00	ea.		10.00	
3	only	#27-R48 Water Tubes	2.90	ea.		8.70	
1	only	2" Brass Gate Valve				17.00	
1	only	1½" Brass Gate Valve				12.00	
						$1054.41	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

INVENTORY Mining Supplies on hand February 1,1952

SHEET NO. 2 PRICED BY F.AH.

CALLED BY F.A.H. DEPARTMENT Mine EXTENDED BY F.A.H.

ENTERED BY F.AH. LOCATION Key-Durand Mine EXAMINED BY F.A.H.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
		Drought Forward				1054.41	
2	only	Miners Axe Handles	1.10	each		2.20	
2	only	Miners Drift Pick Handles	1.29	each		2.58	
1	only	Dupont No.2 Cap Crimpers				1.50	
1	lot	Small Bolts and Washers				1.00	
100	lbs.	Oats	3-1/4¢	lb.		3.25	
2600	lbs.	Hay	.0175	lb.		45.50	
210	feet	2" Standard Black Pipe for mine air line	.42	ft.		88.20	
165	feet	1" Standard Galv. Pipe for mine water line	.28	ft.		29.40	
1	lot	Assorted Pipe Fittings, ells, tees, sleeves, Bushings, etc.	½"-2"			45.10	
800	feet	Assorted Rough Lumber (new)	$55.	1000	ft.	44.00	
		Total				$1317.14	

FORM 605-72 WM U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

MF-194
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No. 30
Idm-E

Name of Operator [illegible]
Docket No. DMA [illegible]
Total Contract Amount $ [illegible]
Government Participation: [illegible] % Amount, $ [illegible]
Distribution of Expenditures for Month of [illegible]

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

CERTIFICATION

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

[illegible] (Name of Company)

By Ray W. Key (Signature of Authorized Official)

January 8, [illegible] (Date)

[illegible] (Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities						
		[illegible]	[illegible]			
(b) Buildings						
[illegible] Nov.	[illegible]		[illegible]			
[illegible] Dec.	[illegible]					
(c) Fixtures						
Nov.	[illegible]					
Dec.	[illegible]		[illegible]			
2. Operating Equipment:						
(a) Purchased[1]						
[illegible]	[illegible]	[illegible]	[illegible]			
(b) Rented[2]	[illegible]					
		[illegible]	[illegible]			
(c) Furnished by operator	[illegible]					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		[illegible]	[illegible]			
(c) Installations						

16—64068-3

MO[redacted]Y SUMMARY COST STATEMENT [redacted]tinued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(*d*) Fixtures						
4. Labor [3]	[illegible]	[illegible]	[illegible]			
5. Supervision						
6. Supplies						
(*a*) Timber						
(*b*) Explosives	[illegible]	[illegible]	[illegible]			
(*c*) Repair Parts	[illegible]	[illegible]	[illegible]			
(*d*) Other	[illegible]	[illegible]	[illegible]			
7. Power	[illegible]	[illegible]	[illegible]			
8. Transportation	[illegible]	[illegible]	[illegible]			
9. Insurance						
(*a*) Fire						
(*b*) Public Liability						
(*c*) Workmen's Compensation	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]			
10. Contract Work						
11. Other (specify)	[illegible]	[illegible]	[illegible]			
[illegible]		[illegible]	[illegible]			
Total	[illegible]	[illegible]	[illegible]			
Deletions						
Adjusted totals						
Totals previously reported	[illegible]					
Totals to date	[illegible]					

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

Note.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Glenn A. Rud
Amount approved for payment
Remarks

Total Costs were included in Item 4, see Exhibit "B"

$[illegible].00 on Quarter report [illegible] see [illegible] payroll [illegible] salary.

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF December 1951

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	971.30	1285.00	238.59	278.16	2773.13	ft	39	385	424	800
Crosscutting	1240.40	1447.92	299.66	278.16	3266.14	ft	49	114	163	800
Raising										
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation	439.05				439.05	ft		875		900
Geology and geophysics										
Trenching						hrs		10		165
Sampling and assaying										
Roads and trails	1565.00				1565.00	hrs		134		250
Test pits										
Other (specify) New Mine Bldg				483.92	483.92					
Totals	4215.75	2733.00	538.25	1040.24	8527.24					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

DMA-946X
I-DMA-E30

Narrative for December, 1951

COPY

December produced only a minimum amount of progress on this project. Severe winter weather set in about December and this coupled with Seasons Holidays saw only 88 feet of advance underground in the form of extending South drift to 100 feet farther in from XCE 1 and the start of XCE 2. The formation changed decidedly between these two crosscuts in that definite planes appeared in the limestone, such planes being somewhat flat but dipping from South to North as was predicted by Mr. G.C. Popoff in a private conversation.

Engineer Francis A. Hancock is preparing a longer map of the Shamrock Area and will show the position and gross findings of United States Bureau of Mines diamond drill holes No. 8A and 10, both of which cut the Shamrock "Vein" at a dip of minus 45 degrees and bearing West. These two holes are 1175 feet apart and in the same North-South line.

Our South drift is now approaching Trench No. 13 territory which is approximately 200 feet North of Diamond Drill hole No. 8A.

Ray W Ky

PROJECT No. DMA-946X
I-DM-E-30

KEY-DURAND LEAD-ZINC

Accounts Payable and Distribution for month December, 1951

COPY

Accounts Payable:

1	Miller Machinery Co.	$ 889.00
2	Miller Machinery Co.	39.70
3	Roy W. Key, M.D.	544.00
4	Roy W. Key, M.D.	56.00
5	Roy W. Key, M.D.	11.60
6	Archie Fraser	25.00
7	International Mineral and Chemical Co.	200.00
8	Farmers Union Oil Company	52.41
9	Fischer's Lumber Yard	286.00
10	Ingersoll-Rand Co., Butte	36.70
11	Marshall-Wells Stores	46.99
12	Philipsburg Hardware Co.	46.35
13	Hall Repair and Service, Hall	4.00
14	Westerner's, Missoula	30.24
15	Morse Brothers, Hall	2.00
16	Durf's Service Station	3.05
17	Mrs. Henry Kolbeck, Hall	15.05
18	Fagan's Cash Store, Drummond	74.60
19	Hall Meat Market and Grocery	24.89
20	Modern Business College	1.50
21	Davis Texaco	13.52
22	Missoula Mercantile Co.	16.03
23	Westmont Tractor	4.77
24	Industrial Accident Board	41.30
25	Montana Laboratory	7.50
	Total	$2472.20

November Deletions $3247.74 *

* 1b	$ 329.79
* 1c	52.95
* 2a	1300.00
* 4	1565.00

Distribution:

Mining Equipment Rentals	$1433.00
Mining Supplies	504.29
Air Compressor Plant Operation	46.16
Small Tools and Equipment	33.96
Transportation, Hauling Supplies, etc.	77.07
Payroll Taxes and Insurance	41.30
Carried Forward	$2135.78

KEY-DURANT LEAD-ZINC

Accounts Payable and Distribution for month December, 1951

Distribution (continued);

Brought Forward	$2135.78
New Mine Shop Building Material	154.13
Assaying	7.50
Office Expense	1.50
Boarding House Equipment	2.75
Boarding House Supplies	108.24
Commissary Account	62.30
Total	$2472.20

COPY

B17-[illegible] [illegible] Project No. [illegible]-946X I-[illegible]-30

INVENTORY [illegible]ining [illegible]lies on hand January 1,1958 PAGE 1

SHEET NO. 1 PRICED BY [illegible]

CALLED BY [illegible] DEPARTMENT Mine EXTENDED BY [illegible]

ENTERED BY [illegible] LOCATION Hay-[illegible] Mine EXAMINED BY [illegible]

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
1100	80 bx. 22 bx.	1 1/8 Velex 3 Dupont Blasting Powder	$1.75 box			230 25	
4000	feet	Black Monarch Fuse	.0136	ft.		54 50	
1100 100 bx.	11 bxs.	6 X Blasting Caps	2.10	bx.		23 70	
50	lb.	Miners Carbide	10½¢	lb.		5 45	
200	Gals.	Diesel Fuel	17.5¢	gal.		34 00	
200	lbs.	2 sacks Blacksmith Coal	3.00			6 00	
400		Mine Wedges	35¢	ea.		14.00	
80	4x6-Ft	Mine Track Ties	39¢	ea.		23 40	
3375	lbs.	85 lb. Mine Rails	6¢	lb.		203 75	
25	lbs.	3/8"x3"	Track Spikes	16¢	lb.	4 00	
25	lbs.		Track Bolts	20¢	lb.	5 00	
25	pairs		18" fish plates for 85 lb. rails	60¢		15 00	
18	lbs.		Degol Sturfak Spec. Grease	30¢		5 40	
10	lbs.		Surfak No. 0 Grease	.216	¢	2.16	
10	lbs.		Surfak E.P. No.2 Grease	.216¢		2 16	
2	gals.		Alcak Compressor Oil	60¢	gal.	1 20	
2	gals		Rock Drill Lub. Oil	86¢		1 72	
36	Gals.		Brea Super Duty Diesel Lub. Oil 30	1.120	gal.	40 34	
26	Gals.		Brea Super D. Diesel Lub Oil, 10	1.126	gal.	29 28	
1	only	6SRM65	Chuck Bushing for F48 Stoper Drill	18.35		18 35	
2	only	760-F48	Rifle Nuts for F.C.D.-48 Stoper Drill	5.80		11 60	
4	only	740-F48	Rivets for F.C.D.-48 Stoper Drill	2.15	ea.	8 60	
2	only	2163-F48	Assembly Rods for F.C.D.-48 Stoper Drill	5.00	ea	10 00	
5	only	187-F48	Water Tubes	2.90	ea.	14 50	
1	only	2"	Brass Gate Valve			17 00	
2	only	1½"	Brass Gate Valve	12.		24 00	
1	only	1"	Brass Gate Valve			7 00	
3	only		Miners Hat Headlamps	1.10	ea.	3 30	
			[illegible]			794 42	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

[redacted]NVENTORY Pentr[redacted]pplies on Hand January 1,1969 PAGE 2

SHEET NO. 2 PRICED BY E.A.H.

CALLED BY E.A.H. DEPARTMENT Mine EXTENDED BY E.A.H.

ENTERED BY E.A.H. LOCATION Key-Burak Mine EXAMINED BY E.A.H.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
		Brought Forward				794 42	
3	only	Miners Drift Pick Handles	1.29	ea.		3 87	
1	only	DuPont No.2 Cap Crimpers				1 50	
1	qt.	DuPont Cap Sealing Compound				1 00	
1	lot	Shell Bolts and Washers				1 00	
150	lbs.	Oats (Horse Feed)	2.75			4 13	
2500	lbs.	Hays (Horse Feed)	1 3/4			61 25	
1	lot	assorted Pipe Fittings, ells, Tees, etc 3/4"to2"				24 00	
210	ft.	2" Standard Black Pipe for Mine airline .42 ft.				88 20	
105	ft.	1" Standard Galv. Pipe for water line .28 ft.				29 40	
		Total				1009.57	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

PROJECT No. LRA-946X
I-DM-E30

KEY-DUNARE LEAD-ZINC

STATEMENT

MINING EQUIPMENT RENTAL, MONTH DECEMBER, 1951

COPY

Miller Machinery Company, Missoula, Montana.

1 - 315 cu. ft. Worthington Portable Air Compressor	$ 414.00
1 - Eimco 12 B Mine Car Loader	250.00
1 - 1 Diesel-Electric Generator Set, 20 h.p., 3 Phase, 220-440 Volt	225.00

Roy E. Key, W.D., Missoula, Montana.

1 - 3/4 ton Chevrolet Pick-Up Truck	$ 50.00
3 - Mine Cars @ $10. each	30.00
1 - 1 Coppus TM-6 Ventilating Fan	30.00
1 - I.R. DA-35 Drifter Drill	30.00
1 - I.R. R-48 Stoper Drill	20.00
1 - Model D-6 Caterpillar Tractor with Angle Dozer 48 hours @ $8.00	384.00
Total	$1438.00

D-6 Caterpillar Tractor and Dozer Used:

New Mine Shop Building- filling floor,	8 hrs. @ $8.00	$ 64.00
Road Maintenance and Snow Removal	24 hrs. @ $8.00	192.00
Mine Development: Moving and leveling camp	16 hrs. @ $8.00	128.00
Total		$384.00

PROJECT No. IDA-946X
IDA-E 30

KAY-DUBANE LEAD-ZINC

SETTLEMENT SHEET

COPY

Mine Development Contracts, Month December, 1951

Charge Item 2a:

To driving South Drift, Lower Pass No. 3 Level 39 feet @ $10.00 per foot	$390.00

Charge Item 2b:

To driving No. 1 Crosscut East from South Drift, 10 feet timbered @ $12.00	120.00
To driving No. 1 Crosscut East from South Drift, 15 feet @ $10.00 per foot	150.00
To driving No. 2 Crosscut East from South Drift, 24 feet @ $10.00 per foot	240.00
Total for 88 feet driving	$900.00

Recap:

Item 2 a To driving 39 feet South drift @ $10.00	$390.00
Item 2b To driving 49 feet Crosscuts @ $10.00 and $12.00	510.00
Total	$900.00

Paid Contractors as per December Payroll:

Joe A. Clements,	20 days work @ $23.00	$460.00
William Barrett,	17 days work @ $22.06	375.00
Jack Parks,	3 days work @ $21.67	65.00
Total		$900.00

Certified Correct:

Francis A. Hancock
Mining Engineer

PROJECT No. DRA-946X
I-DRB-50

KEY-TUBANI LEAD-ZINC

MINING SUPPLIES USED MONTH DECEMBER, 1951

COPY

Blasting Powder:		
On hand December 1	1600 lbs.	$348.00
On hand January 1, 1952	1100 lbs.	239.25
Used Month December	500 lbs.	$108.75
Fuse:		
On hand December 1	6000 feet	$ 80.70
On hand January 1	4000 feet	53.80
Used Month December	2000 feet	$ 26.90
Blasting Caps:		
On hand December 1	400	$ 8.64
Purchased during month	1000	21.60
Total	1400	$ 30.24
On hand January 1	1100	23.76
Used month December	300	$ 6.48
Miners Carbide:		
On hand December 1	115 lbs.	$ 12.07
On hand January 1	90 lbs.	9.45
Used month December	25 lbs.	$ 2.62
Mine Wedges:		
On hand December 1	475	$ 16.62
On hand January 1	400	14.00
Used Month December	75	$ 2.62
Mine Track Ties: 4"x6"-3 ft. .39		
On hand December 1	100	$ 39.00
On hand January 1	60	23.40
Used Month December	40	$ 15.60
Mine Rail, 25 lbs.		
On hand December 1	750 lbs.	$ 37.50
Purchased during month	4000 lbs.	200.00
Total	4750 lbs.	$237.50
On hand January 1	3375 lbs.	168.75
Used month December	1375 lbs.	$ 68.75
Horse Feed, Hay:		
On hand December 1	4500 lbs.	$ 78.75
On hand January 1	3500 lbs.	61.25
Used during month December	1000 lbs.	$ 17.50

KEY_LOMAND LEAD-ZINC

Mining Supplies used month December, 1951 (continued)

Horse Feed, Oats:

On hand December 1	200 lbs.	$ 5.50
Purchased during month	300 lbs.	8.25
Total	500 lbs.	$13.75
On hand January 1	150 lbs.	4.13
Used month December	350 lbs.	$ 9.62

Diesel Fuel:

On hand December 1	200 gals.	$34.60
Purchased during month	220 gals.	38.06
Total	420 gals.	$72.66
On hand January 1	200 gals.	34.60
Used month December	220 gals.	$38.06

COPY

PROJECT No. LEA-946X
I-LEE-30

KEY-LUKANI LEAD-ZINC

PAYROLL DISTRIBUTION:

		Item
Mine Development: LOWER NASA No. 3 Level		
Driving South Drift 39 ft. @ $10.00 per foot contract	$ 390.00	#2a
Driving No. 1 Crosscut East 15 ft. @$10 per ft. "	150.00	#2b
Driving No. 1 Crosscut East 10 ft. @$12.per ft. Timbered, contract	120.00	#2b
Driving No. 2 Crosscut East 24 ft. @ $10. perft. contract	240.00	#2b
Mine Haulage: Care of horse, clean tracks & ditch, snow and ice removal, level dump, etc.	153.70	
Air Compressor Plant: Maintenance and Operation	43.50	
Sharpening Tools	20.50	
Shift Bossing	127.70	
Roads: Maintenance and Snow Removal	48.00	
Buildings: New Mine Shop Construction	439.05	
Indirect Costs:		
General Supervision	193.50	
Engineering: Surveying, Maps, etc.	96.80	
Office Work	204.80	
Hauling Supplies (Transportation)	63.65	
Administration-Trips Missoula Office, etc.	64.50	
Camp Maintenance: Watchman, Cut wood, Maintenance Buildings, Shovel snow	127.05	
Boarding House:		
Cooking Labor	168.00	
Total	$2650.75	

Certified Correct:

Francis A. Hancock
Mining Engineer

COPY

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No.
Idm-E [illegible]

Name of Operator [illegible]
Docket No. DMA [illegible]
Total Contract Amount $ [illegible]
Government Participation: [illegible] % Amount, $ [illegible]
Distribution of Expenditures for Month of [illegible], 1951

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

CERTIFICATION

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

[illegible]
[illegible]
[illegible]
[illegible]
(Name of Company)

By [illegible]
(Signature of Authorized Official)

[illegible], 1951
(Date)

[illegible]
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities						
Dec 5001	1324.00		1300.00			
Dec 1001,000.	47.00					
(b) Buildings						
Dec 1500	246.00	debte	300.70			
000.	02.00					
(c) Fixtures						
Dec.	00.00	debte	00.00			
2. Operating Equipment:						
(a) Purchased[1]	1300.00	debte 100.00	1400.00			
(b) Rented[2]	000.00					
		000.21	2000.00			
(c) Furnished by operator	100.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.00	11.00			
(c) Installations						

16—64068-3

MONTH[illegible]UMMARY COST STATEMENT—Co[illegible]ued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3] 2294.15	[illegible]	10143.15	[illegible]			
5. Supervision	[illegible]					
6. Supplies						
(a) Timber						
(b) Explosives	[illegible]	[illegible]	[illegible]			
(c) Repair Parts		[illegible]	[illegible]			
(d) Other	103.26	1657.35	1760.[illegible]			
7. Power	116.11	[illegible]	[illegible]			
8. Transportation	31.30	377.00	[illegible]			
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation		[illegible]	278.9[illegible]			
[illegible]		[illegible]	[illegible]			
10. Contract Work						
11. Other (specify)	[illegible]	[illegible]	[illegible]			
[illegible]		1000.00	1000.00			
[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]			
Total 8822.74	[illegible]	[illegible]	[illegible]			
Deletions	[illegible]	[illegible]	[illegible]			
Adjusted totals	[illegible]		[illegible]			
Totals previously reported	[illegible]	[illegible]				
Totals to date	[illegible]		[illegible]			

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

Note.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Howard T. Reno
Amount approved for payment
Remarks

[illegible] 502.13
[illegible] 101.00
[illegible] 07.15

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF November 1951

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	000.00	1174.50	312.53	125.13	2[illegible]7.10	ft	00	327	327	000
Crosscutting	000.00	1174.00	312.53	125.13	2[illegible]9.10	ft	00	02	114	000
Raising										
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation						ft		000	000	000
Geology and geophysics										
Trenching						hrs		10	10	100
Sampling and assaying										
Roads and trails	2000.10	1210.00		140.53	3[illegible]7.27	hr	100	20	300	000
Test pits										
Other (specify) Less other [illegible]				200.70	200.70					
Totals	3000.10	3000.00	000.00	700.37	0775.48					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

DLA-246X
I-DLA-530

Labor on Mr. Hancocks Distribution Sheet	$3458.15
Add cooks labor for September	26.00
July	180.00
	$3664.15

October and November cooks labor deletions are corrected on November Voucher form No. MF 104.

Narrative for November, 1951

During month of November we saw the completion of two points which are of interest and the starting of a third item which will be of some importance, namely the construction of a 18' x 40' heated wooden building which will house compressor, D-6 tractor and dozer, provide adequate shop space and change room for miners (dry room).

The completion of 1.62 mile of new Forest Service specification road from Phosphate mine to intersect previously constructed road just above Forest Service administrative cabin on Douglas Creek will greatly improve ingress and egress to Durand Lead-Zinc Claims during both winter and summer.

The completion of first crosscut to east in Shamrock Extension ground revealed a well mineralized Shear Zone some 52 feet wide on a dip of 30° E, which if corrected for the dip gives us a vein of approximately 26± feet in width, which will shortly be correctly sampled (12 samples) by Engineer Hancock.

At this writing (December 15th) we have started second eastward crosscut 100 feet south of No. 1 crosscut off our southward drift into Trench 13 - 14 Country. Indications are now present which would cause us to beleive mineralized shear zone is swinging to west and is nearer than 24.5 feet from south drift.

Respectfully,

Roy W. Key

[illegible]

[illegible] No. [illegible] 9405
I-[illegible]-850

PAYROLL [illegible] [illegible] 1951

Mine Development: Lower [illegible] No. 3 level:		
Driving South Drift, Contract-58 ft. @ $10.00	$ 580.00	Item No. 2a
Driving No. 1 Crosscut East, Contract 52 ft. @ $10.00 per foot	520.00	Item No. 2b
Sharpening Tools	25.00	
Mine Haulage: Care of horse, cleaning track and ditch, etc.	67.10	
Air Compressor Plant: Operation & Maintenance	40.00	
Shift Bossing	75.00	
Construction Work:		
Building New Road up Douglas Creek to Camp (Completed)	1170.20	
Building New Mine Shop for equipment and repair shop	139.50	
Indirect Costs:		
General Supervision	166.60	
Engineering: Surveying, Maps, etc.	66.74	
Office Work	216.62	
Administration: Trips to Missoula Office, etc.	85.40	
Hauling Supplies	81.64	
Camp Maintenance: Watchman, Cutting Wood, Maintenance Buildings, etc.	48.35	
Boarding House:		
Cooking Labor	168.00	
Total	$3452.15	

Certified Correct:

Francis J. Hancock, Gen. Supt.

COPY

PROJECT No. LEA-946X
I-1[illegible]F-30

KEY-LUCKY LEAD-ZINC

Settlement Sheet

Mine Development Contracts, Month November, 1951

COPY

Item No. 2a
To driving South Drift, lower main No. 3 level
58 feet @ $10.00 per ft. $ 580.00

Days worked:

Joe A. Clements,	13½ days @	$22.629	$305.50
Joseph A. Barrett,	3 days @	12.30	36.90
Willard Barrett,	10½ days @	22.629	237.60
		Total	$580.00

Item No. 2b
To driving Crosscut No. 1 east from South Drift
52 feet @ $10.00 per ft. $ 520.00

Days worked:

Joe A. Clements,	11½ days @	$22.6087	$260.00
Willard Barrett,	11½ days @	$22.6087	260.00
		Total	$520.00

Recap:
To driving 110 feet drift and crosscut @ $10.00 per ft. $1100.00

Paid Contractors, as per November payroll:

Joe A. Clements,	25 days work @	$22.62	$565.50
Joseph A. Barrett,	3 days work @	12.30	36.90
Willard Barrett,	22 days work @	$22.62	497.60
		Total	$1100.00

Student No. [illegible]
1-[illegible]-20

[illegible]

Mining Supplies Used Month November, 1921

Blasting Powder:		
On hand November 1	450 lbs.	$ 97.88
Purchased during month	2000 lbs.	435.00
Total	2450 lbs.	$532.88
On hand December 1	1000 lbs.	348.00
Used Month November	450 lbs.	$184.88
Fuse:		
On hand November 1	3000 ft.	$ 40.35
Purchased during month	6000 ft.	80.70
Total	9000 ft.	$121.05
On hand December 1	6000 ft.	80.70
Used Month November	3000 ft.	$ 40.35
Blasting Caps:		
On hand November 1	700	$ 16.12
Purchased during month	none	
On hand December 1	400	8.64
Used month November	300	$ 6.48
Miners Carbide:		
On hand November 1	50 lbs.	$ 5.25
Purchased during month	100 lbs.	10.50
Total	150 lbs.	$15.75
On hand December 1	115 lbs.	12.07
Used month November	35 lbs.	$ 3.68
Mine Wedges:		
On hand November 1	600	$ 21.00
Purchased during month	none	
On hand December 1	475	16.62
Used month November	125	$ 4.38
Mine Track Ties: 4 x 6 - 8 ft. Oak		
On hand November 1	55	$ 21.45
Purchased during month	80	31.20
Total	135	$52.65
On hand December 1	100	39.00
Used month November	35	$13.65
Mine Rail - 20 lbs.		
On hand November 1	2000 lbs.	$100.00
Purchased during month	none	
On hand December 1	750 lbs.	37.50
Used month November	1250 lbs.	$ 62.50

COPY

PROJECT No. DMA-946X
I-LMK-30

Mining Supplies Used Month November, 1951 (continued)

Horse Feed - Hay:

On hand November 1	8505 lbs.	1 3/4 ¢	$96.34
Purchased during month	none		
On hand December 1	4500 lbs.		78.75
Used month November	1005 lbs.		$17.59

Horse Feed - Oats:

On hand November 1	80 lbs.	2.75¢	$ 2.20
Purchased during month	485 lbs.	2.75¢	13.35
Total	565 lbs.		15.55
On hand December 1	200 lbs.		5.50
Used month November	365 lbs.		10.05

COPY

PROJECT No. LLA-946X
I-DVE-30

KEY-LUMAR LEAD-ZINC

Accounts Payable and Distribution for Month November, 1951

Accounts Payable:

Miller Machinery Co.	$ 889.00
Miller Machinery Co.	26.28
Miller Machinery Co.	16.12
Miller Machinery Co.	1300.00
Roy W. Key, K.T.	1376.00
Granite County Treasurer	34.46
Marshall-Wells Stores	1.75
Mrs. Henry Holbeck	13.60
Millers Dry Goods Store	6.95
Davis Texaco Service	23.65
G.C. Keirns Sawmill	263.84
Montana Laboratory Co.	7.50
Haines Independent Wholesale Grocery	120.87
Durf's Service Station	17.25
Fagan's Cash Grocery	109.11
Farmers Union Oil Company	108.56
Fischer's Lumber Yard	62.80
The Texas Company	8.22
The Texas Company	60.81
Philipsburg Hardware Co.	535.55
Roy W. Key, K... (Kirkero Reps)	2.40
Total	$4984.72

Distribution:

Mining Equipment Rentals	$1049.00
Mining Supplies	618.76
Mining Machinery and Equipment	1300.00
Small Tools and Equipment	6.30
Compressor Plant Operation	102.16
Mine Haulage (horse feed,etc.)	13.95
New Road Construction	1314.33
New Mine Shop Building Construction	246.89
Transportation, Hauling supplies,etc.	47.65
Travel Expense	23.65
Engineering Maps,etc.	2.40
Assaying	7.50
Payroll, taxes and Ins.	0.00
Boarding House Supplies	236.82
Commissary Supplies	15.31
Total	$4984.72

COPY

PROJECT No. DRA-9460
I-LMR-30

KEY-LUPAR LEAD-ZINC

Mining Equipment Rental, Month November, 1951

Miller Machinery Company, Missoula, Montana

1 - 315 Cu. ft. Worthington Portable Air Compressor	$ 414.00
1 - Eimco 12-B Mine Car Loader	250.00
1 - Diesel Generator Set, 20 K.W. 3 phase, 220-440 Volts	225.00

Roy W. Fey, M.D., Missoula, Montana

1 - 3/4 ton Chevrolet Pick-up truck	50.00
3 - Mine Cars @ $10.00	30.00
1 - Coppus TV-6 Ventilating Fan	30.00
1 - I.R.D.A.-35 Drifter Drill	30.00
1 - I.R.D. -48 Stoper Drill	20.00
1 - Model D -6 Caterpillar Tractor and Angle Dozer, 152 hrs. @ $8.00	1216.00
Total	$2265.00

COPY

[illegible] Form No. [illegible]-900 I-[illegible]-30

INVENTORY [illegible] Mining Supplies on Hand, December 1, 1[illegible] PAGE 1

SHEET NO. 1 PRICED BY [illegible]

CALLED BY [illegible] DEPARTMENT Mine EXTENDED BY [illegible]

ENTERED BY [illegible] LOCATION [illegible] Mine EXAMINED BY [illegible]

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
1000	50 lb.	50 lbs. 1 1/8 x 8 Color [illegible] Blasting Powder	$1.75	100		500 00	
2000	ft.	2 [illegible] Black Cannon Fuse	.01[illegible]	ft.		20 7[illegible]	
400	100 lb.	4 lb. [illegible] Blasting caps	$0.16	lb.		8 64	
115	lb.	Minore Gelite	.10½	lb.		12.08	
800	gals.	Diesel Oil	.17[illegible]	gal.		24.00	
200	lbs.	2 [illegible] Electric Rod	2.50	each		5 00	
675		Miscellaneous	.05[illegible]	ea.		16 00	
100	626 - ft.	Miscellaneous Pipe	.30	ea.		30 00	
785	(0 -10 ft. [illegible])	20 lb. Miscellaneous	100.	ton		37 50	
88	1/8"x7"	Track Spikes	16¢	lb.		4 00	
25		Regal Starfish Spec. Grease	30¢			7 50	
18		Marfak No. 0 Grease	.210			3 14	
10		Marfak [illegible]	.310			3 10	
5 gal.		Mobil Compressor Oil				4 [illegible]	
5 gal		Rock Drill Lub. Oil				4 00	
30 gal.		Diesel Super Duty Oil (Rock Drill Lub.)	1.330	gal		40 14	
30 gal.		Diesel Super Duty Oil [illegible] 10	1.330	gal		40 04	
2	only	60-100 Lizzie Tube for [illegible] Stoper drill	5.50	ea.		11 00	
4	only	60-100 Cone for [illegible] Stoper drill	2.10	ea.		8 40	
2	only	105-[illegible] Carbide cone or piece for stoper drill	5.00	ea.		10 00	
6	only	97-100 Stop Valve	2.80	ea.		17 50	
1	only	8" Brass Gate Valve				17 [illegible]	
8	only	1½" Brass Gate Valve	12.	ea.		96 00	
1	only	1" Brass Gate Valve				7 00	
3	only	Minore Zero Headlamp	1.10	ea.		3 30	
3	only	Minore Safe Flow Headlamp	1.[illegible]	ea.		3 37	
1	only	DuPont No. 3 Cap [illegible]				1 50	
1	ft.	Wood dep [illegible]				1 00	
						905 78	

FORM 605-72 U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓

INVENTORY [illegible] PAGE [illegible]

SHEET NO. _____ PRICED BY _____

CALLED BY _____ DEPARTMENT _____ EXTENDED BY _____

ENTERED BY _____ LOCATION [illegible] EXAMINED BY _____

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENSION	TOTAL	✓
		Brought forward				795 78	
1	lot	Small bolts and screws				1 00	
200	lbs.	Oats - Horse feed	.0275			5 50	
6500	lbs.	Hay - Horse feed	1 5/6	¢ lb.		78 75	
		Total				$881.03	

FORM 605-72 WI U.S.A.

QUANTITY	UNIT	DESCRIPTION	PRICE	UNIT	EXTENS	TOTAL	✓

Standard Form No. 1034a—Revised
Form prescribed by
Comptroller General, U. S.
September 7, 1950
(Gen. Reg. No. 51, Supp. No. 11)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. .....

Bu. Vou. No. 58

U. S. Department of the Interior, Bureau of Indian
(Department, bureau, or establishment)

Voucher prepared at Klamath, Oregon 12/7/51
(Give place and date)

THE UNITED STATES, Dr., Payee's Account No. ID-[illegible] 30

DMA-9467
Idm-E30

To [illegible]
(Payee)

[illegible] Alder, Klamath, Oregon
(Address) (City) (State)

PAID BY

(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	ARTICLES OR SERVICES (Enter description, item number of contract or Federal supply schedule, and other information deemed necessary) Discount Terms	QUANTITY	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
	October 1951	Per attached certified form [illegible]-104, dated November 15, 1951				2,950	37
PAYMENT: Complete ☐ Partial ☐ Final ☐		Use continuation sheet(s) if necessary					
Shipped from	to	Weight	Government B/L No.		Total	2,950	37

(Payee must NOT use this space)

Differences .....

Account verified; correct for .....

(Signature or initials) .....

2,950	37

Contract No. ID-[illegible] 30 Date 4/24/51 Req. No. Date Invoice Rec'd.

2,950.37

MEMORANDUM

ACCOUNTING CLASSIFICATION (For completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n. or Proj't. Amount	Appropriation Amount
21[illegible]1	Revolving Fund, [illegible] Indian Act, Fiscal Year [illegible]	[illegible]	2,950.37

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. ..... dated ....., 19....., for $..... } on Treasurer of the United States in favor of payee named above.
{ Cash, $....., on ....., 19.....

16—22900a-2

METHOD OF OR ABSENCE OF ADVERTISING

METHOD OF ADVERTISING

1. Advertising in newspapers Yes ☐ No ☐.
2. (*a*) Advertising by circular letters sent to ..... dealers.
   (*b*) And by notices posted in public places Yes ☐ No ☐.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made below.)

ABSENCE OF ADVERTISING

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.
4. Without advertising in accordance with .....
5. Without advertising, it being impracticable to secure competition because of .....

.....

.....

.....

.....

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, as amended.)

U. S. GOVERNMENT PRINTING OFFICE : 1950 O—75805

16—22000a-2

MF-104
(August 1951)

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No. Idm-E -30

Name of Operator KEY - DURAND
Docket No. DMA 946 X
Total Contract Amount $ 66,500.00
Government Participation: 50 % Amount, $ 33,250.00
Distribution of Expenditures for Month of October 1951

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

CERTIFICATION

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

KEY - DURAND
(Name of Company)
413 Montana Bldg., Missoula, Mont.

By Ray W. Key
(Signature of Authorized Official)

November 15, 1951
(Date)

Senior Partner
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

U. S. BUREAU OF MINES
RECEIVED
NOV 23 1951
ALBANY, OREGON

	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(a) Facilities	47.89			~~47.89~~		
(b) Buildings	82.90			~~82.90~~		
(c) Fixtures	52.95			~~52.95~~		
2. Operating Equipment:						
(a) Purchased[1]		134.45	134.45	~~134.45~~		
(b) Rented[2]	889.00	2604.24	4421.24	~~4421.24~~		
(c) Furnished by operator	928.00					
3. Rehabilitation and Repairs:						
(a) Facilities						
(b) Buildings		11.55	11.55	~~11.55~~		
(c) Installations						

16—64068-3

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(d) Fixtures						
4. Labor[3]	2788.98	7359.15	10148.13			
5. Supervision						
6. Supplies						
(a) Timber						
(b) Explosives		805.28	805.28			
(c) Repair Parts	23.32	192.27	215.59			
(d) Other	356.71	1290.62	1647.33			
7. Power	141.72	398.60	540.32			
8. Transportation	290.34	587.64	877.98			
9. Insurance						
(a) Fire						
(b) Public Liability						
(c) Workmen's Compensation	378.94		378.94			
	298.72		298.72			
10. Contract Work						
11. Other (specify)		40.75	40.75			
Exh. B Boarding House & Cook.		1900.00	1900.00			
	357.63		357.63			
Total 6453 26	~~6037.10~~	15324.55	~~21961.65~~ 21777 91			
Deletions Cook 195.00	552.63		552.63			
Adjusted totals 5900 73	~~6084.47~~	15324.55	~~21409.02~~			
Totals previously reported	15324.55		21225 28			
Totals to date 21225 28	~~21409.02~~					

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

NOTE.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by
Entered by
Approved by Glenn A. Reed
Amount approved for payment
Remarks

16—64068-3

U. S. BUREAU OF MINES
RECEIVED
NOV 23 1951
ALBANY, OREGON

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF [illegible] 1951

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	1173.10	1049.00	[illegible]	750.[illegible]	[illegible]	[illegible]	07	[illegible]	[illegible]	[illegible]
Crosscutting	00.00			72.00	132.00	[illegible]	6	56	62	[illegible]
Raising										
Shafts										
Winzes										
Drill holes										
Overburden				177 22	673 22					
Rehabilitation and preparation		600.00		~~[illegible]~~	~~[illegible]~~	[illegible]		[illegible]	[illegible]	[illegible]
Geology and geophysics										
Trenching	6.00	16.00		8.00	[illegible]	[illegible]	2	0	10	165
Sampling and assaying										
Roads and trails	[illegible]	756.00		33.00	[illegible]	[illegible]	52	-0-	32	750
Test pits										
Other (specify) [illegible]	1034.00			00.00	1110.65					
Totals	[illegible]	1417.00	[illegible]	1109 72 ~~[illegible]~~	5900 73 ~~[illegible]~~					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

Key - Drum1 Lead line Project No. [illegible]
I - [illegible]-130

COPY

Progress Report
Month of September, 1951

Narrative

A brief description of the work accomplished and progress made during the period September 1st to September 30th (inclusive) is as follows:

The drift continued for approx. 111 feet during September. Line of advance continued in fault zone and we found that we are following the foot wall of that fault zone and the Shamrock ore body. The right side wall of the drift remained fairly constant in dipping 45-[illegible] degrees to east until last 15 feet when the fault formation seemed to rotate on its horizontal axis and became almost flat! - 10-12 degrees slant or dip still to east. Several small lenses of [illegible] (1-[illegible] inches) were seen thru out the drift running parallel to direction of advance or moving over to "hanging wall" of the fault zone. Ground is of such nature as to require timbering all the way - 22 sets of timbers with almost solid lagging top and sides. However, where the formation "flattened out" it became much firmer and the amount of ground water decreased somewhat.

Small progress was made due to heavy ground, timbering, poor labor and lack of good miners.

Under item 2: There is a labor charge of $210.95 for cutting, logging and hauling fine timbers and lagging material for at least 75 sets of timbers of which 25 sets were used during the month. This was undertaken in order to get some timber ready for the winter months and before the winter snow sets in. There is 1[illegible] hours at Tractor rental at $[illegible].00 per hour charged to this work in addition to the labor charge above.

Under item 3: 5 hours of bulldozing was done in trench 13 to better expose Shamrock vein on its foot wall and to be able to correlate the south drift underground with surface exposures. The tractor and dozer was used also, a total 5 hours during the month, to push and level down dump to keep it clear for dumping ore from mine.

Roy W. Kay

INVENTORY

SHEET NO. 1 PRICED BY

CALLED BY DEPARTMENT EXTENDED BY

ENTERED BY LOCATION EXAMINED BY

QUANTITY	UNIT		DESCRIPTION	PRICE	UNIT	EXTENSION	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]		80.	70
[illegible]	[illegible]	10	[illegible]	[illegible]	[illegible]	11.	[illegible]
110	[illegible]		[illegible]	.10	[illegible]	11.	00
[illegible]	[illegible]		[illegible]	1.76	[illegible]	88.	[illegible]
200	[illegible]		[illegible]	[illegible]	[illegible]	20.	[illegible]
120	[illegible]		[illegible]	.38	[illegible]	46.	00
30	[illegible]		[illegible]	[illegible]	[illegible]	1.	50
30	[illegible]		[illegible]	.216	[illegible]	6.	48
30	100.		[illegible]	.216	[illegible]	6.	48
10	[illegible]		[illegible]	[illegible]	[illegible]	1.	80
1	[illegible]		[illegible]	.04			94
[illegible]	[illegible]		[illegible]			4.	[illegible]
3	[illegible]		[illegible]				
50	[illegible]		[illegible]	[illegible]	[illegible]	88.	[illegible]
2	[illegible]		[illegible]	[illegible]	[illegible]	1.	80
4	[illegible]		[illegible]	[illegible]	[illegible]	3.	00
2	[illegible]		[illegible]	[illegible]	[illegible]	15.	00
6	[illegible]		[illegible]	2.10	[illegible]	17.	60
30	[illegible]		[illegible]	.10	[illegible]	[illegible]	[illegible]
1	only		[illegible]			17.	00
2	only		[illegible]	[illegible]	[illegible]	24.	00
1	only	10	[illegible]			7.	00
3	only		[illegible]	1.10		3.	30
3	only		[illegible]	1.79		[illegible]	[illegible]
1	only		[illegible]			1.	[illegible]
1	only		[illegible]			1.	[illegible]
1	lot		[illegible]			1.	00
						[illegible]	[illegible]

KEY - DURANT LEAD-ZINC PROJECT No. DEA 946-X

MINING SUPPLIES USED MONTH SEPTEMBER, 1951

COPY

Blasting Powder:		
On hand September 1st	32 50 lb. boxes	$348.88
Purchased during month	none	
On hand October 1st	22 50 lb. boxes	239.25
Used month September	10 50 lb. boxes	$109.63
Fuse:		
On hand September 1st	3000 feet	$ 40.35
Purchased during month	6000 feet	80.70
Total	9000 feet	$121.05
On hand October 1st	6000 feet	80.70
Used month September	3000 feet	$ 40.35
Blasting Caps:		
On hand September 1st	400	$ 8.64
Purchased during month	1000	21.60
Total	1400	$ 30.24
On hand October 1st	1000	21.60
Used month September	400	$ 8.64
Carbide:		
On hand September 1st	75 lbs.	$ 7.98
Purchased during month	100 lbs.	10.50
Total	175 lbs.	$ 18.48
On hand October 1st	110 lbs.	11.55
Used month September	65 lbs.	6.93
Mine Wedges:		
On hand September 1st	144	$ 4.92
Purchased during month	1058	35.10
Total	1202	$ 40.02
On hand October 1st	800	26.64
Used month September	402	$ 13.38
Mine Track Ties: 4" x 6" - 3 ft. @ .39		
On hand September 1st	160	$ 62.40
Purchased during month	none	
On hand October 1st	120	46.80
Used month September	40	$ 15.60
Diesel Fuel:		
On hand September 1st	140 Gals.	$ 24.22
Purchased during month	457 Gals.	79.43
Total	497 Gals.	$103.65
On hand October 1st	150 Gals.	25.95
Used month September	447 Gals.	$ 77.70

KEY - DURAND LEAD-ZINC PROJECT No. DRA - 946 X

DISTRIBUTION:

Mine Development: South Drift-Lower Rasa #3 Level-Item 2a

Driving South drift 114 feet Contract @ $12.00 per foot, timbered	$1368.00
Cutting, peeling, loading & hauling mine timbers, pole lagging, girts, etc. (73 sets)	350.95
Sharpening Tools - picks, axes, saws, etc.	20.00
Mine Haulage- feeding & care of horse, repairing harness, etc	30.00
Cleaning ditch & track-main adit	22.30
Compressor Plant: Maintenance and Operation	20.00
Shift Bossing	65.00

Surface Exploration: (Item 3)

Bulldozing in Trench #13, to expose footwall of vein (Shamrock) 8 hours	16.00

Indirect Costs:

General Supervision	166.00
Engineering, Surveying, etc.	76.70
Office Work, Bookkeeping, etc.	179.15
Administration Expense--Trips Missoula, etc.	50.00
Hauling Supplies	83.35
Camp Maintenance: Watchman, Maintenance Building, etc.	50.00

Boarding House:

Labor Cooking	26.00
Total	$2524.05

Certified Correct:

Francis A Hancock
Mining Engineer and Manager

COPY

PAN-LUCKY LEAD-ZINC PROJECT no. DMA 060-X

Accounts Payable and Distribution Month September, 1951

Joe Attwell, Hall, Montana	6.75
Richard G. Tunstill	20.00
E.C. Parker, Hall, Montana	14.25
The Texas Company	62.36
Union Oil Co. of California	7.09
Montana Laboratory Co.	3.00
Fallinsburg Hardware Co.	80.70
Hunt's Service Station, Drummond	101.29
Grogan-Robinson Lumber Co.	55.10
Conrad Buschman	19.60
The Taylor-Knapp Company	7.[illegible]
Miller Machinery Company	16.54
Miller Machinery Company	13.00
Miller Machinery Company	614.00
Miller Machinery Company	250.00
Miller Machinery Company	255.00
Roy E. Ley, P.E.	294.00
B.F. Goodyear Company	80.05
Fischer's Lumber Co.	72.65
The Typewriter Service and Supply	.50
Roy E. Ley, P.E.	27.18
W.A. Hancock	12.37
Jesse Abbott	150.00
Robert Ingersol, Deaville	75.91
Total	$1920.16

DISTRIBUTION:

Mining Equipment Rental	$1049.00
Compressor Plant Operation (fuel oil, lub. oil)	153.09
Mining Supplies and Equipment	429.64
Mine Mules (horse feed, harness repair)	22.70
Small Tools and Equipment	28.75
Transportation, Trucking, oil, gas, etc.	41.60
Assaying	3.00
Surface Exploration, Bulldozing Trench #18	66.15
Item 4, Diamond Drilling Supplies	40.05
Mine Change House	6.55
Camp Buildings	5.20
Roaring House	10.50
Office Supplies	.55
Engineering Maps	1.00
Traveling Expense	24.60
Telephone	.70
Postage	.88
Total	$1926.16

COPY

Equipment Rent

FC- 1		$ 64.00
4	$50.00	
5	30.00	
6	30.00	
7	30.00	
8	20.00	160.00

Rental

9	$280.00	
10	225.00	
Compressor	414.00	889.00
		$1049.00

COPY

Standard Form No. 1034a—Rev.
Form approved by
Comptroller General, U. S.
May 26, 1938
(Amended August 15, 1941)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

COPY

D. O. Vou. No. _____
Bu. Vou. No. DMA-18

GENERAL ACCOUNTING OFFICE PREAUDIT
Certified for payment in the sum of $_____
Comptroller General of the United States
By _____

U. S. Dept. of the Interior, Bureau of Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Ore. 10/3/51
(Give place and date)

THE UNITED STATES, Dr.,

To Key-Durand,
(Payee)

Address 413 Montana Building, Missoula, Montana
Payee's Account No. I-DMA-E30

PAID BY
(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	Articles or Services (Enter description, item number of contract or general supply schedule, and other information deemed necessary) Terms _____% Discount Cash _____ days	Quantity	UNIT PRICE Cost	UNIT PRICE Per	AMOUNT Dollars	AMOUNT Cts.
		Brought forward from continuation sheet(s)					
	8/1-31/51	Per certified Form MF-104, dated September 10, 1951 attached				2,260	90

Shipped from _____ to _____ Weight _____ Government B/L No. _____ Total 2,260 90

(Payee must NOT use this space)
Differences _____
Account verified; correct for 2,260 90
(Signature or initials) _____

Contract No. I-DMA-E30 Date 6/28/51 Req. No. _____ Date _____ Invoice Rec'd _____

2,260.90

MEMORANDUM

ACCOUNTING CLASSIFICATION (for completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n or Proj't Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	2,260.90	2,260.90

Allotment symbol	Amount	Obligations liquidated	COST ACCOUNT Symbol	COST ACCOUNT Amount	OBJECTIVE CLASSIFICATION Symbol	OBJECTIVE CLASSIFICATION Amount

Paid by { Check No. _____ dated _____, 19____, for $_____ } on Treasurer of the United States in favor of payee named above.
{ Cash, $_____, on _____, 19____, Payee_____ }
(Sign original only)

Per _____
Title _____

* When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary", or "Treasurer", as the case may be.
† If the ability to certify and authority to approve are combined in one person, one signature only is necessary; otherwise the approving officer will sign in the blank space below "Approved for $_____", and over his official title.

16—22900a-1

METHOD OF OR ABSENCE OF ADVERTISING

(Section 3709 of the Revised Statutes)

1. After advertising in newspapers.

2. (*a*) After advertising by circular letters sent to _____ dealers.

   (*b*) And by notices posted in public places.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made. The notation on the certificate on the face of the voucher must be "2(*a*)(*b*)" or "2(*a*)", depending on whether or not notices were posted.)

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.

4. Without advertising in accordance with _____

5. Without advertising, it being impracticable to secure competition because of _____

_____

_____

_____

_____

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, Supplement No. 6, General Accounting Office, Aug. 20, 1930.)

U. S. GOVERNMENT PRINTING OFFICE: 1946 O-88934

16—22900-1

MF-104
(August 1951)
April

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No.
Idm-E

Name of Operator Key-Durand
Docket No. DMA DMA 946-X
Total Contract Amount $ 66,500.00
Government Participation: 50 % Amount, $
Distribution of Expenditures for Month of August

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.

CERTIFICATION

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

KEY-DURAND
(Name of Company)

By /S/ Roy W. Key
(Signature of Authorized Official)

September 10, 1951
(Date)

Senior Partner
(Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only		
				Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(*a*) Facilities						
(*b*) Buildings						
(*c*) Fixtures						
2. Operating Equipment:						
(*a*) Purchased[1]						
(*b*) Rented[2]						
(*c*) Furnished by operator						
3. Rehabilitation and Repairs:						
(*a*) Facilities						
(*b*) Buildings						
(*c*) Installations						

MONTHLY SUMMARY COST STATEMENT

Distribution of Expenditures for Month of August 1951

Item	Monthly Total	Totals Previously Reported	Totals to Date
Wages and salaries	1355.11	1695.99	3051.10
Equipment purchase		134.45	134.45
Equipment rental	1049.00	442.24	1491.24
Buildings			
Explosives	475.35	329.93	805.28
Repair parts	51.02	112.50	163.52
Other supplies	101.77	678.41	780.18
Power	117.89	123.47	1 241.36
Transportation	116.06	382.48	498.54
Withholding taxes			
Compensation insurance			
Other insurance			
Contract work	1250.00	560.00	1810.00
Other (specify)	5.61	19.06	24.67
		1900.00	1900.00
TOTAL	4521.81	6378.53	10900.34
Totals previously reported	6378.53		
Totals to date	10900.34		

DISTRIBUTION OF WAGES AND SALARIES FOR MONTH OF August 1951

Type	Number	Man-Shifts	Rate	Total
Miners	5	37	12.30	445.11
Muckers				
Trammers				
Timbermen				
Pumpmen				
Hoistmen				
Surface				
Samplers				
Assayers				
Shift bosses				
Mechanics				
Electricians				
Blacksmiths				
Carpenters				
Drill runners				
Drill helpers				
Teamsters				
Manager Engineer	1		500.00 Mo.	500.00
Superintendent				
Engineers				
Geologists				
Bookkeeper	1		100.00 Mo.	100.00
Foreman	1		300.00 Mo.	300.00
Clerks				
xxxx Stenographers Contract	5	107 Ft.	$10.00 ft.	1070.00
Other		15 Ft.	12.00 ft.	180.00
TOTAL				$2605.11

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(*d*) Fixtures						
4. Labor [3]						
5. Supervision						
6. Supplies						
(*a*) Timber						
(*b*) Explosives						
(*c*) Repair Parts						
(*d*) Other						
7. Power						
8. Transportation						
9. Insurance						
(*a*) Fire						
(*b*) Public Liability						
(*c*) Workmen's Compensation						
10. Contract Work						
11. Other (specify)						
Total						
Deletions						
Adjusted totals						
Totals previously reported						
Totals to date						

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

Note.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by _____

Entered by _____

Approved by _____

Amount approved for payment _____

Remarks _____

_____

_____

16—64068-3

EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF August 1951

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Drifting	2519.75	1049.00	577.12	290.58	4436.45	Feet	126	- 0-	126	800
Crosscutting								56	56	800
Raising										
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation	85.36				85.36	Feet	75	800	875	900
Geology and geophysics										
Trenching										
Sampling and assaying										
Roads and trails										
Test pits										
Other (specify)										
Totals	2605.11	1049.00	577.12	290.58	4521.81					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE

KEY-DURAND MINES PROJECT NO. DM4 946-X

INVENTORY SUPPLIES ON HAND September 1, 1951 Page 1
(From supplies purchased during months July & August, 1951)

Sheet No. 1 Priced by F. A. H.
Called by F. A. H. Department Mine Extended by F. A. H.
Entered by F. A. H. Location Mine Checked by F. A. H.

Quantity	Unit	Number	Description	Price	Extensions
1690 lbs.	50# box	32	1x8 Velex #3 Blasting Powder	21.75	$ 348.00
3000 ft.		1 spool	Fuse	13.45	40.35
400	100 box	4	8% Blasting Caps	7.16	28.64
140	Gals		Diesel Fuel	.173	24.22
5	Gals		Gasoline (Comm. Starting Motor)	.270	1.35
75 lbs.	lbs.		Miners Carbide	10.64	7.98
1/35	lbs.	1	Marfak #0 Grease		7.65
1/35	lbs.	1	Marfak H.D. #2 Grease		7.35
7	lbs.	1	Mobil Starfak Special Grease	.32	2.24
1/35	lbs.	1	Mobil Starfak Special Grease		10.50
13	lbs.	1	Thuban 80		2.00
3	Gals.		Mavolina Motor Oil #20	.94	2.82
5	Gals.	1	Mobil Compressor Oil		4.75
2	only	762-R48	Rifle Butt for I.R.- R. 48 Stoper Drill	5.90	11.80
4	only	#60R48	Pawls for I.R.-R 48 Stoper Drill	2.13	8.50
2	only	B168R48	Assembly and Complete R. 48 Stoper Drill	5.00	10.00
6	only	27R48	Water Tubes, R 48 Stoper Drill	2.90	17.40
100	lbs.	5/8 x 5	Track Spikes	16.00	16.00
1	2"		Brass Gate Valve (new)		17.00
1	1½"		Brass Gate Valve (new)		24.00
1	1"		Brass Gate Valve (new)		7.00
2			Miners Axe Handles	1.10	3.30
2			Miners Drift Pick Handles	1.93	3.87
1			Leg Crimper		1.00
1	lot		Small Bolts and Washers		1.00
30	4"x6"	16'	Tie Timber 960 ft. $65.00		62.40
			Total		$661.35

[illegible] - [illegible] [illegible] [illegible] 3-[illegible]

[illegible]

[illegible] August, 1951

[illegible]

Brief description of the work accomplished [illegible] as follows:

[illegible] work [illegible] to explore [illegible] level.

[illegible] from [illegible] it; [illegible] it [illegible]; [illegible] used [illegible] line. [illegible] 1 of [illegible] and cost [illegible] for labor.

[illegible] 1950, [illegible] 195 feet [illegible] driven in the south [illegible] this report.

The first 4 feet [illegible] by [illegible] later to square up [illegible] contract cost. The next 107 feet [illegible] by [illegible] at $20.00 [illegible] for labor only, and the last 15 feet by contract at $18.[illegible] per [illegible] for labor only.

[illegible] 18 [illegible] and without fault [illegible] contract [illegible], but [illegible] increases [illegible] eventually caused [illegible] and save, [illegible] necessary to [illegible] and also put [illegible] for timber. Forty [illegible] feet drift sets, on five foot centers were [illegible] A [illegible], and [illegible] contract [illegible] to [illegible] 15 feet of timbered drift [illegible] labor.

The [illegible] for the [illegible] by labor at $[illegible] and [illegible] which included [illegible].

The drift [illegible] hours [illegible] the [illegible] on which from 1 foot to 2 feet of [illegible] were [illegible]. [illegible] the water [illegible] 18.

The [illegible] of [illegible] dis-[illegible], but [illegible] circumstances. [illegible] and [illegible].

In order to [illegible] accurate [illegible] the [illegible] monthly [illegible] including [illegible].

COPY

[illegible] with all [illegible] [illegible] last week, which necessitates making up an inventory of the [illegible] on the first of each month.

A complete [illegible] is not ready to accompany this report but we are sending the [illegible] distribution and the inventory [illegible] on hand. [illegible] only of the August payroll. We will send a complete report for the months of July and August [illegible] as soon as they are [illegible].

Roy W. Key

COPY

KEY-DURAND MINES PROJECT NO. DMA 946-X

List & Distribution of Accounts Payable Month August, 1951

for Equipment Rental and Supplies

Miller Machinery Co.—Mining Machinery Rentals	$ 889.00
Montana Hardware Co.—I.R.R-48 Stoper Repair parts	20.52
Fischer Lumber Yard —Miscellaneous Supplies	100.25
Montana Laboratory Co.—Assaying	5.25
F. A. Hancock — Travel Expense	30.00
H. Earl Clack Co. — Diesel Fuel	58.13
Durf's Service Station — Diesel Fuel	50.51
The Texas Company — Oil & Grease	14.75
Ed Lanham — 4 bales Hay	2.00
Eugene F. Tunstill — Trucking Hauling Diesel Fuel	5.00
The Typewriter Service & Supply Co.— Office Supplies	3.10
Philipsburg Hardware — Powder, Fuse, Carbide, etc.	489.85
Roy W. Key, M. D. — Equipment Rentals	160.00
Roy W. Key, M. D. — Travel Expense	36.90
Donald N. Davis, Texas Service Station — Gasoline	4.20
Donald N. Davis, Texas Service Station —Chev. pickup serv.	2.56
Hagen Welding & Repair — Welding Mine Timber Truck	20.50
Miller Machinery Co.—Pipe fittings	6.18
Interstate Lumber Co.— Mine Wedges	17.64
Cash — Postage	.36
Total	$1916.70

Distribution

Mining Equipment Rental	$1049.00
Compressor Plant Operation—Fuel oil, oil, etc.	117.89
Rock Drill Repairs	20.52
Mine Equipment—Timber Truck	20.50
Mine Haulage-Harness Repairs & Horse feed	9.65
Mine Supplies—Powder, fuse, carbide, wedges, etc.	528.01
Mine Small Tools	38.11
Transportation—Hauling supplies, etc.	35.31
Engineering Supplies—Hot Shot Battery for Mineral Light	3.35
Camp Expense	4.55
Travel Expense	71.10
Office Supplies	3.10
Assaying	5.25
Camp Buildings—Repairs	10.00
Postage	.36
Total	$1916.70

MINE EQUIPMENT RENTALS:

Miller Machinery Co.

315 Cu. Ft. Northington Compressor	$414.00
Eimeo 12-B	250.00
Diesel Generator Set	225.00
Total	$889.00

R. W. Key, M.D.

#4 — Chev. Pickup Truck	$ 50.00
#5 — 3 Mine Cars	30.00
#6 — Air Blower	30.00
#7 — Drifter Drill	30.00
#8 — Stoper Drill	20.00
Total	$160.00

Mine Explosives Account

Date			Powder		Fuse	Caps		Miners	
1951			1¼"x8"	Gelex #3	T. Tape	6X		Carbide	
July 16	Philipsburg Hardware Co.	1-	$ 13.00	3000 -	40.35	1000 -	21.60	100-	10.64
		15-	163. 13	3000 -	40.35				
Aug. 2	Philipsburg Hardware Co.	40-	435.00	3000 -	40.35			100-	10.64
	Total purchased	56	611.13	9000	121.05		21.60	200	21.28
	Used Month July	7	77.38	2000	26.90	200	4.32	50	5.32
	Bal. Aug. 1	49	533.75	7000	94.15	800	17.28	150	15.96
	Used Month August	17	184.87	4000	53.80	400	8.64	75	7.98
	Bal. Sept. 1	32	348.88	3000	40.35	400	8.64	75	7.98

Standard Form No. 1034a—Rev.
Form approved by
Comptroller General, U. S.
May 26, 1938
(Amended August 15, 1941)

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

D. O. Vou. No. _____
Bu. Vou. No. DMA-3

GENERAL ACCOUNTING OFFICE PREAUDIT
Certified for payment in the sum of $_____
Comptroller General of the United States
By _____

U. S. Dept. of the Interior, Bureau of Mines
(Department, bureau, or establishment)

Voucher prepared at Albany, Oregon, August 23, 1951
(Give place and date)

THE UNITED STATES, Dr.,

To Key-Durand
(Payee)

Address 413 Montana Bldg., Missoula, Montana
Payee's Account No. _____

PAID BY
(For use of Paying Office)

No. and Date of Order	Date of Delivery or Service	Articles or Services (Enter description, item number of contract or general supply schedule, and other information deemed necessary) Terms _____% Discount Cash _____ days	Quantity	Unit Price Cost	Unit Price Per	Amount Dollars	Amount Cts.
		Brought forward from continuation sheet(s)					
	June 28 - July 31, 1951	Per certified Form MF-104, dated 10 August 1951, attached				3,189	26

Shipped from _____ to _____ Weight _____ Government B/L No. _____ Total 3,189 26

(Payee must NOT use this space)
Differences _____
Account verified; correct for 3,189 26
(Signature or initials) W. R. L.

Contract No. I-DMA-E30 Date 6/28/51 Req. No. _____ Date _____ Invoice Rec'd _____

3,189.26

MEMORANDUM

W. Rulon Lee
Authorized Certifying Officer

ACCOUNTING CLASSIFICATION (for completion by Administrative Office)

Appropriation, limitation, or project symbol	Appropriation title	Limit'n or Proj't Amount	Appropriation Amount
14X4401	Revolving Fund, Defense Production Act, Interior	3,189.26	3,189.26

Allotment symbol	Amount	Obligations liquidated	Cost Account Symbol	Cost Account Amount	Objective Classification Symbol	Objective Classification Amount

Paid by { Check No. _____ dated _____, 19____, for $_____ } on Treasurer of the United States in favor of payee named above.
{ Cash, $_____, on _____, 19____, Payee _____ (Sign original only)

* When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary", or "Treasurer", as the case may be.
† If the ability to certify and authority to approve are combined in one person, one signature only is necessary; otherwise the approving officer will sign in the blank space below "Approved for $_____", and over his official title.

Per _____
Title _____

16—22900a-1

METHOD OF OR ABSENCE OF ADVERTISING

(Section 3709 of the Revised Statutes)

1. After advertising in newspapers.

2. (*a*) After advertising by circular letters sent to _____ dealers.

   (*b*) And by notices posted in public places.

   (If notices were not posted in addition to advertising by circular letters sent to dealers, explanation of such omission must be made. The notation on the certificate on the face of the voucher must be "2(*a*) (*b*)" or "2(*a*)", depending on whether or not notices were posted.)

3. Without advertising, under an exigency of the service which existed prior to the order and would not admit of the delay incident to advertising.

4. Without advertising in accordance with _____

5. Without advertising, it being impracticable to secure competition because of _____

_____

_____

_____

_____

(Here state in detail the nature of the exigency or circumstances under which the securing of competition was impracticable under 3 and 4)

NOTE.—The above form "Method of or Absence of Advertising" is to be used when purchases are made or services secured under proper authority without written agreement in any form. In case of a written agreement (formal contract, proposal, and acceptance, or less formal agreement) Standard Form No. 1036—Revised should be used for abstracting the method of or absence of advertising and award of contract. (See General Regulations No. 51, Supplement No. 6, General Accounting Office, Aug. 20, 1930.)

U. S. GOVERNMENT PRINTING OFFICE: 1946 O-88934 16—22900-1

MF-104
(August 1951)

April

3

Budget Bureau No. 42-R1036.2.
Approval Expires 6-30-52.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Contract No.
Idm-E

Name of Operator Key-Durand
Docket No. DMA DMA 946-X
Total Contract Amount $ 66,500.00
Government Participation: 50 % Amount, $
Distribution of Expenditures for Month of 6/28 - 7/31, 1951

STRATEGIC AND CRITICAL MINERAL EXPLORATION PROGRAM
OPERATOR'S MONTHLY PROGRESS REPORT

Operators are to submit monthly reports to the designated field representative of the Defense Minerals Administration. Reports are to be submitted in quadruplicate prior to the 15th day of the month following the reporting period.

Narrative.—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered is to be furnished.

Maps.—Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

Cost Accounts.—All applicable parts of this form are to be filled in. This report will form the basis for payments of the Government's participating share of expenses. Audits of accounts may be made from time to time.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.
MAR 10 9 00 AM '52

CERTIFICATION

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

Key-Durand (Name of Company)

By /s/ Roy W. Key (Signature of Authorized Official)

10 August 1951 (Date)

Senior Partner (Title)

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

16—64068-3

MONTHLY SUMMARY COST STATEMENT

List as Shown on Exhibits Attached to Contract

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only		
				Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
1. Fixtures and Improvements:						
(*a*) Facilities						
(*b*) Buildings						
(*c*) Fixtures						
2. Operating Equipment:						
(*a*) Purchased[1]						
(*b*) Rented[2]						
(*c*) Furnished by operator						
3. Rehabilitation and Repairs:						
(*a*) Facilities						
(*b*) Buildings						
(*c*) Installations						

MONTHLY SUMMARY COST STATEMENT

Distribution of Expenditures for Month of 6/28 - 7/31, 1951

Item	Monthly Total	Totals Previously Reported	Totals to Date
Wages and salaries	$1695.99		$1695.99
Equipment purchase	134.45		134.45
Equipment rental	442.24		442.24
Buildings			
Explosives	329.93		329.93
Repair parts	112.50		112.50
Other supplies	678.41		678.41
Power	123.47		123.47
Transportation	382.48		382.48
Withholding taxes			
Compensation insurance			
Other insurance			
Contract work	560.00		560.00
Other (specify)	19.06		19.06
As per Exhibit "B"	1900.00		1900.00
TOTAL	$6378.53		$6378.53
Totals previously reported			
Totals to date	$6378.53		$6378.53

DISTRIBUTION OF WAGES AND SALARIES FOR MONTH OF _____

Type	Number	Man-Shifts	Rate	Total
Miners	6	82¼	$12.30(1)	$ 1045.99
Muckers				
Trammers				
Timbermen				
Pumpmen				
Hoistmen				
Surface (Cook) deleted				
Samplers				
Assayers				
Shift bosses				
Mechanics				
Electricians				
Blacksmiths				
Carpenters				
Drill runners				
Drill helpers				
Teamsters				
Manager Engineer	1	1/2 Mo.	$ 500.00 Mo.	250.00
Superintendent				
Engineers				
Geologists				
Bookkeeper				
Foreman	1	1 Mo.	$ 400.00 Mo.	400.00
Clerks				
Stenographers				
Other Contract			10.00 Ft.	560.00
TOTAL				$2,255.99

(1) included 5.66 shift at overtime.

MONTHLY SUMMARY COST STATEMENT—Continued

Item	Monthly Total	Totals Previously Reported	Totals to Date	For Government Use Only		
				Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(*d*) Fixtures						
4. Labor [3]						
5. Supervision						
6. Supplies						
(*a*) Timber						
(*b*) Explosives						
(*c*) Repair Parts						
(*d*) Other						
7. Power						
8. Transportation						
9. Insurance						
(*a*) Fire						
(*b*) Public Liability						
(*c*) Workmen's Compensation						
10. Contract Work						
11. Other (specify)						
Total						
Deletions						
Adjusted totals						
Totals previously reported						
Totals to date						

[1] Enter amount paid during month toward total purchase price.
[2] Payments for rental of equipment or prorated depreciation on equipment owned by contractor.
[3] Submit copy of the Social Security form filed under the Old Age Insurance system showing complete wage and salary data or furnish copy of payroll sheet giving same data.

Note.—Indicate that portion of supervisory, office, and engineering salaries that is chargeable to this project.

FOR GOVERNMENT USE ONLY

Checked by _____

Entered by _____

Approved by _____

Amount approved for payment _____

Remarks _____

_____

_____

16—64068-3

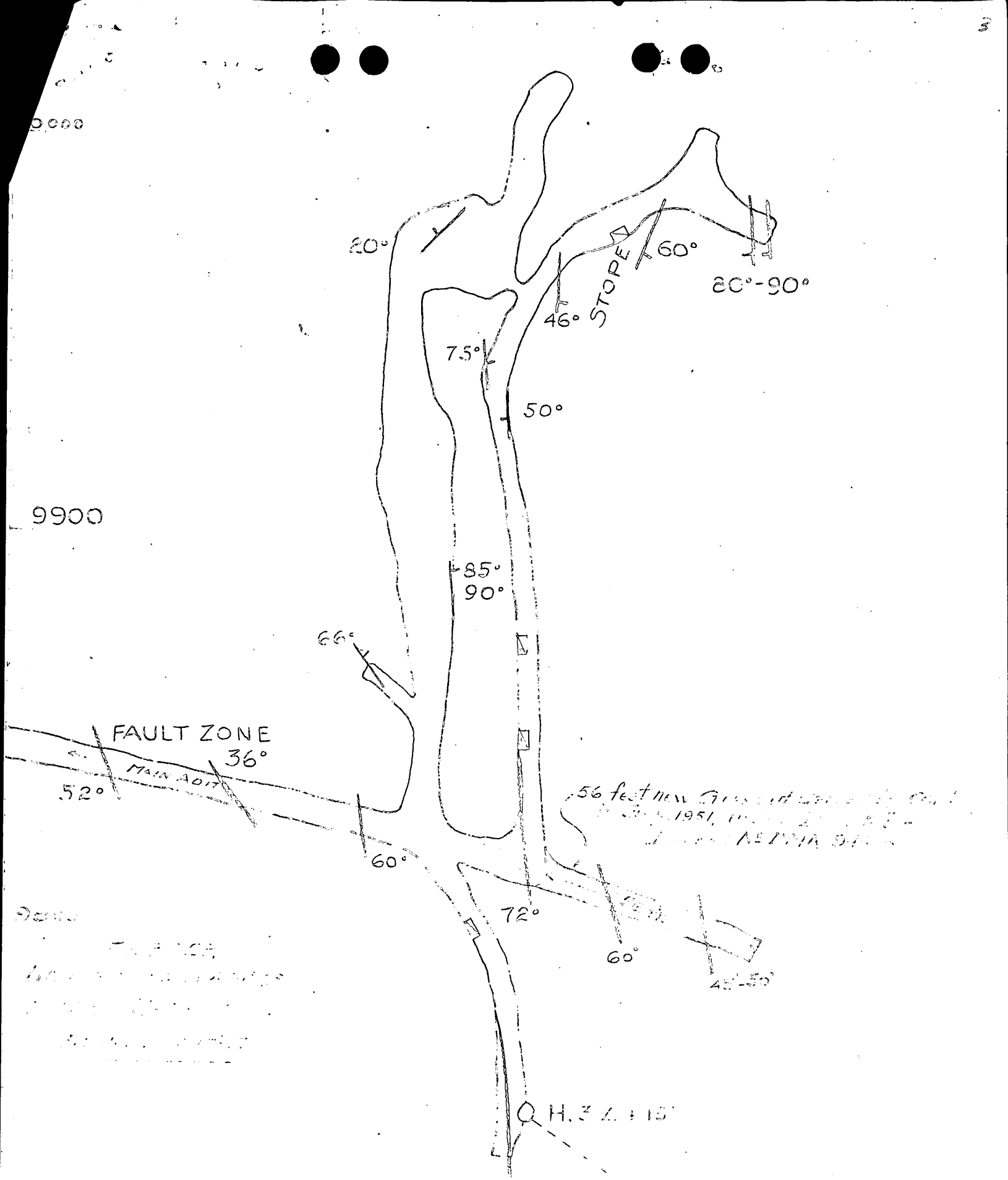
EXPLORATION UNIT COST AND PROGRESS REPORT FOR MONTH OF 6/28 - 7/31, 1951

(Supply Data Below Applicable Only to Your Operations)

Item	Costs					Progress [4]				
	Wages [1] and salaries	Equipment [2]	Supplies	Other [3]	Total	Unit	Units this month	Units previously reported	Units to date	Units authorized by contract (Exhibit A)
Contract Work & Rental										
Drifting										
Crosscutting	743.33	590.92	637.17	95.87	1997.29	Feet	56	0	56	800' X-Cutting 2B
Raising										
Shafts										
Winzes										
Drill holes										
Overburden										
Rehabilitation and preparation	1512.66	55.77	866.15	46.66	2481.24	"	800	0	800	900
Geology and geophysics										
Trenching										
Sampling and assaying										
Roads and trails										
Test pits										
Other (specify) Exhibit B		1900.00			1900.00					
Totals	$2255.99	$2476.69	$1503.32	$142.53	$6378.53					

[1] Prorate supervisory, engineering, and office salaries in proportion to man-shifts of direct labor.
[2] Prorate charges for equipment that is not exclusively for one type of job (such as compressors) against authorized units of work in each category.
[3] Where entries in the "Other" column (above) are more than 25 percent of the total expenditures, a breakdown of this item should be made.
[4] Specify whether feet, cubic feet, acres, miles, etc.

16—64068-3 U. S. GOVERNMENT PRINTING OFFICE


9900
20°
STOPE
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80°-90°
46°
75°
50°
85°
90°
66°
FAULT ZONE
36°
MAIN ADIT
52°
60°
72°
60°
45-50°

Dw B-946 X

WESTERN MONTANA EXPLORATION
& DEVELOPMENT CO. INC.
412 WESTERN BANK BLDG.
MISSOULA, MONTANA, DMEA-946X,
I-DMA-E30, DMPA-2461

Summary Geologic Report on the Wasa-Shamrock Ore Body

by

Albert R. Glockzin

April 18, 1953

RECEIVED
APR 28 1953
U. S. G. S.
SPOKANE, WASH.

WESTERN MONTANA EXPLORA
& DEVELOPMENT CO. INC.
412 WESTERN BANK BLDG.
MISSOULA, MONTANA, DMEA-946X,
I-DMA-E30, DMPA-2461

STRATIGRAPHIC CONSIDERATIONS

The upper Paleozoic and Mesozoic stratigraphic section in the vicinity of the Vasa-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 Bulky Gulch.

Bulky 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'

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'

Bird 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

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

COPY

body of granitic material which was called 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 strike 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 Wasa-Shamrock ore body is most probable.

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.

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 Mass-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.

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 well 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

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.

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

RECEIVED

APR 23 1953

U.S.G.S.

WESTERN MONTANA EXPLORATION & DEVELOPMENT C., INC.

KEY-DURAND LEAD-ZINC PROJECT NO. LMA-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 M. 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 LMA 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 LMA 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 LMA 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 cross-cutting 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, 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 Tramer would have reduced the cost of mine

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haulage by at least 50%.

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 addition 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 U.S. 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, 2, 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 process

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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 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	873.03
Mining Equipment Purchased (Cars, Air Receivers, etc.)	2,378.54
Small Tools & Equipment Purchased	289.74
Mining Supplies (Explosives, timber, ties, steel, etc.)	7,338.71
Pipe, fittings, valves, Rails, switches, etc. Purchased	1,819.49

 Cont'd. Cost sheet of Operation November 1, 1950 to Jan. 8,

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 & Constr. 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

Page 3 Cont'd. Cost sh[illegible]t of Operation November 1, [illegible]950 to January 8, 1953

Boarding House Equipment		$ 186.51
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.F.E. & D.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:
Frances N. Hancock

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 Water and air 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 & ditch, 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 Buildings, cutting, wood for fuel, snow removal, etc.	1,805.05	1.058
Assaying	202.87	.119
General Supervision & Shift Bossing (75% amount charged)	3,108.17	1.82
Carried Forward	$63,468.20	$34.9115

STATEMENT SHOWING COST PER FOOT of the MAIN ITEMS CHARGED for Drifting, crosscutting, raising andDrilling Long Holes (continued):

ITEMS CHARGED TO WORK	TOTAL COST CHG'D	COST PER FOOT
Brought Forward	$63,468.20	$34.9115
Engineering: Surveying, mapping, etc. (75% amount charged)	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 & 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, making 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.

Certified Correct:
Francis A. Hanes Jr

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 & Equip. 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 (Cooking)	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

Mk.
G.A.N.

Progress Report No. 1

on

The Geologic Analysis

of

The Wasa-Shamrock

Ore Bodies

by

Albert R. Glockzin

COPY

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.

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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.

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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

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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

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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.

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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 o 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.

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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 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.

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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

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DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM, REGION II

FINAL REPORT

Contract Idm-E30

by

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

Docket No.:	DMA 964X
Commodity:	Lead-Zinc
Contract date:	June 28, 1951
Completion date:	December 1952

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 $85,850 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. 6K 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.

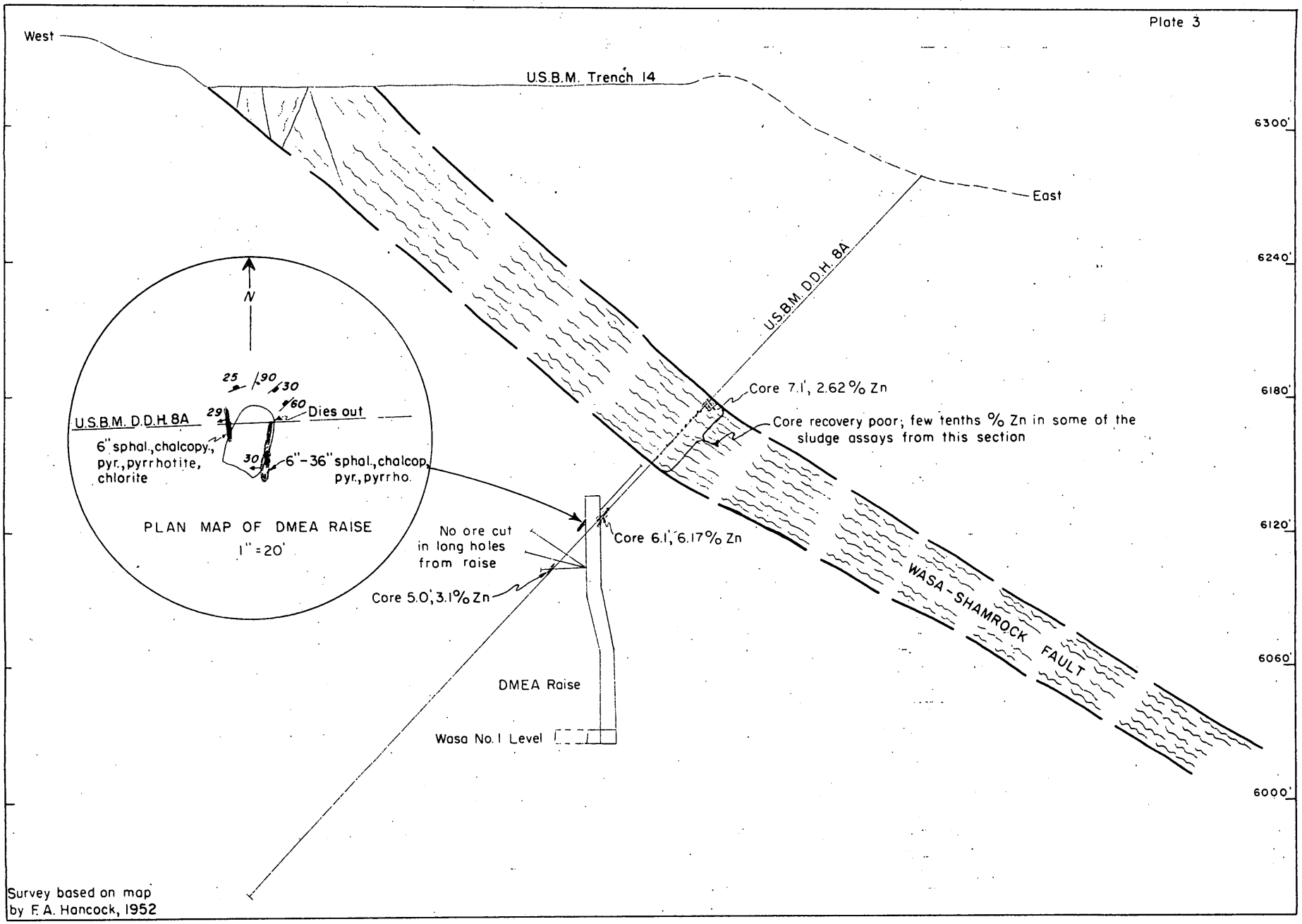
The Bureau of Mines diamond drilling to test the main Wasa ore body at depth has shown it to continue to a depth of 70 feet and possibly to a depth of 200 feet below the Wasa No. 1 adit level. Undoubtedly, additional exploration could be undertaken to further test this body at depth by mine openings. 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

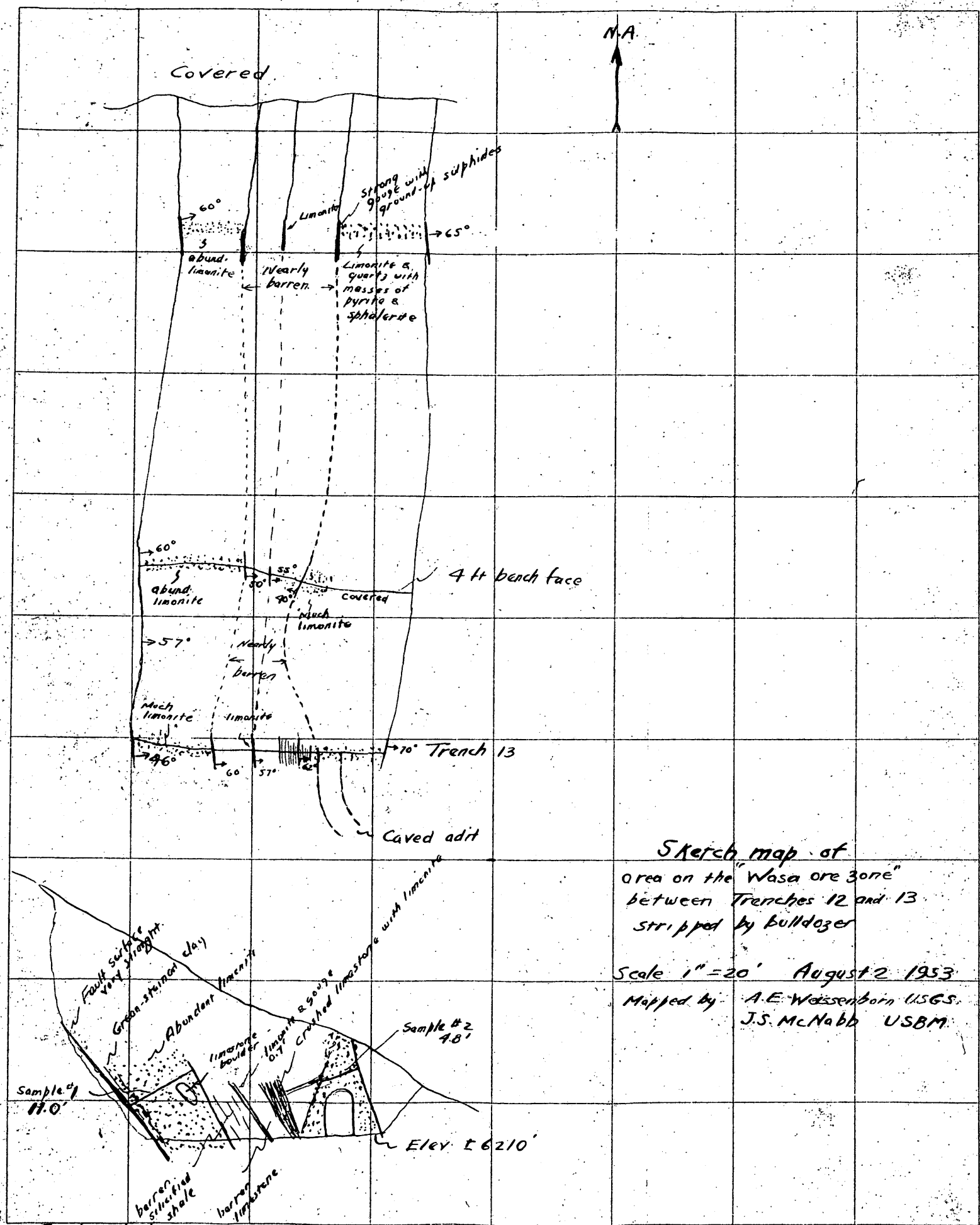
Items of Cost	Units Completed	Total Cost	Cost/unit
Rehabilitation and cleanup of lower Wasa Adit (Wasa No. 3)	630.0 feet	$ 4,118.14	$ 6.54
Laterals and drifts on Wasa No. 3 level	927.0 feet	38,065.62	41.06
Crosscuts and slabbing for turns (Wasa No. 3)	666.5 feet	27,366.45	41.06
Timbering of workings 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

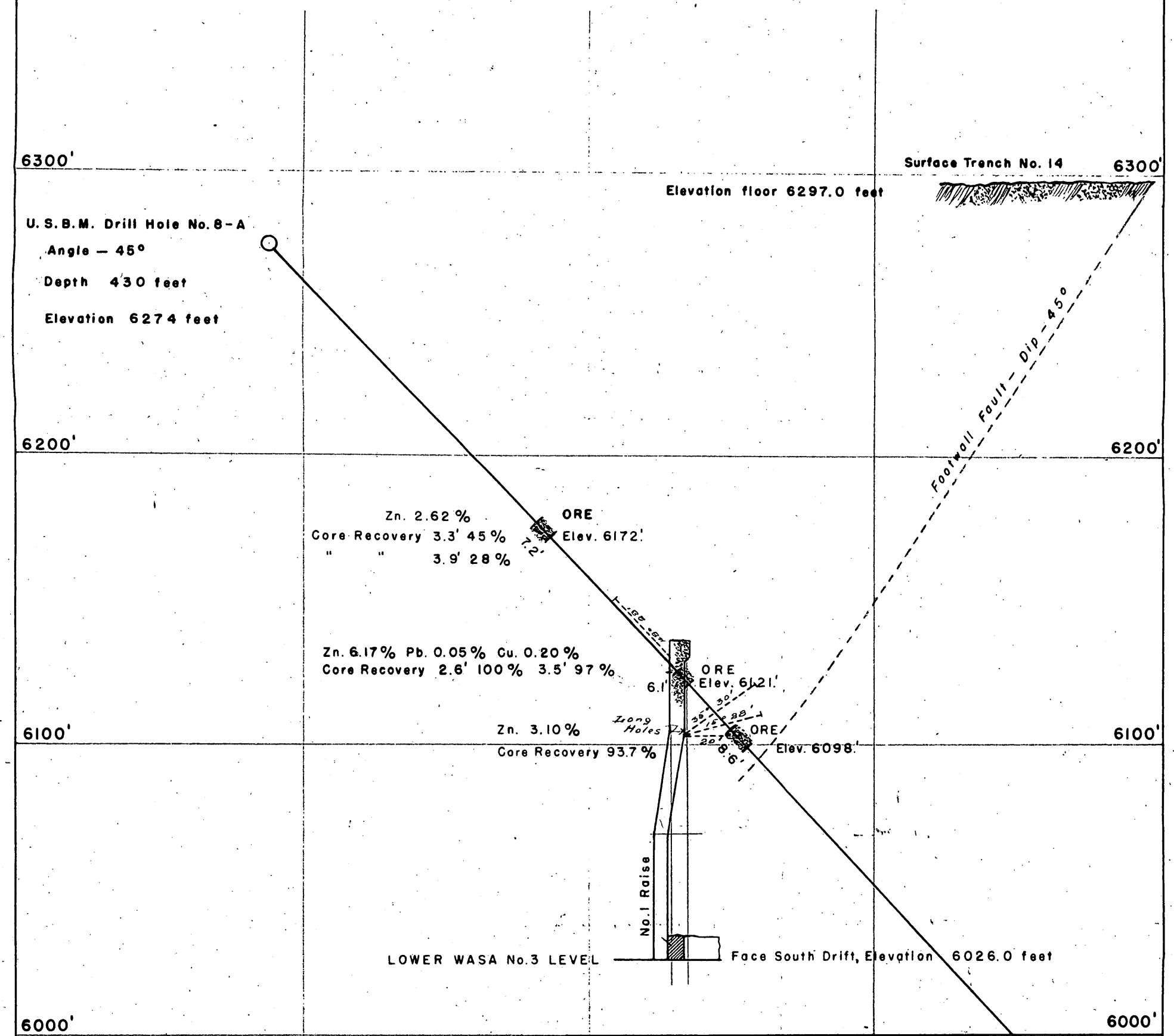
Mapped by A.E. Weissenborn USGS. J.S. McNabb USBM

Section looking North, South end of Trench No. 13

"ALBANENE" No. 1PSM K&E CO., N.Y. REG. U.S. PAT. OFF

WESTERN MONTANA EXPLORATION & DEVELOPMENT CO., INC.

Key-Durand Lead-Zinc PROJECT No. DMA 946X-1-DMA-E30



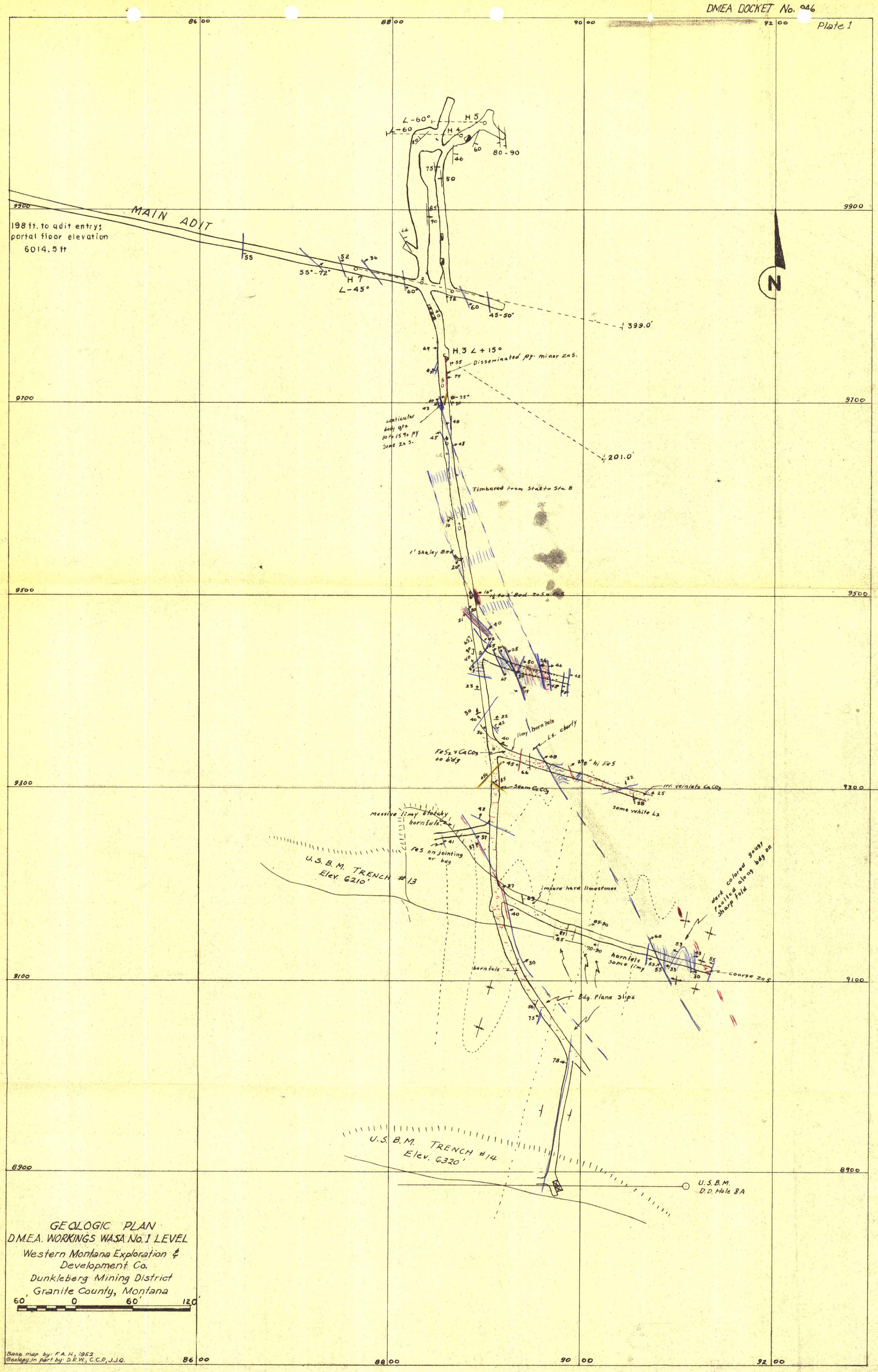
CROSS SECTION

U.S.B.M. Drill Hole No. 8-A & Surface Trench No. 14
Showing Face South Drift Lower Wasa No. 3 Level
and No. 1 Raise

SCALE:

0 40 80 120

Francis A. Hancock, Mining Engineer



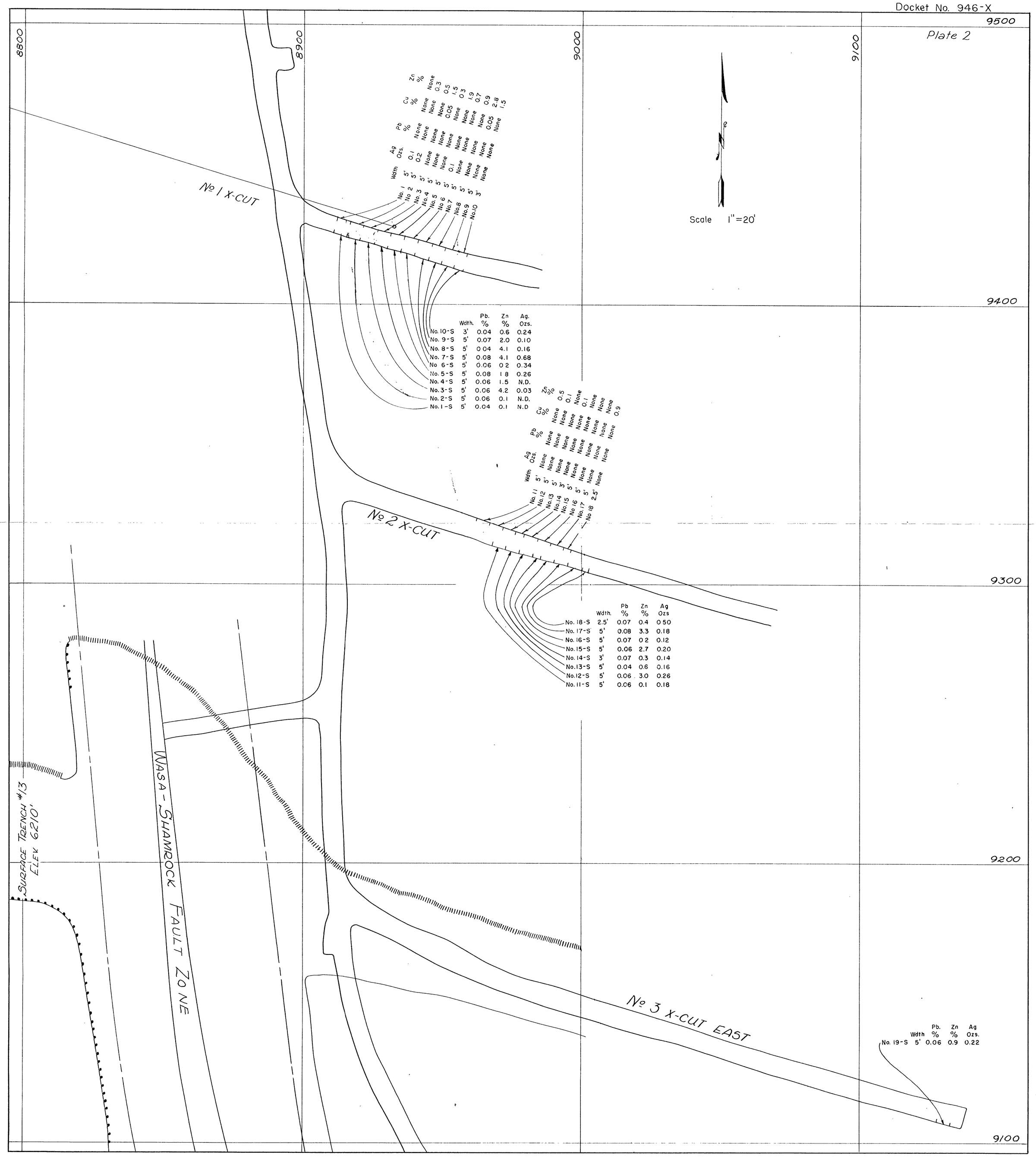
GEOLOGIC PLAN
D.M.E.A. WORKINGS WASA No. 1 LEVEL
Western Montana Exploration & Development Co.
Dunkleberg Mining District
Granite County, Montana

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

Plate 2



ASSAY PLAN OF No. 1, No. 2 & No. 3 CROSSCUTS OF KEY-DURAND DMEA PROJECT No. 1-DMA-30
(WASA MINE)
GRANITE COUNTY, MONTANA

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

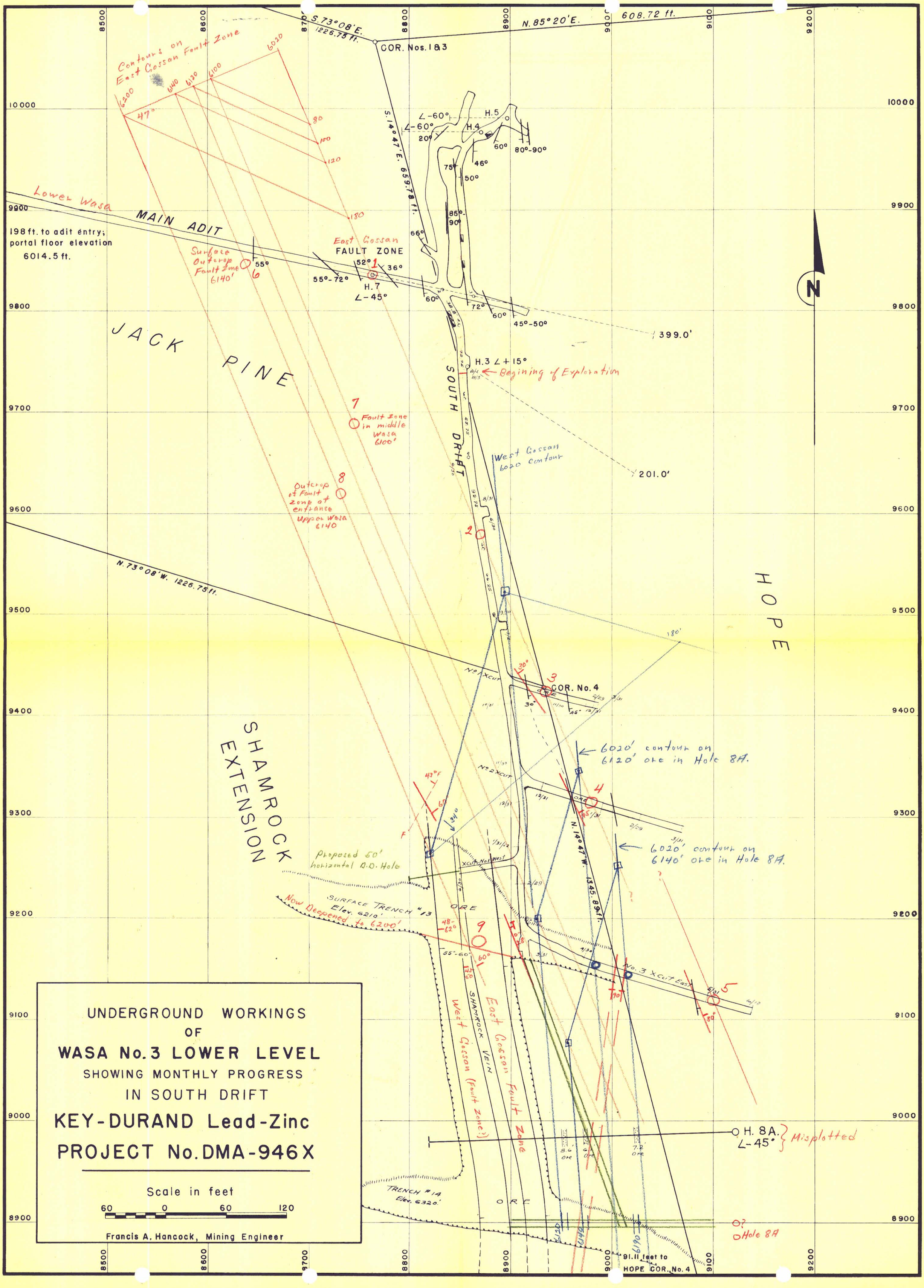
Depth, ft. From-	To-	Formation	Recovery, percent Core	Core analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au	Sludge analyses, percent Zn	Pb	Cu	Oz/ton Ag	Au
0.0	24.0	Dump and debris (standpipe)											
24.0	28.0	Limestone, dark gray, almost black, argillaceous	30.0						No sludge - water lost				
28.0	32.0	Limestone (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			.4	.05*	.05*		
145.2	146.2	do.	85.0						.05*	.05*	.05*		
146.2	147.2	do.	85.0										
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*		

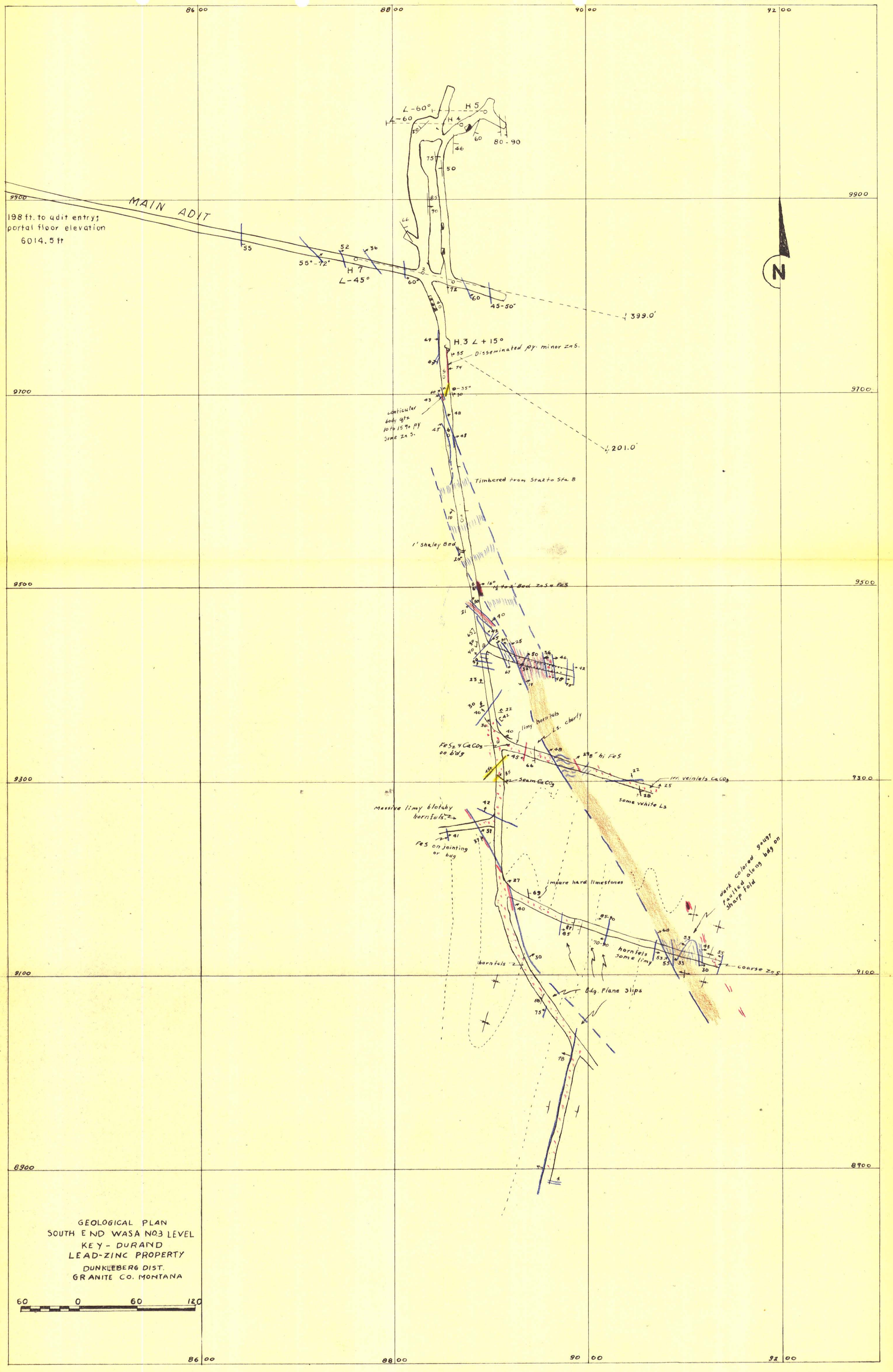
* Less than. ** Deviation from plane normal to core axis.

Western Montana Exploration & Development Company, Inc. (Key-Durand Lead-Zinc Project No. DMA-946X-I-DMA-E 30)
Summary of Costs - June 28, 1951 to July 1, 1952, of all work done on project.

Description of Work	July 1951	August 1951	September 1951	October 1951	November 1951	December 1951	January 1952	February 1952	March 1952	April 1952	May 1952	June 1952	Total	Cost per Foot
Drifting South, Contract & Day Work (Labor)		83463	136800	89670	58000	39000	54000	36000	73000	34037	11993		615963	10.40
Crosscutting, Contract & Day Work (")	56000			6000	5200	51000	88097	69830	49457	76000	131196	126400	659180	
Mining Supplies, Rails, Pipe, Explosives, Ties, Timber Etc	100834	54707	78079	31813	61874	50429	91096	17734	96317	101462	28907	38265	751519	5.12
Sharpening Tools, Drill Reps. Etc	5970	9677	7097	3650	2500	2050	8275	6105	6765	6066	7042	4868	70065	.576
Mine Haulage, Care of Horse, Clean Ditch & Track, Dozer dump Etc. (Horse Feed)	5000	965	7500	22158	8105	28170	13536	23520	19563	12859	19232	14050	174658	1.425
Air Compressor & Power Plant, Maintenance & Operation & Equipment Etc. (Transportation) Labor & Supplies	12347	11789	17309	19007	14214	8966	17541	11974	19790	10553	15685	23106	182283	1.485
Hauling Supplies	35488	7755	12515	16118	13921	14072	16311	9592	18158	11521	16195	11167	182821	.995
Mining Equipment Rental	44224	104900	104900	104900	104900	104900	104900	104900	104900	104900	104900	104900	1198124	9.77
" " Purchased	333445	3811	2875	5750	633	3396	30000	1692	20990	1060	770	375	404794	3.29
Sampling & Assaying		525	300		750	750	3300	1500	300	3900		375	11700	.10
Rehabilitation & Preparation, Power Wasa No. 3 Level	144599	8536					10548	1845	21525	17187	2696	14878	221814	
General Supervision & Shift Boss	25000	23845	23160	28230	24160	32120	19815	24100	17340	21430	24036	22478	285714	2.33
Engineering, Surveying, Maps, Etc.		13805	7770	4975	6914	9680	14910	9235	10575	8326	16543	14679	117412	.96
Office Work, Labor & Supplies	76	15150	18058	19975	21602	20630	18742	18825	18940	18554	18410	16948	205970	1.68
General Camp Maintenance, Hotelman, Cutting Wood, Sleep Supplies, Labor & Supplies		3455	5000	35225	4835	12705	5843	6120	15796	5392	9991	5392	109754	.89
Surface Trenching (Including Bulldozer Rental)	3000		27615	400						8000	57589		96604	
New Mine Shop & Power House Construction)				24000	38639	65718	20318	17843	8422				174940	
New Road Construction (Including Bulldozer Rental)				60109	117020	150633							327762	
Roads, Maintenance, Grading, Snow Removal Etc						4800	22685	3200	10415	16000	34325	9769	101194	
Camp Buildings, Construction & Repairs - Cellar, Bunk House, Meat House		1000	1155	49418							53865		105438	
Power Line Survey.							50643	800					51443	
Clearing Mill Building Site											33540	63202	96742	
Geological Survey of Mine & Property												118958	118958	
Moving Machinery & Equipment (New Shop)								3200		4044			7244	
Diamond Drill Bit (new)		8005											8005	
Payroll Taxes				67766		4130		13621	43107		28776	15119	172519	
Telephone & Telegraph (Charges)		70						325		1075	1007	1575	4052	
Travel Expense	7110	2460		9608	2345		8369						29912	
Administration	7258	5000		9675	8340	6450	6450	6900	4840	8035	5000	6667	74615	
Milling Tests on Ore & Flow Sheet											25000	33200	58200	
Boarding House, Equipment, Labor & Supplies		3650		49986	40482	27899	62745	42376	48702	46582	42569	46061	411052	
Commissary Supplies (deducted in payrolls)				5277	1531	6230	4047	1260	1375	1645	2430	2070	25865	
Totals	$ 765983	357751	469318	663710	536054	643728	672171	432497	610277	518628	691697	694502	7056316	
												less Inventory Mining Supplies on hand July 1, 1952	124312	
												" Payroll deductions for Board	305400	
												" " " " Commissary	25865	455577
												Net Total		6600739

Total driven South Drift	579.0 feet
" " Crosscutting	647.5 "
Total Footage	1226.5 feet

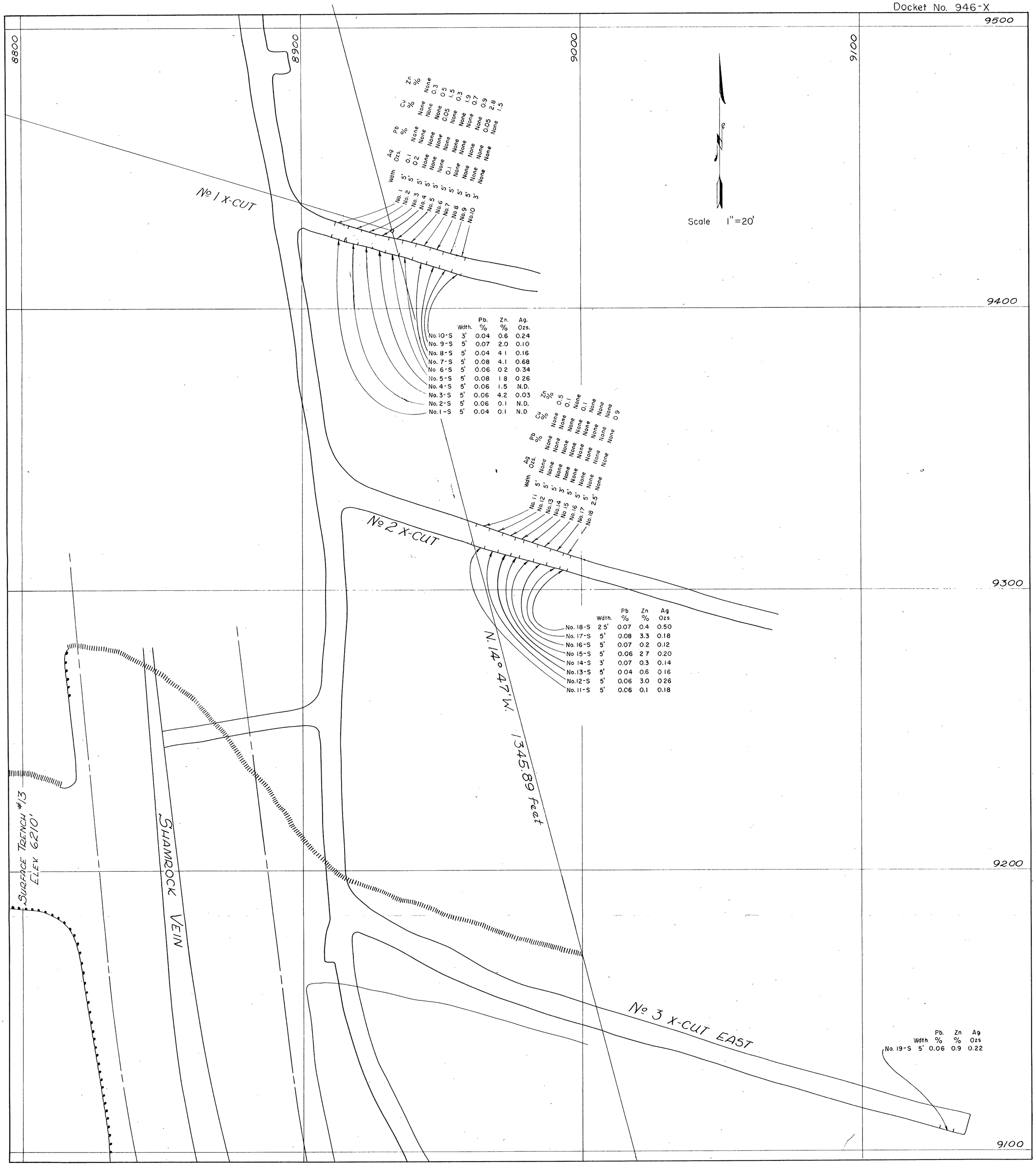

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
JACK PINE
HOPE
SHAMROCK EXTENSION
Lower Wasa
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
S. 73° 08' E. 1226.75 ft.
N. 85° 20' E.
608.72 ft.
COR. Nos. 1 & 3
S. 14° 47' E. 659.78 ft.
Contours on East Gossan Fault Zone
East Gossan FAULT ZONE
Surface Outcrop Fault Zone 6140'
H.7 ∠-45°
H.3 ∠+15°
Begining of Exploration
SOUTH DRIFT
Fault Zone in middle Wasa 6100'
Outcrop of Fault zone at entrance upper Wasa 6140
West Gossan 6020 contour
399.0'
201.0'
N. 73° 08' W. 1226.75 ft.
No. 1 XCUT
COR. No. 4
6020' contour on 6120' ore in Hole 8A.
No. 2 XCUT
6020' contour on 6140' ore in Hole 8A.
N. 14° 47' W. 1345.89 ft.
Proposed 50' horizontal D.D. Hole
SURFACE TRENCH #13 Elev. 6210'
Now Deepened to 6200'
ORE
No. 3 XCUT East
SHAMROCK VEIN
East Gossan Fault Zone
West Gossan (Fault Zone?)
H. 8A. ∠-45° Misplotted
TRENCH #14 Elev. 6320'
Hole 8A
91.11 feet to HOPE COR. No. 4



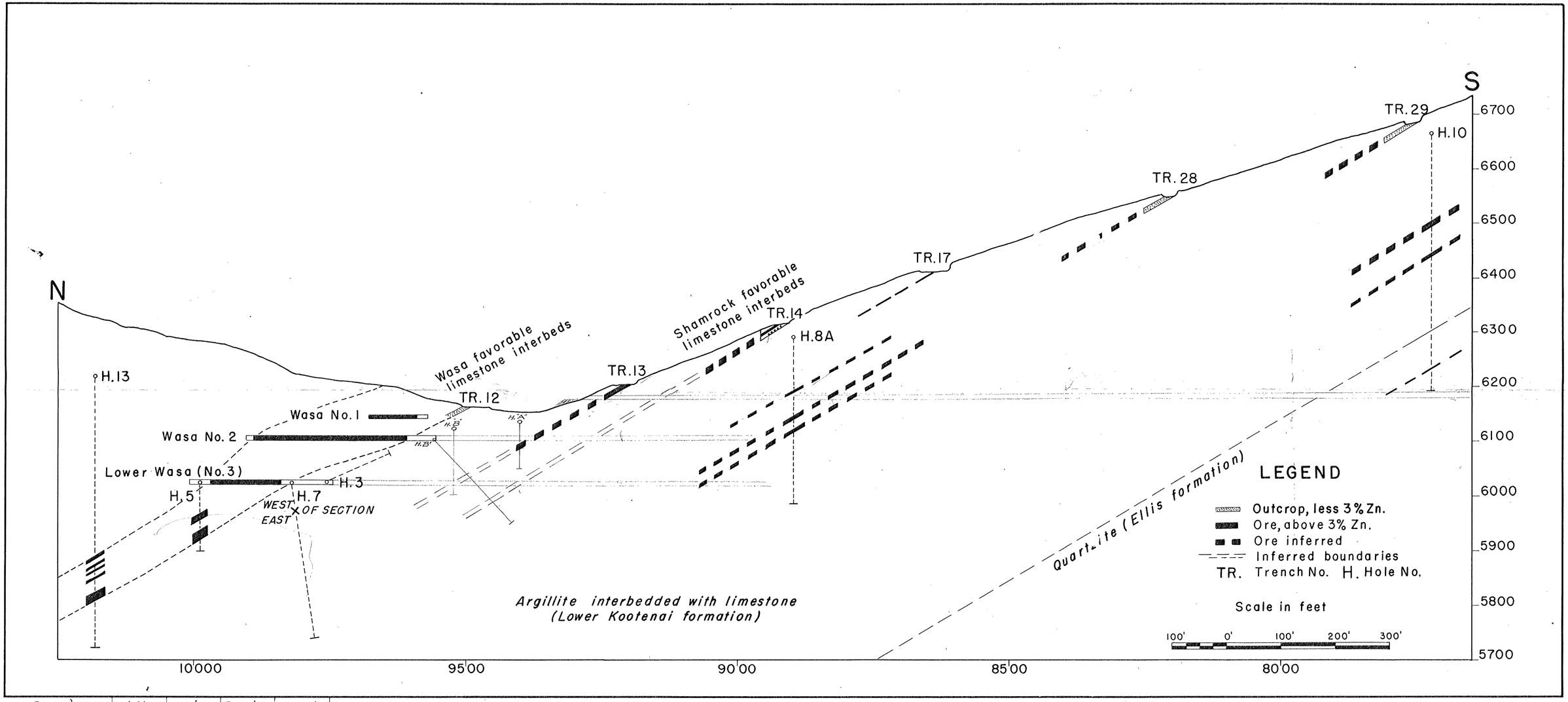
GEOLOGICAL PLAN
SOUTH END WASA NO.3 LEVEL
KEY - DURAND
LEAD-ZINC PROPERTY
DUNKLEBERG DIST.
GRANITE CO. MONTANA

60 0 60 120

Docket No. 946-X



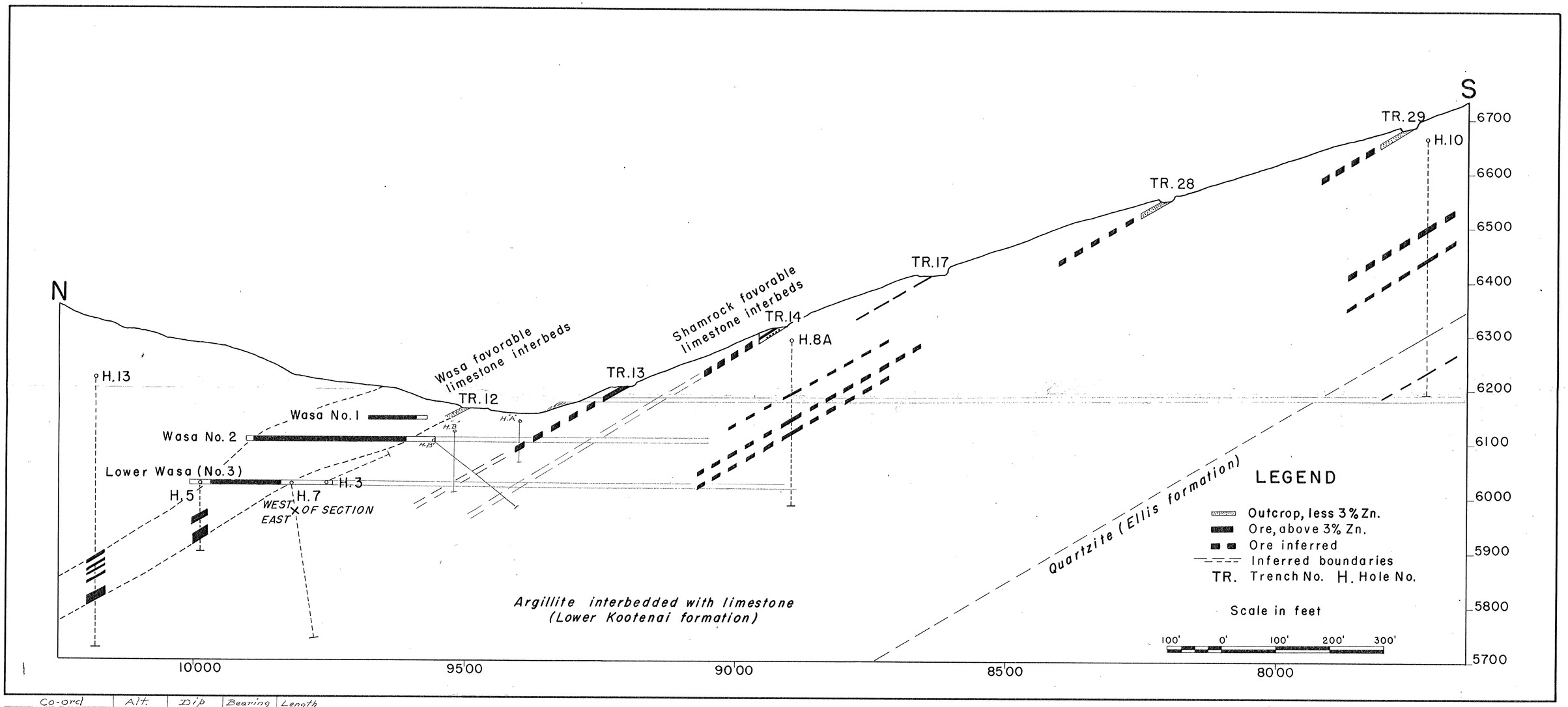
ASSAY PLAN OF No. 1, No. 2 & No. 3 CROSSCUTS OF KEY-DURAND DMEA PROJECT No. 1-DMA-30
(WASA MINE)
GRANITE COUNTY, MONTANA



Co-ord.	Alt.	Dip	Bearing	Length
A'-N.9400-E.8790	6,140 ft.	-40°	East	130. ft
B'-N.9520-E.8730	6,135 "	-48°	East	200 "
B'-N.9555-E.8850	6,100 "	-60°	South	160 "

Figure 5A- Longitudinal section of Wasa - Shamrock area

(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)



Co-ord	Alt.	Dip	Bearing	Length
A - N. 9400, E. 8,790	6,140 ft.	-40°	East	130 ft.
B - N. 9520, E. 8,730	6,135 "	-48°	East	200 "
B' - N. 9555, E. 8,850	6,100 "	-60°	South	160 "

Figure 5A - Longitudinal section of Wasa - Shamrock area

(See U.S. Bureau of Mines Project No. 15-197, — Durand Lead and Zinc)

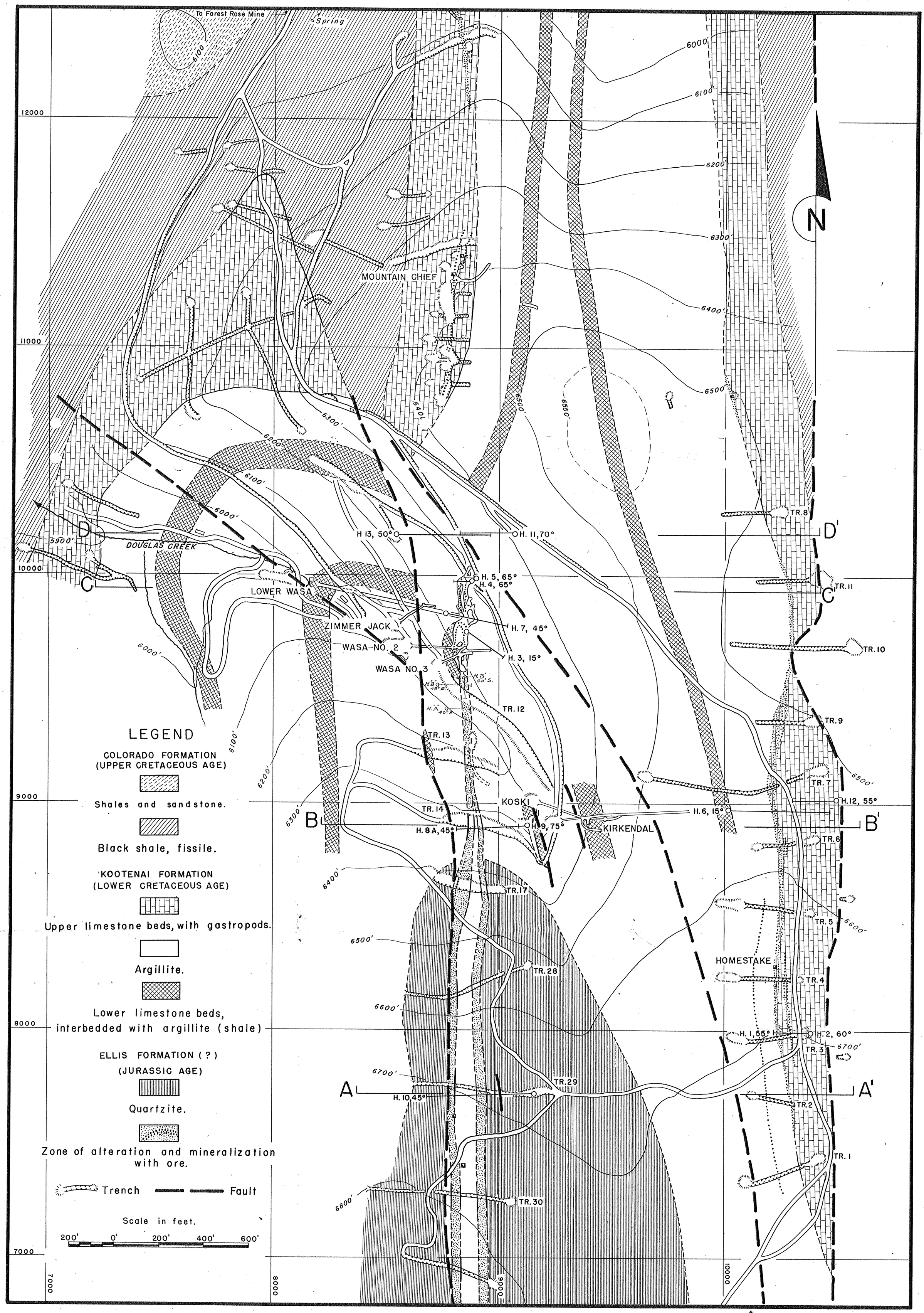


Figure 4 — Topographical and geological map of the Wasa area.

(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)

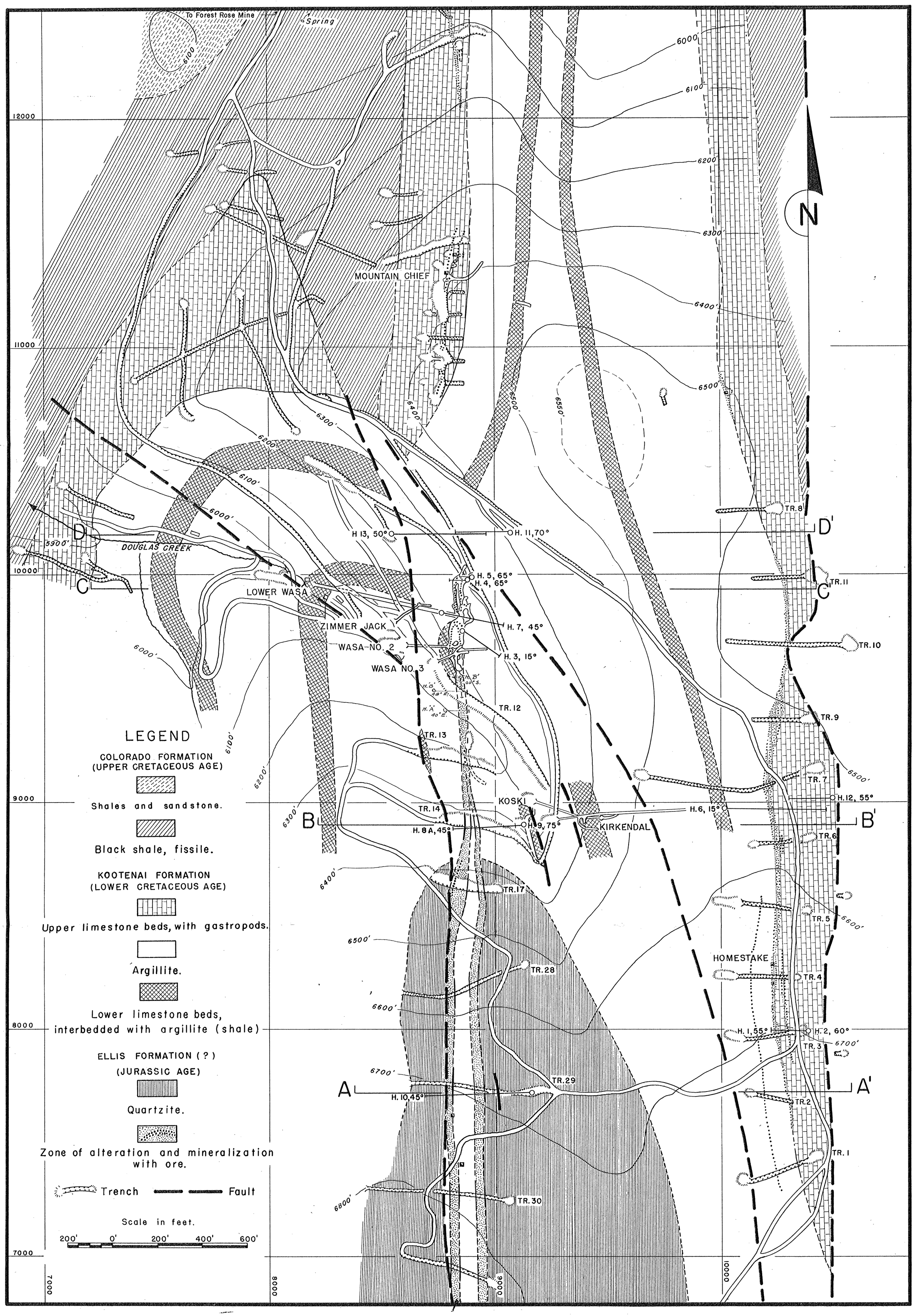
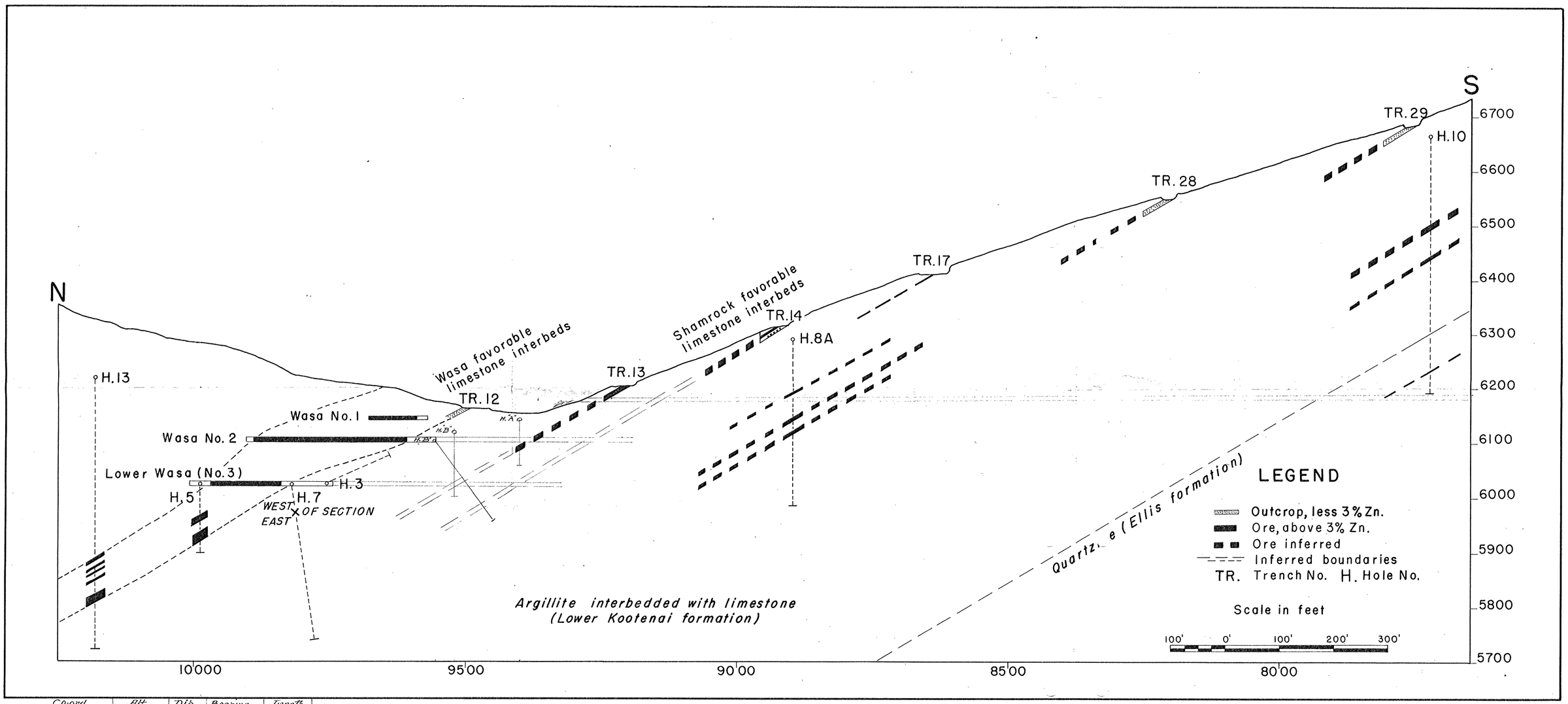


Figure 4 — Topographical and geological map of the Wasa area.

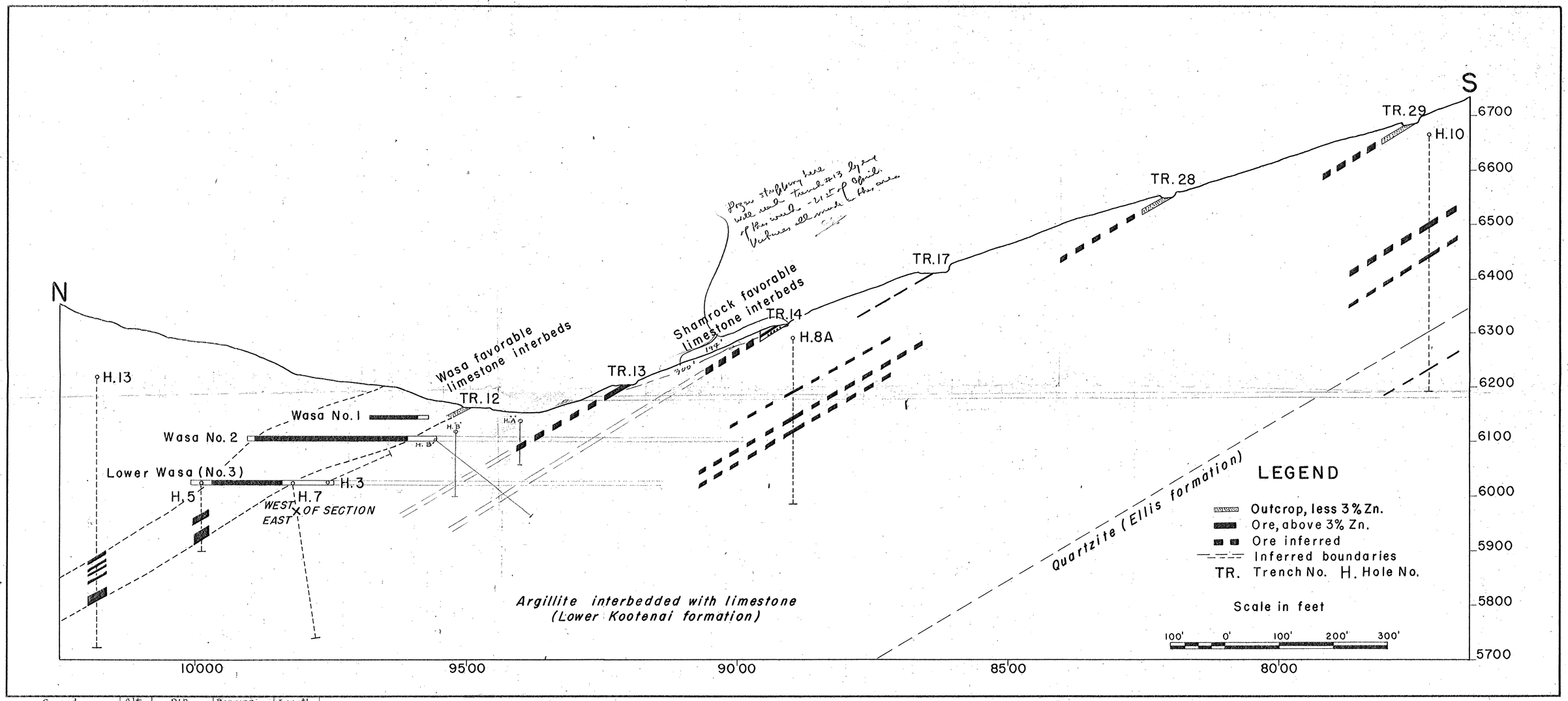
(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)



Co-ord	Alt.	Dip	Bearing	Length	
A - N. 9,400. E. 8,790	6,140'	-40°	East	130 ft.	1 Plan
B - N. 9,520. E. 8,730	6,135'	-48°	East	200 "	
B' - N. 9,555. E. 8,850	6,100'	-60°	South	160 "	2 Plan

Figure 5A - Longitudinal section of Wasa - Shamrock area

(See U.S. Bureau of Mines Project No. 15-197, — Durand Lead and Zinc)



Co-ord	Alt.	Dip	Bearing	Length
A - N. 9,400, E. 8,790	6,140	-40°	East	130 ft.
B - N. 9,520, E. 8,730	6,135	-48°	East	200 "
B' - N. 9,555, E. 8,850	6,100	-60°	South	160 "

Figure 5A- Longitudinal section of Wasa - Shamrock area

(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)

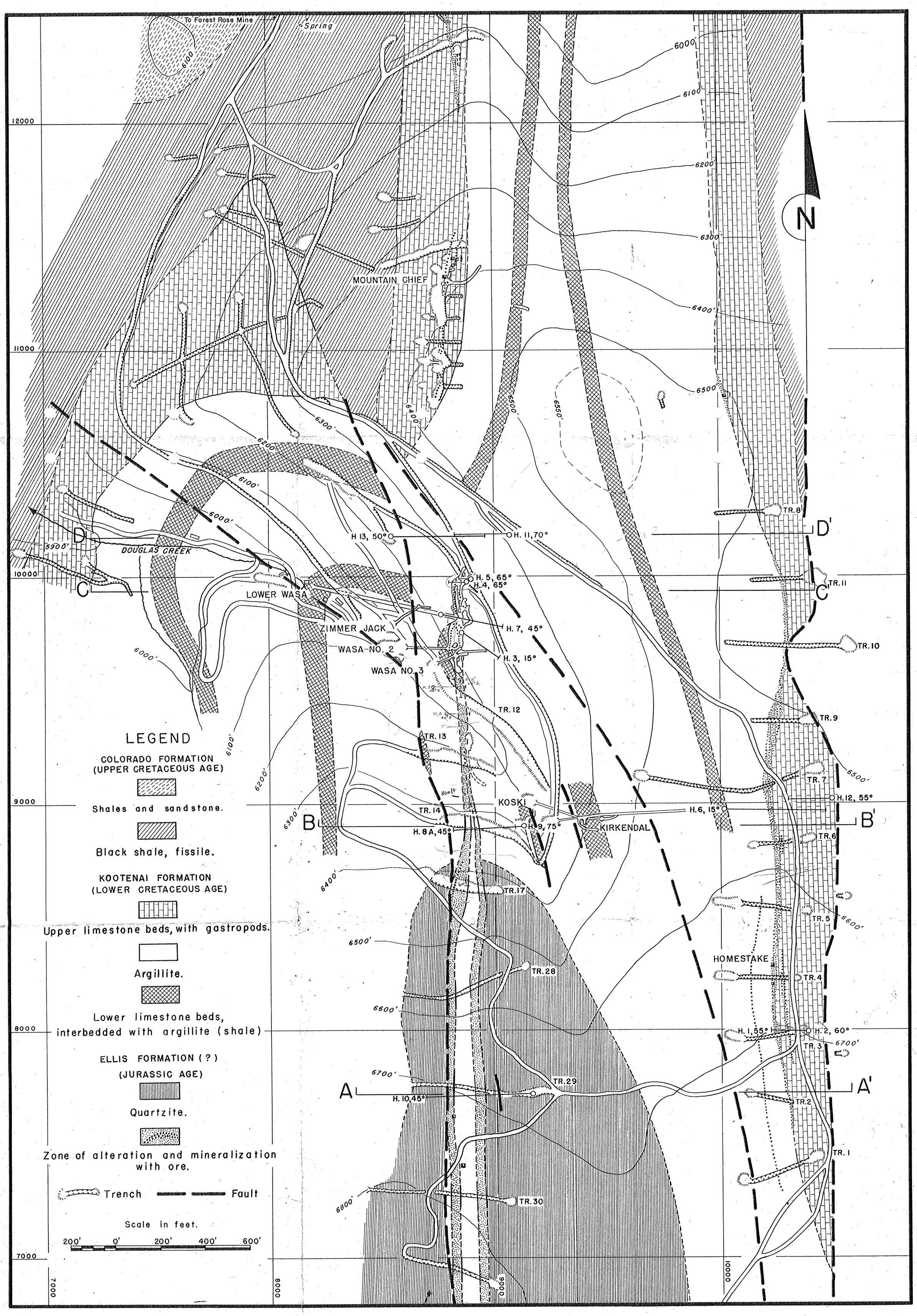


Figure 4 — Topographical and geological map of the Wasa area.

(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)

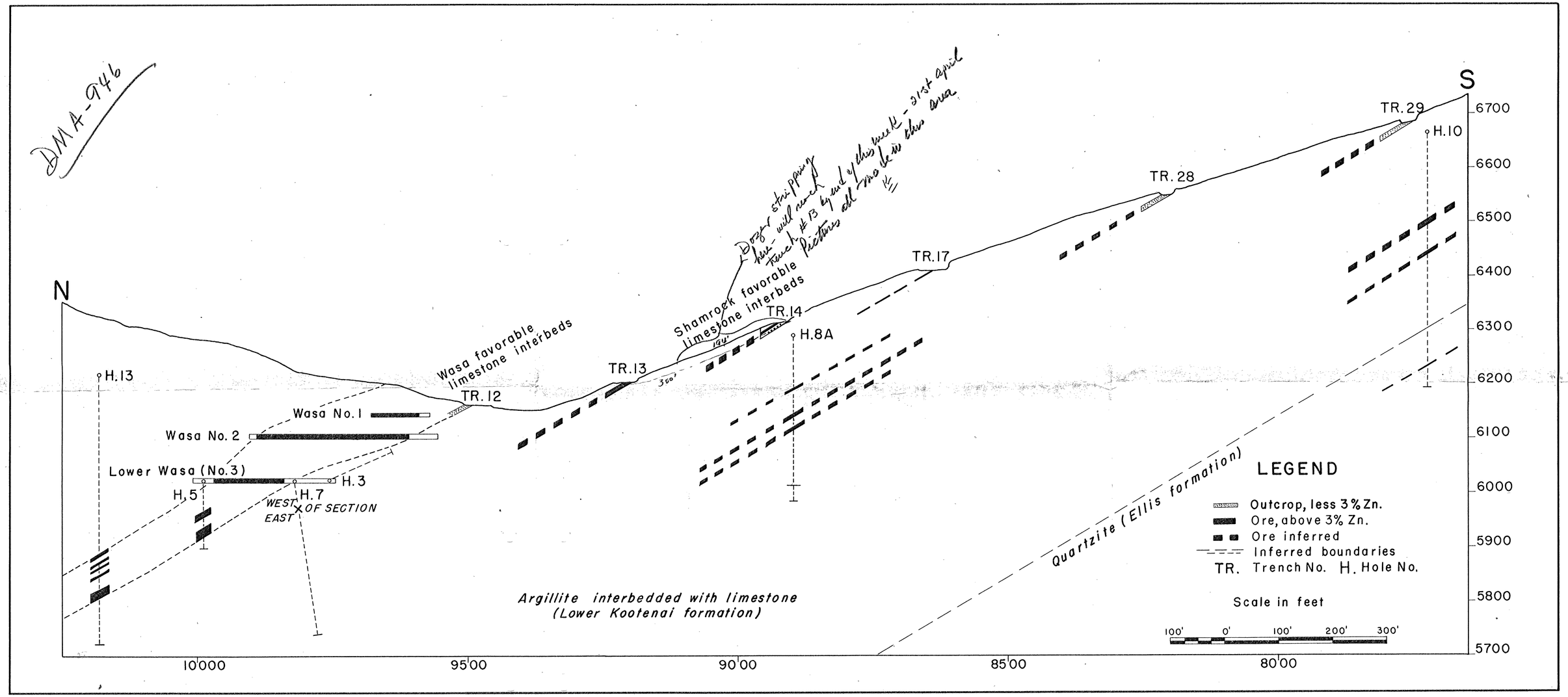


Figure 5A- Longitudinal section of Wasa - Shamrock area

(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)

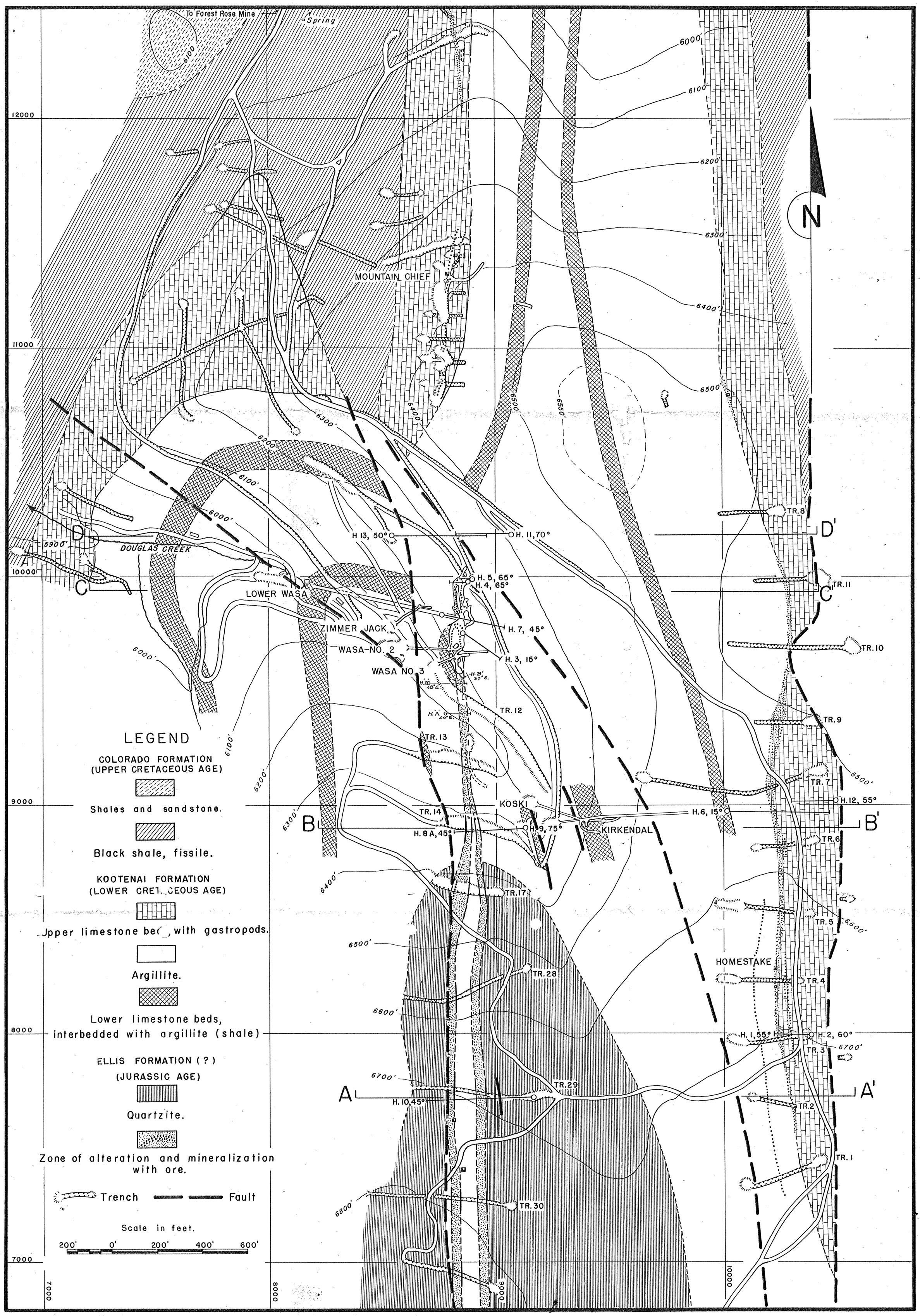
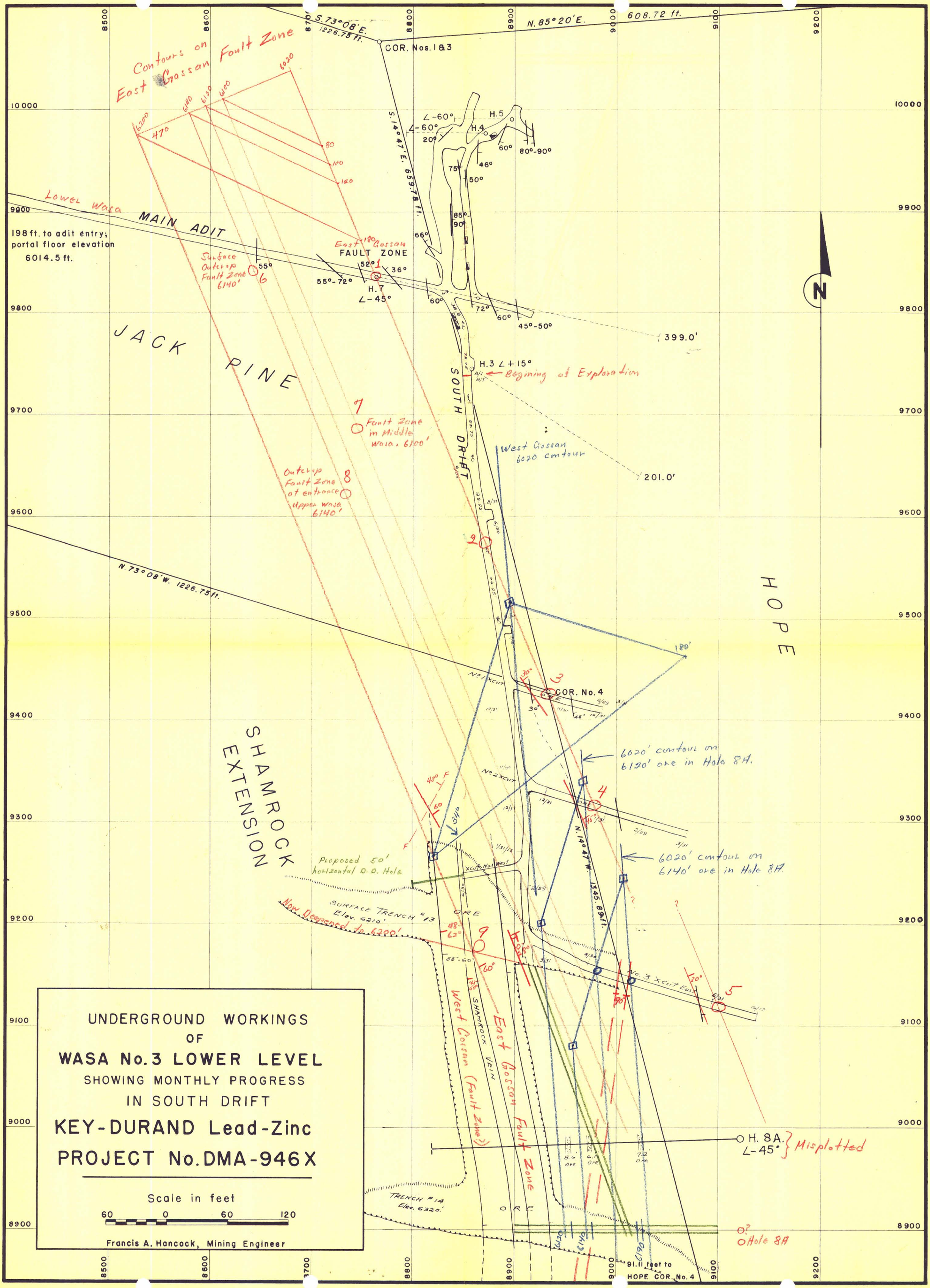
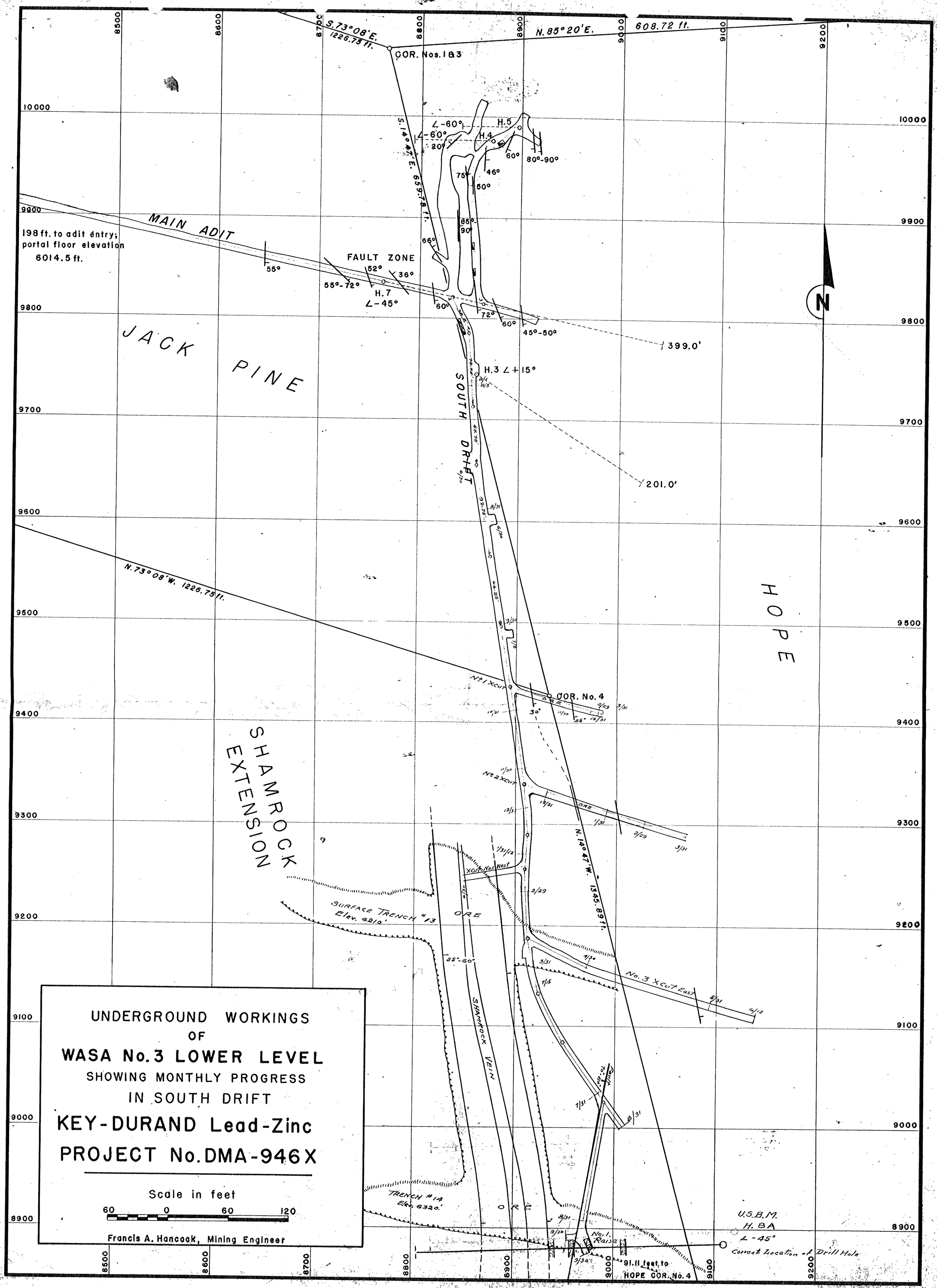
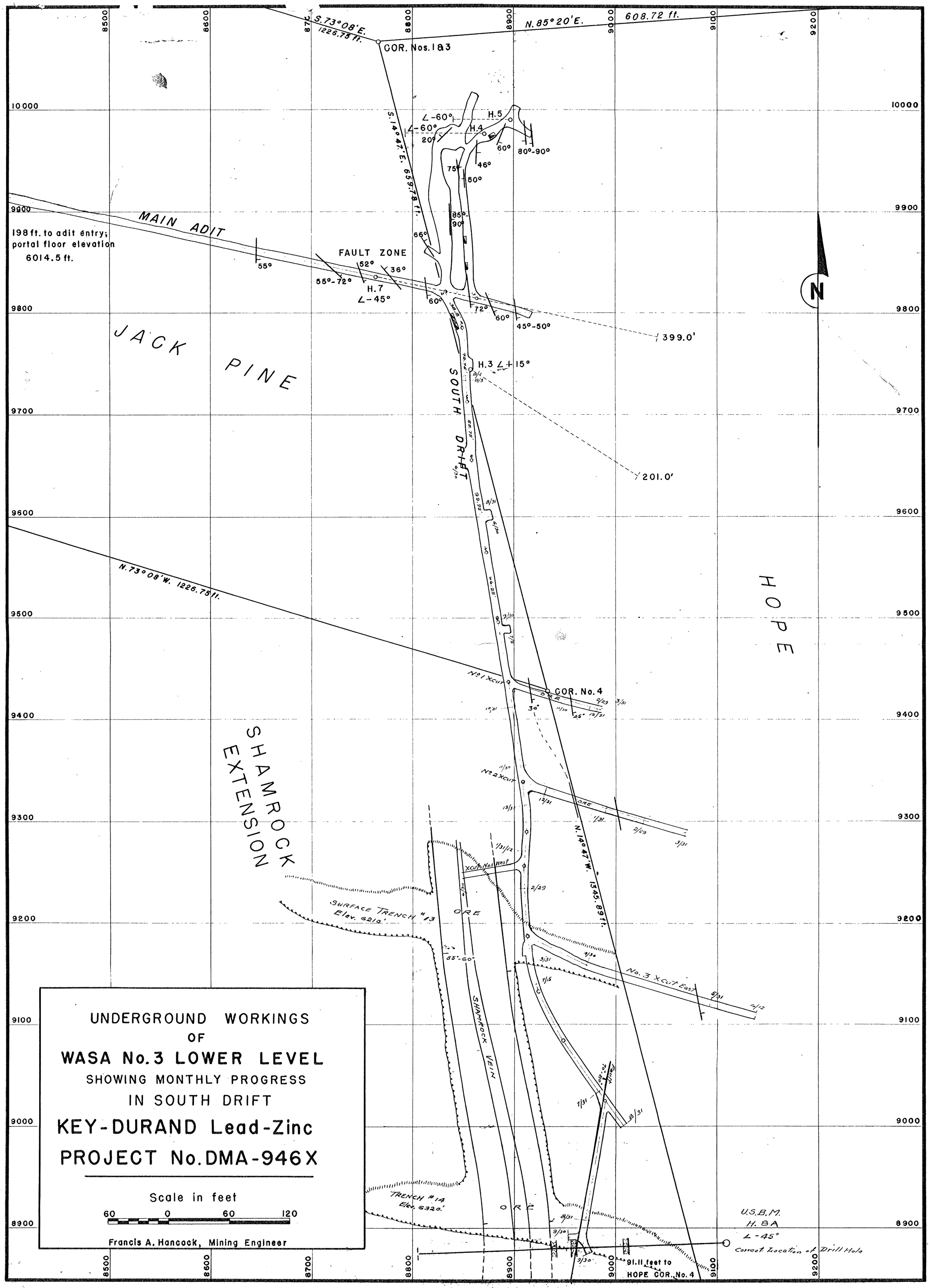


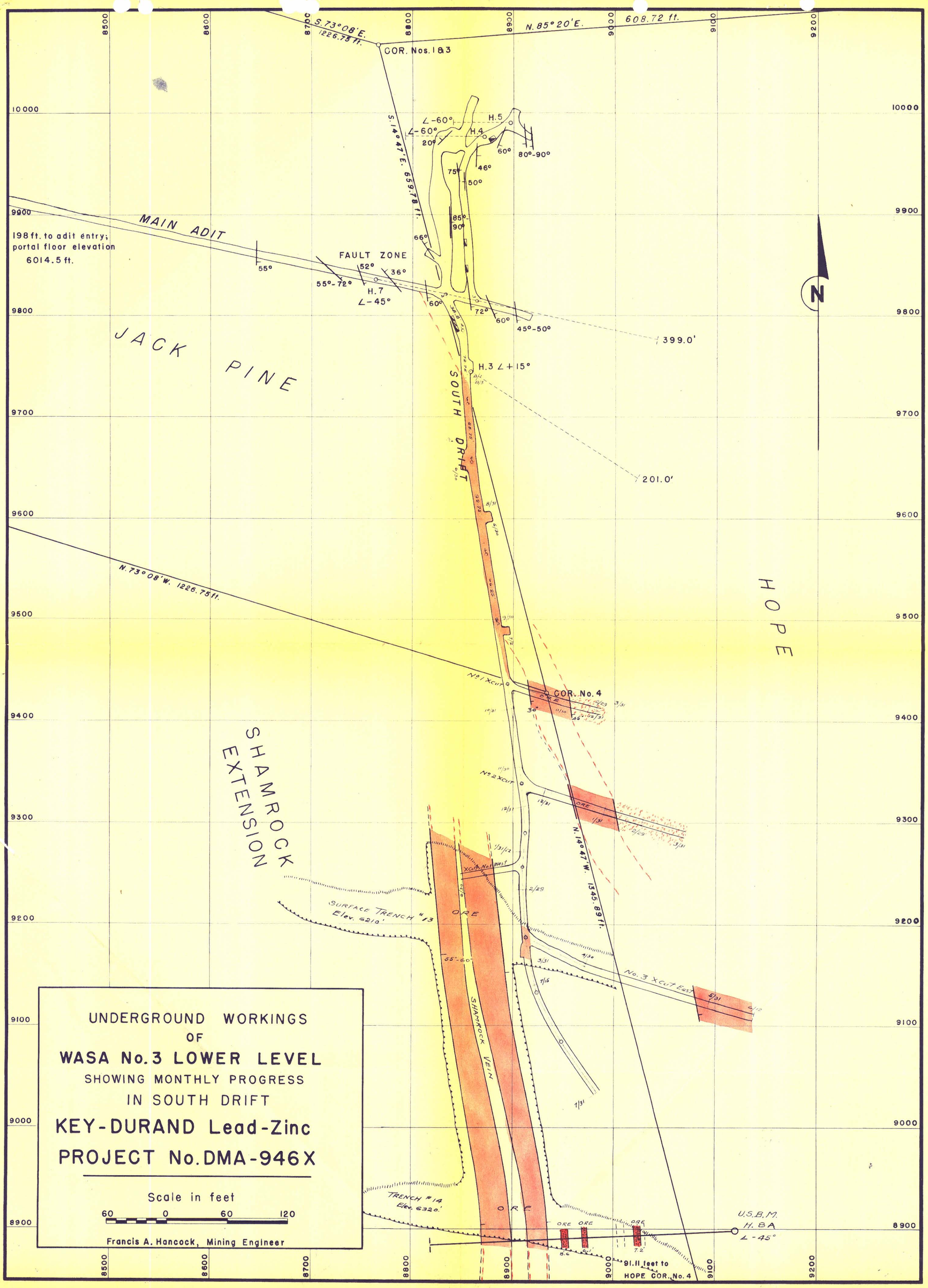
Figure 4 — Topographical and geological map of the Wasa area.

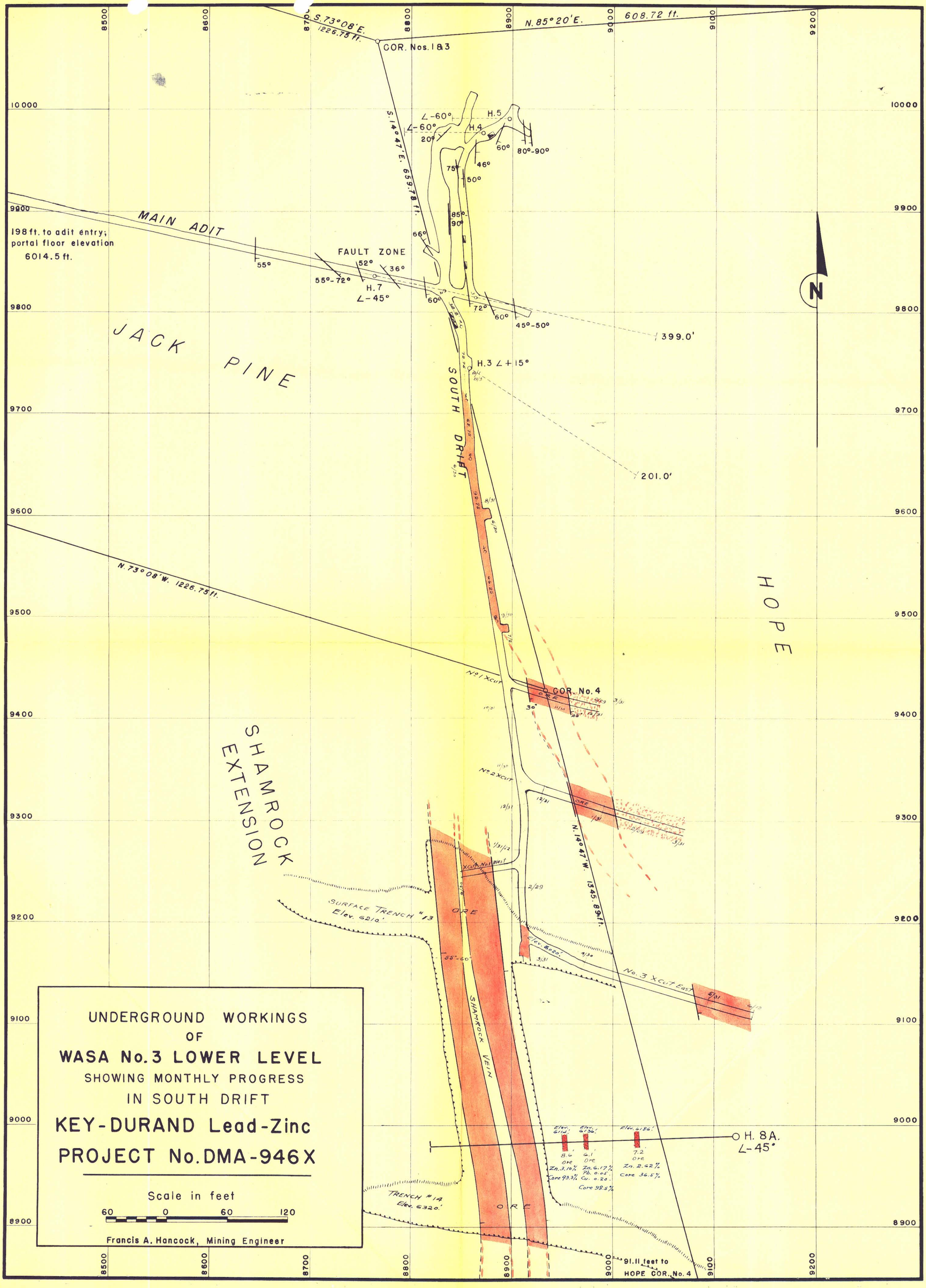
(See U.S.Bureau of Mines Project No. 15-197,— Durand Lead and Zinc)

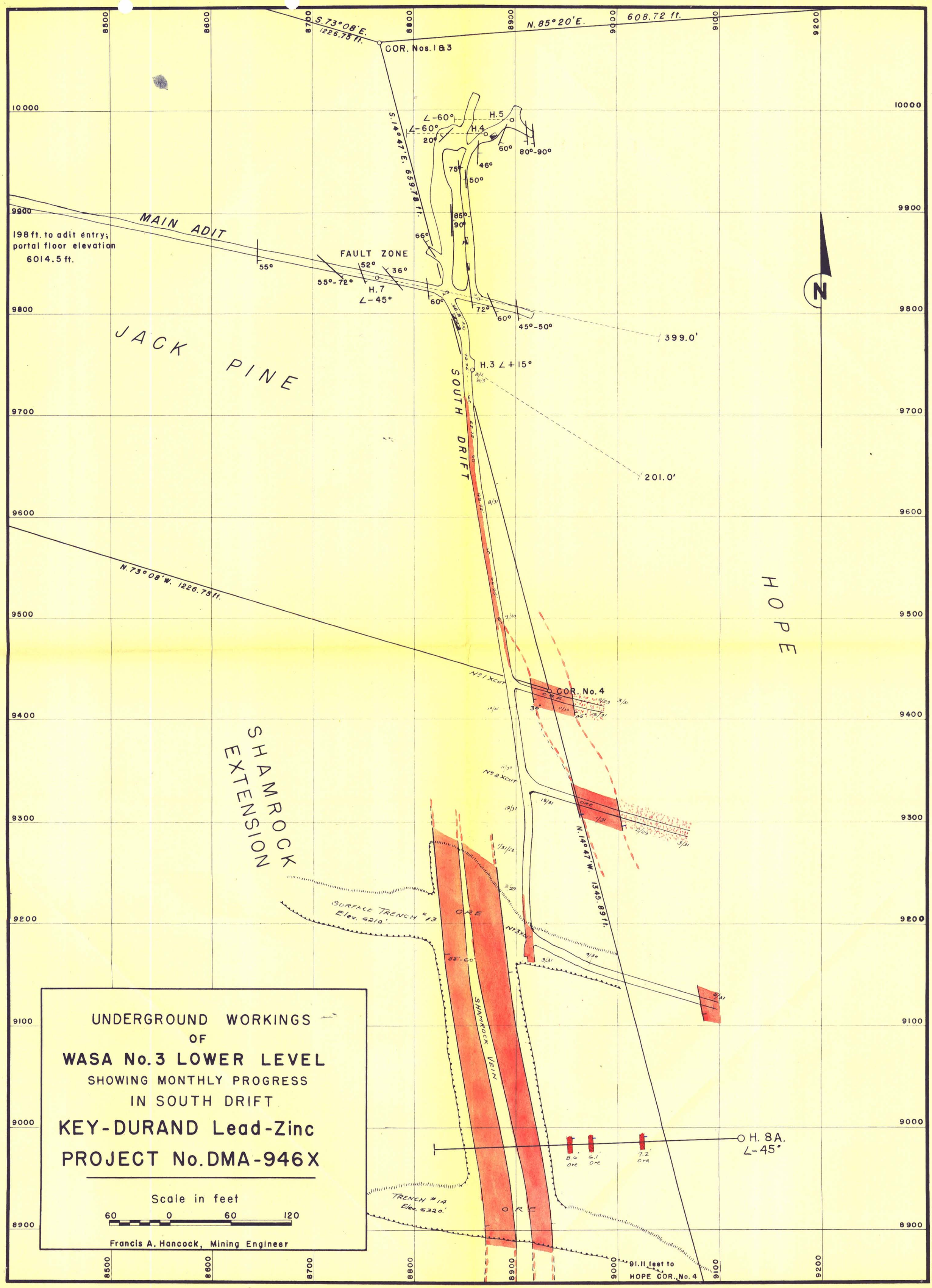

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
Contours on East Gossan Fault Zone
Lower Wasa
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
S. 73° 08' E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E. 608.72 ft.
S. 14° 47' E. 659.78 ft.
East Gossan FAULT ZONE
JACK PINE
SOUTH DRIFT
Beginning of Exploration
West Gossan 6020 contour
399.0'
201.0'
HOPE
N. 73° 08' W. 1226.75 ft.
COR. No. 4
SHAMROCK EXTENSION
6020' contour on 6120' ore in Hole 8A.
6020' contour on 6140' ore in Hole 8A.
Proposed 50' horizontal D.D. Hole
SURFACE TRENCH #13 Elev. 6210'
Now Deepened to 6200'
ORE
West Gossan (Fault Zone?)
SHAMROCK VEIN
East Gossan Fault Zone
H. 8A. ∠-45° Misplotted
Hole 8A
TRENCH #14 Elev. 6320'
91.11 feet to HOPE COR. No. 4

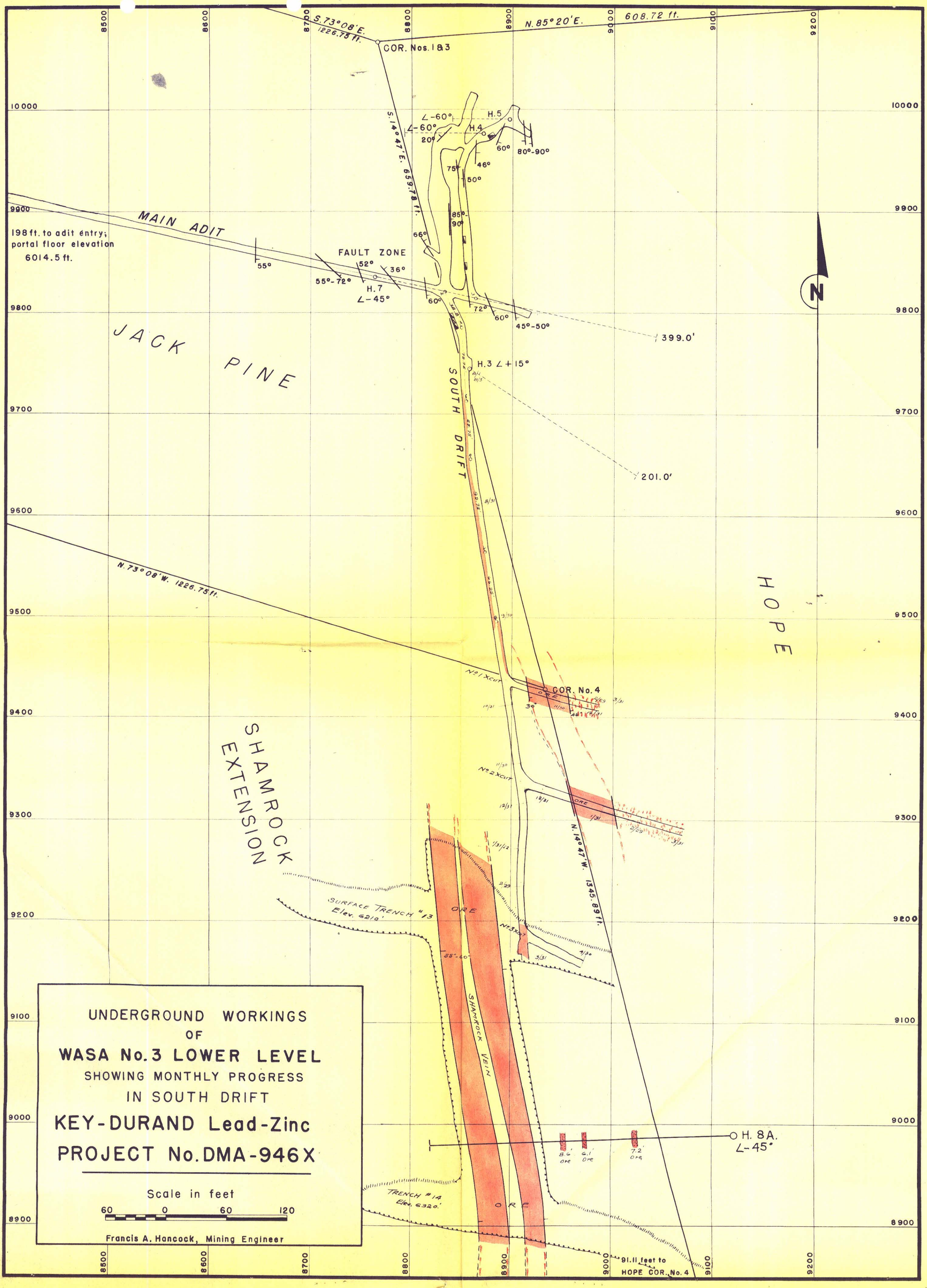

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E.
1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E.
608.72 ft.
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry;
portal floor elevation
6014.5 ft.
FAULT ZONE
H.7
∠-45°
H.3 ∠+15°
SOUTH DRIFT
399.0'
201.0'
JACK PINE
HOPE
SHAMROCK EXTENSION
N. 73° 08' W. 1226.75 ft.
COR. No. 4
No. 1 Xcut
No. 2 Xcut
ORE
N. 14° 47' W. 1345.89 ft.
Xcut No. 1 West
SURFACE TRENCH #13
Elev. 6210'
SHAMROCK VEIN
No. 3 Xcut East
TRENCH #14
Elev. 6320'
No. 1 Raise
91.11 feet to
HOPE COR. No. 4
U.S.B.M.
H. 8A
∠-45°
Correct Location of Drill Hole

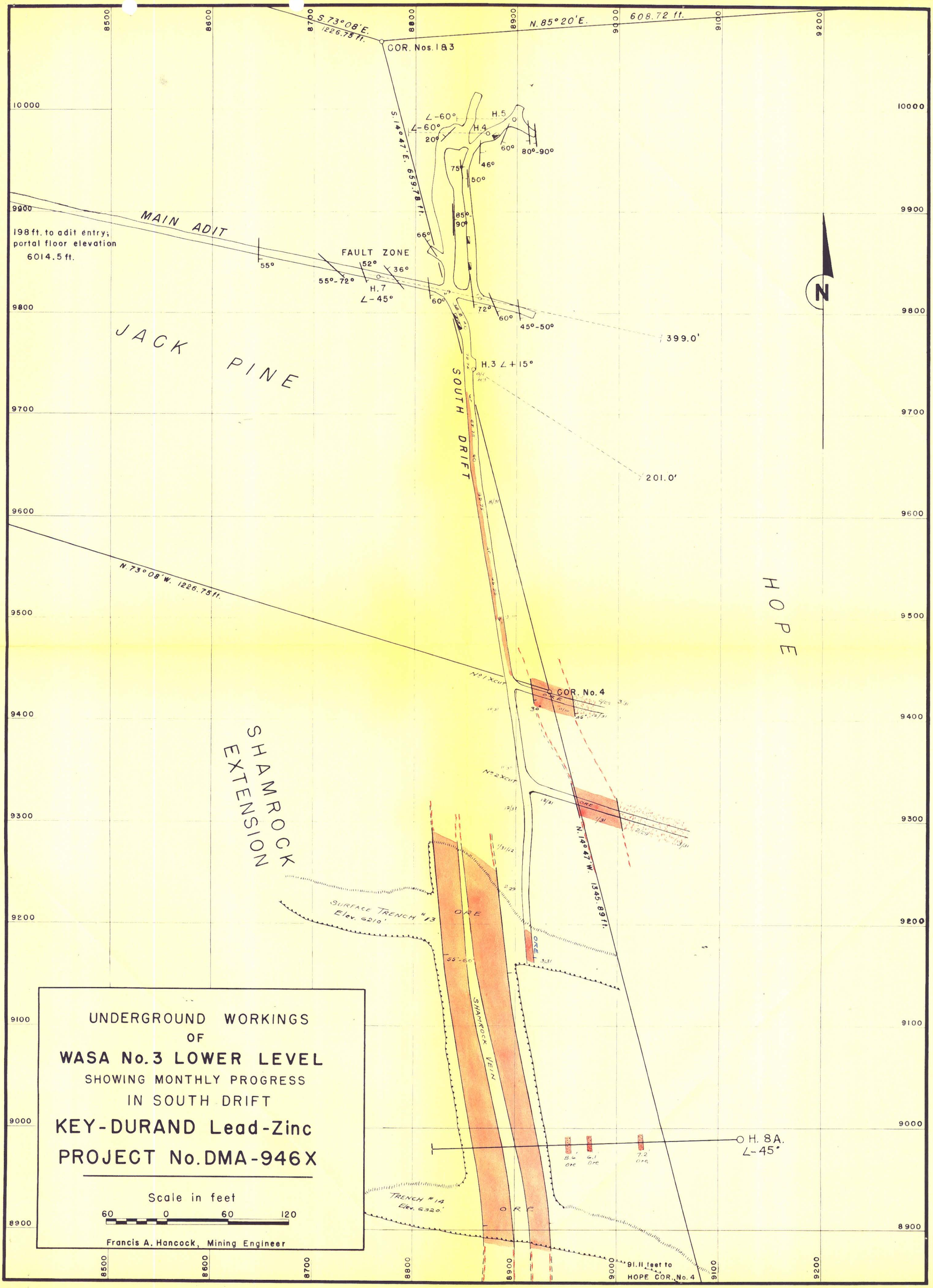

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E. 608.72 ft.
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.7 ∠-45°
H.3 ∠+15°
H.4
H.5
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
SHAMROCK EXTENSION
N. 73° 08' W. 1226.75 ft.
No. 1 Xcut
COR. No. 4
ORE
No. 2 Xcut
N. 14° 47' W. 1345.89 ft.
Xcut No. 1 West
SURFACE TRENCH #13 Elev. 6210'
55°-60°
SHAMROCK VEIN
No. 3 Xcut East
Fault 70°-80°
TRENCH #14 Elev. 6320'
U.S.B.M. H. 8A ∠-45°
Correct Location of Drill Hole
91.11 feet to HOPE COR. No. 4

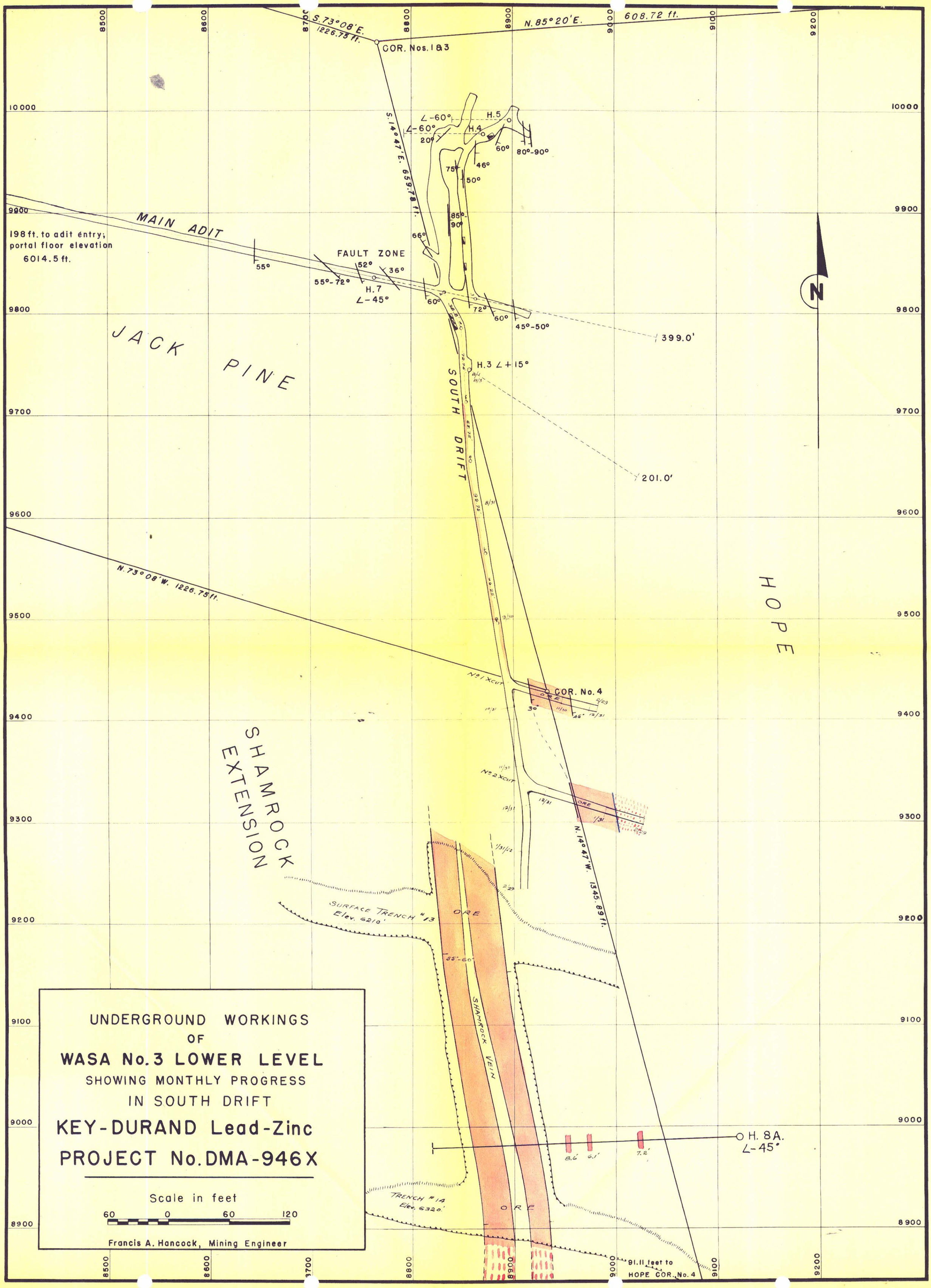

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E. 608.72 ft.
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.7 ∠-45°
H.3 ∠+15°
SOUTH DRIFT
399.0'
201.0'
JACK PINE
HOPE
N. 73° 08' W. 1226.75 ft.
SHAMROCK EXTENSION
No. 1 Xcut
No. 2 Xcut
COR. No. 4
ORE
N. 14° 47' W. 1345.89 ft.
Xcut No. 1 West
SURFACE TRENCH #13 Elev. 6210'
No. 3 Xcut East
SHAMROCK VEIN
TRENCH #14 Elev. 6320'
U.S.B.M. H.8A ∠-45°
91.11 feet to HOPE COR. No. 4
N

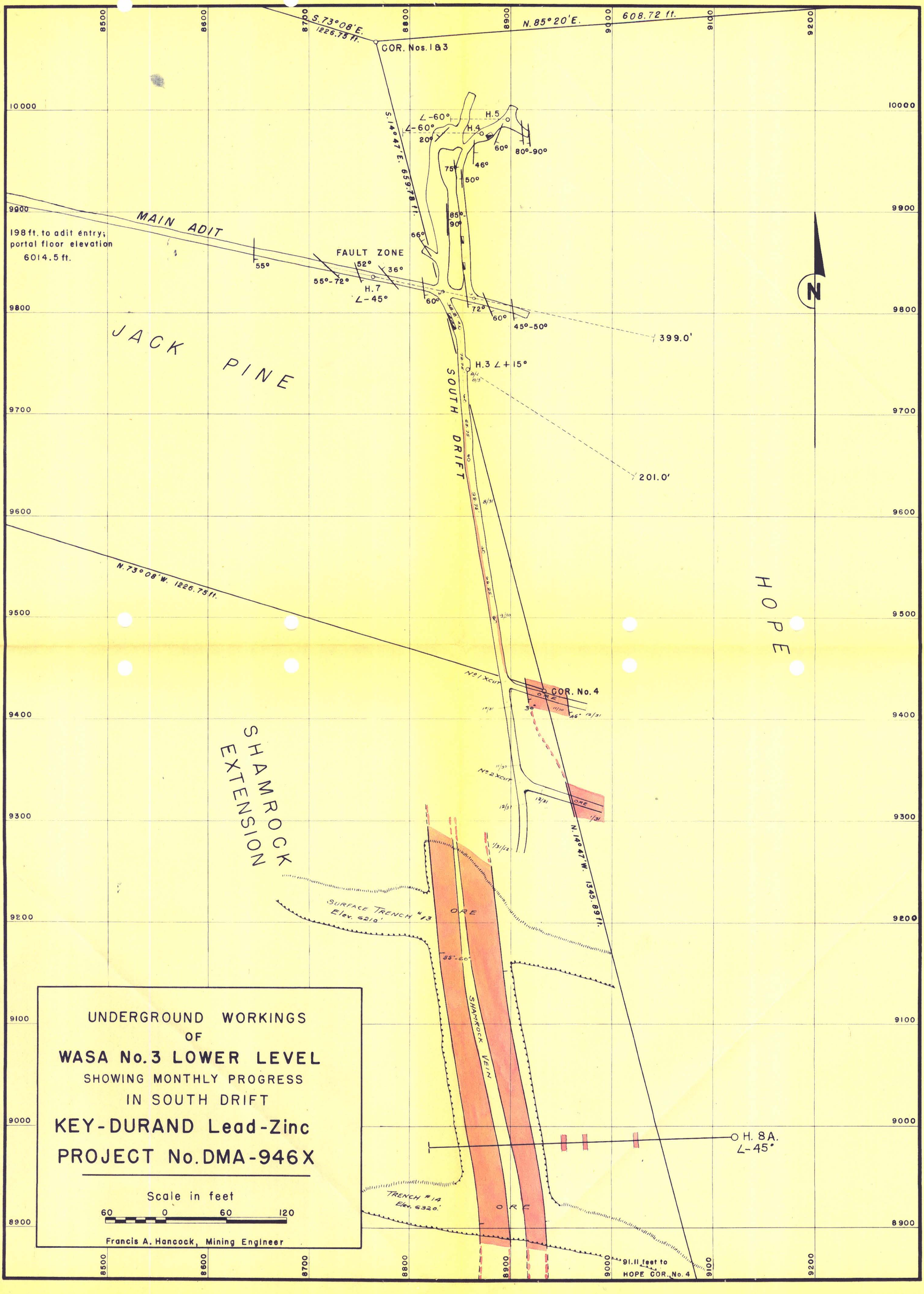

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E. 608.72 ft.
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
JACK PINE
SOUTH DRIFT
H.3 ∠+15°
399.0'
201.0'
HOPE
N. 73° 08' W. 1226.75 ft.
No. 1 Xcut
COR. No. 4
No. 2 Xcut
N. 14° 47' W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13 Elev. 6210'
ORE
SHAMROCK VEIN
No. 3 Xcut East
H. 8A. ∠-45°
TRENCH #14 Elev. 6320'
91.11 feet to HOPE COR. No. 4

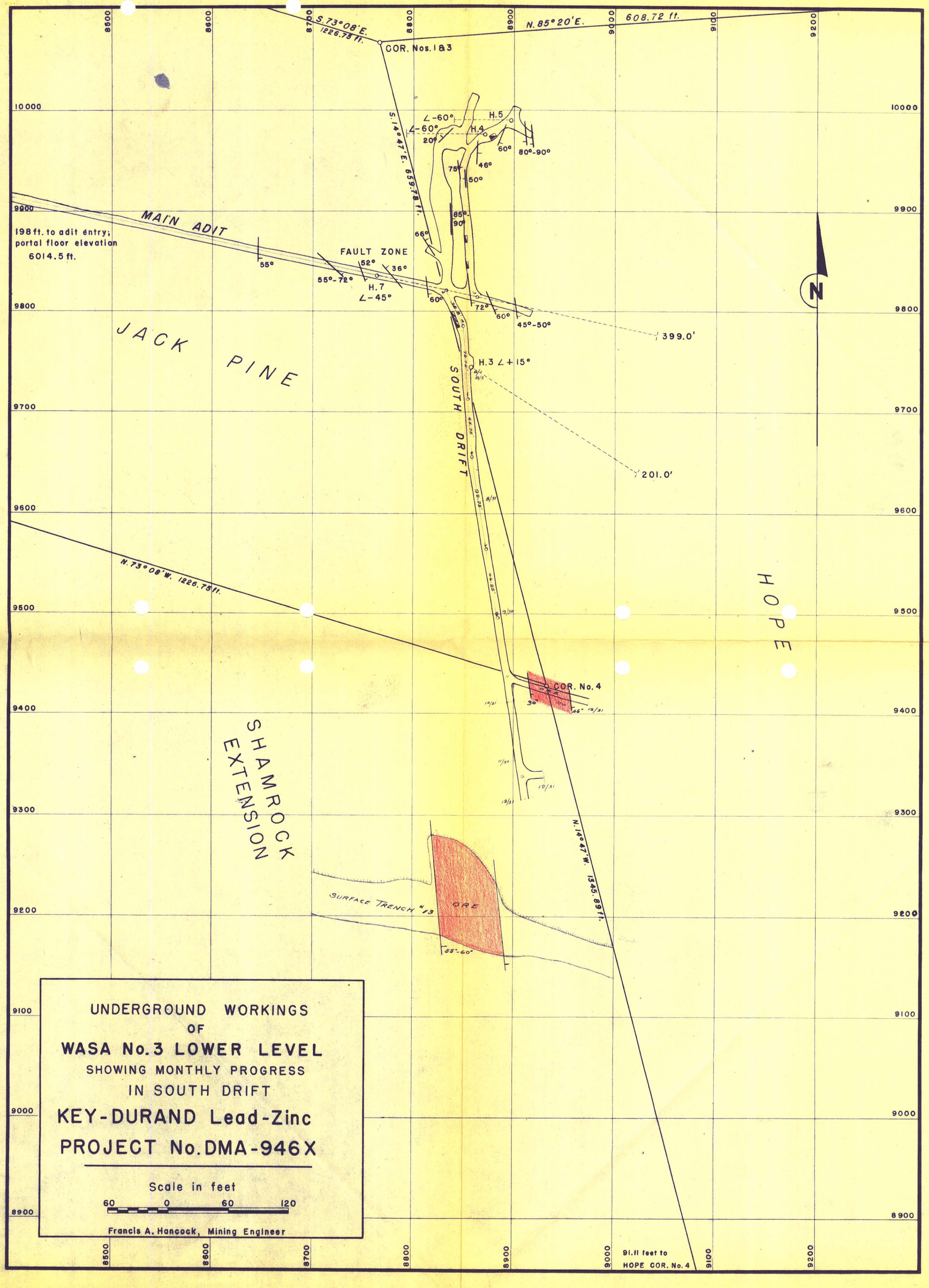

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85° 20' E.
608.72 ft.
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry;
portal floor elevation
6014.5 ft.
FAULT ZONE
H.7
∠-45°
H.5
H.4
H.3 ∠+15°
SOUTH DRIFT
399.0'
201.0'
JACK PINE
HOPE
N. 73° 08' W. 1226.75 ft.
No 1 Xcut
COR. No. 4
ORE
No 2 Xcut
N. 14° 47' W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13
Elev. 6210'
No 3 Xcut
SHAMROCK VEIN
H. 8A.
∠-45°
TRENCH #14
Elev. 6320'
91.11 feet to
HOPE COR. No. 4


UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73°08'E. 1226.75 ft.
N. 85°20'E. 608.72 ft.
COR. Nos. 1 & 3
S. 14°47'E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.5
H.4
H.7
H.3 ∠+15°
H. 8A. ∠-45°
399.0'
201.0'
JACK PINE
SOUTH DRIFT
HOPE
N. 73°08'W. 1226.75 ft.
COR. No. 4
N. 14°47'W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13 Elev. 6210'
ORE
SHAMROCK VEIN
TRENCH #14 Elev. 6320'
91.11 feet to HOPE COR. No. 4
N


UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73° 08' E. 1226.75 ft.
N. 85° 20' E. 608.72 ft.
COR. Nos. 1 & 3
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H. 7 ∠-45°
H. 5
H. 4
H. 3 ∠+15°
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
N. 73° 08' W. 1226.75 ft.
No. 1 Xcut
No. 2 Xcut
COR. No. 4
ORE
N. 14° 47' W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13 Elev. 6210'
SHAMROCK VEIN
H. 8A. ∠-45°
TRENCH #14 Elev. 6320'
91.11 feet to HOPE COR. No. 4


UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S. 73°08'E. 1226.75 ft.
COR. Nos. 1 & 3
N. 85°20'E. 608.72 ft.
S. 14°47'E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.5
H.4
H.7 ∠-45°
H.3 ∠+15°
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
N. 73°08'W. 1226.75 ft.
COR. No. 4
ORE
No. 1 Xcut
No. 2 Xcut
N. 14°47'W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13 Elev. 6210'
SHAMROCK VEIN
H. 8A. ∠-45°
TRENCH #14 Elev. 6320'
91.11 feet to HOPE COR. No. 4

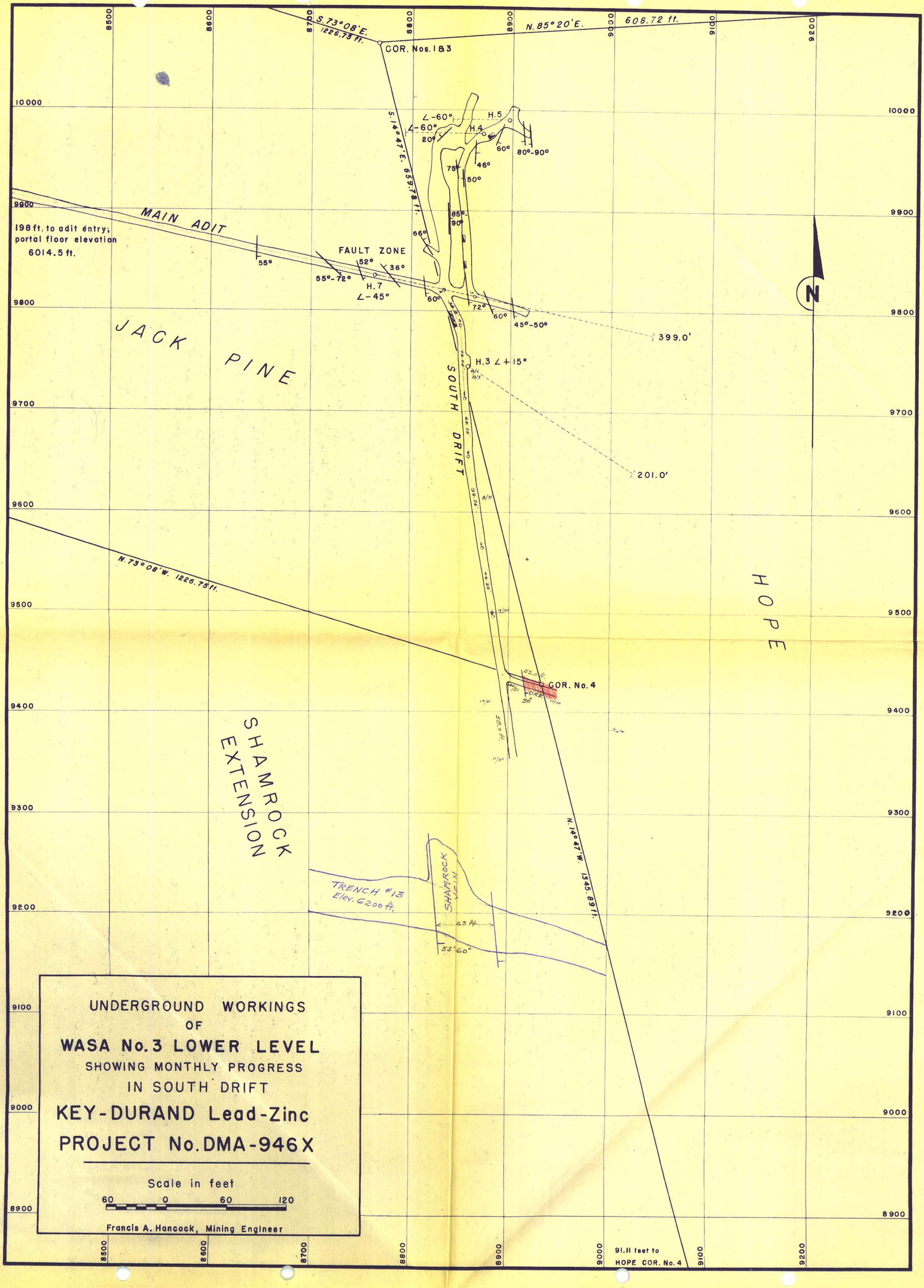

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S.73°08'E. 1226.75 ft.
N.85°20'E. 608.72 ft.
COR. Nos. 1 & 3
S.14°47'E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.7 ∠-45°
H.5
H.4
H.3 ∠+15°
H. 8A. ∠-45°
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
N.73°08'W. 1226.75 ft.
No 1 Xcut
No 2 Xcut
COR. No. 4
ORE
N.14°47'W. 1345.89 ft.
SHAMROCK EXTENSION
SURFACE TRENCH #13 Elev. 6210'
TRENCH #14 Elev. 6320'
SHAMROCK VEIN
91.11 feet to HOPE COR. No. 4

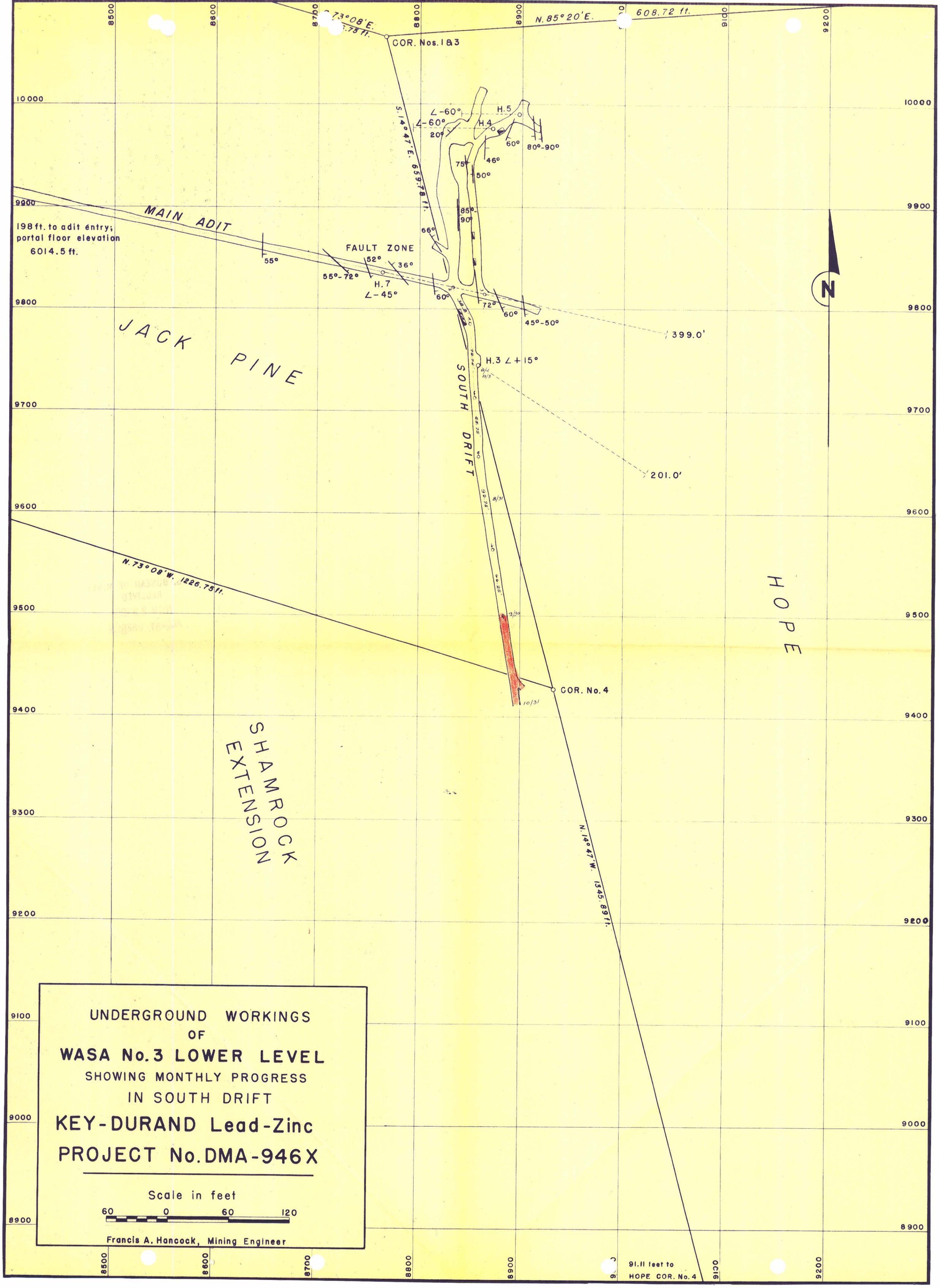


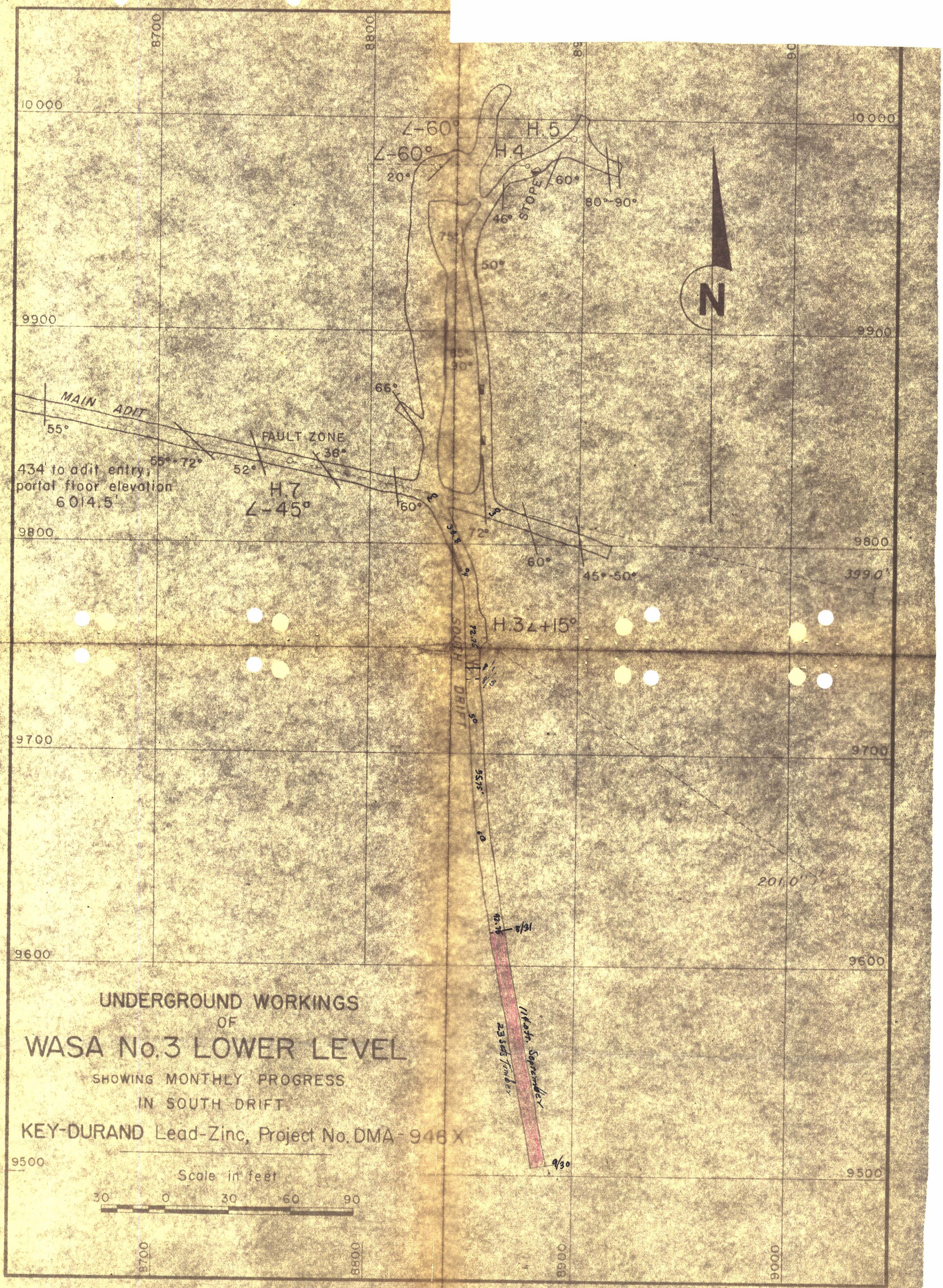
UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X

Scale in feet
60 0 60 120

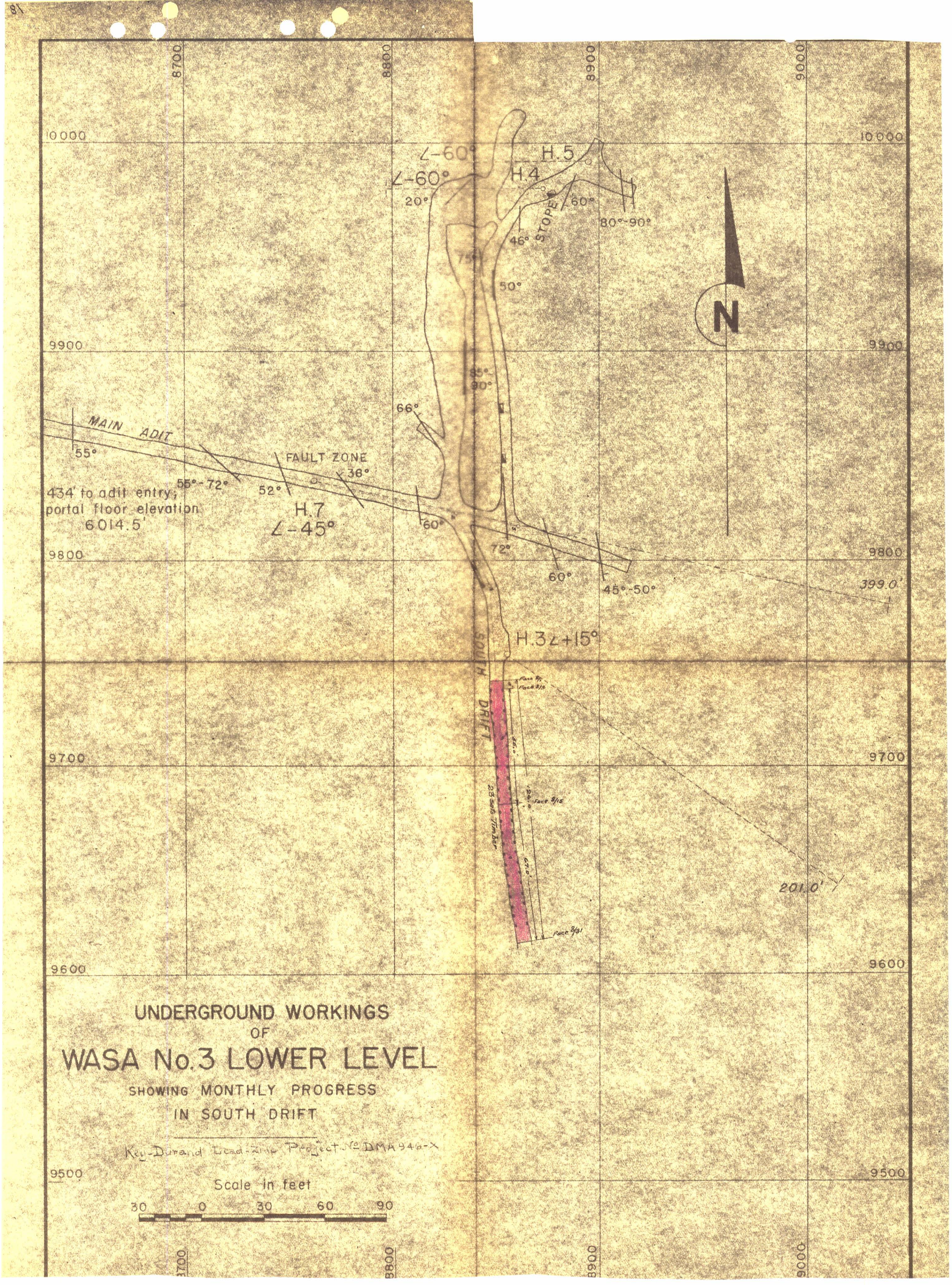
Francis A. Hancock, Mining Engineer


S.73°08'E.
1226.75 ft.
COR. Nos. 1 & 3
N.85°20'E.
608.72 ft.
S.14°47'E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry;
portal floor elevation
6014.5 ft.
FAULT ZONE
H.7
∠-45°
H.5
H.4
∠-60°
H.3 ∠+15°
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
N.73°08'W. 1226.75 ft.
COR. No. 4
ORE
N.14°47'W. 1345.89 ft.
SHAMROCK EXTENSION
TRENCH #13
Elev. 6200 ft.
SHAMROCK VEIN
63 ft
91.11 feet to
HOPE COR. No. 4
UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer


UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
N. 85° 20' E. 608.72 ft.
N. 73° 08' E.
COR. Nos. 1 & 3
S. 14° 47' E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry;
portal floor elevation
6014.5 ft.
FAULT ZONE
H.5
H.4
H.7
H.3 ∠ + 15°
SOUTH DRIFT
399.0'
201.0'
N. 73° 08' W. 1226.75 ft.
COR. No. 4
N. 14° 47' W. 1345.89 ft.
91.11 feet to
HOPE COR. No. 4
JACK PINE
SHAMROCK EXTENSION
HOPE
N



UNDERGROUND WORKINGS
OF
WASA No.3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc, Project No. DMA-948X



UNDERGROUND WORKINGS
OF
WASA No.3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT

Key-Durand Lead-Zinc Project No. DMA 946-X

Scale in feet
30 0 30 60 90

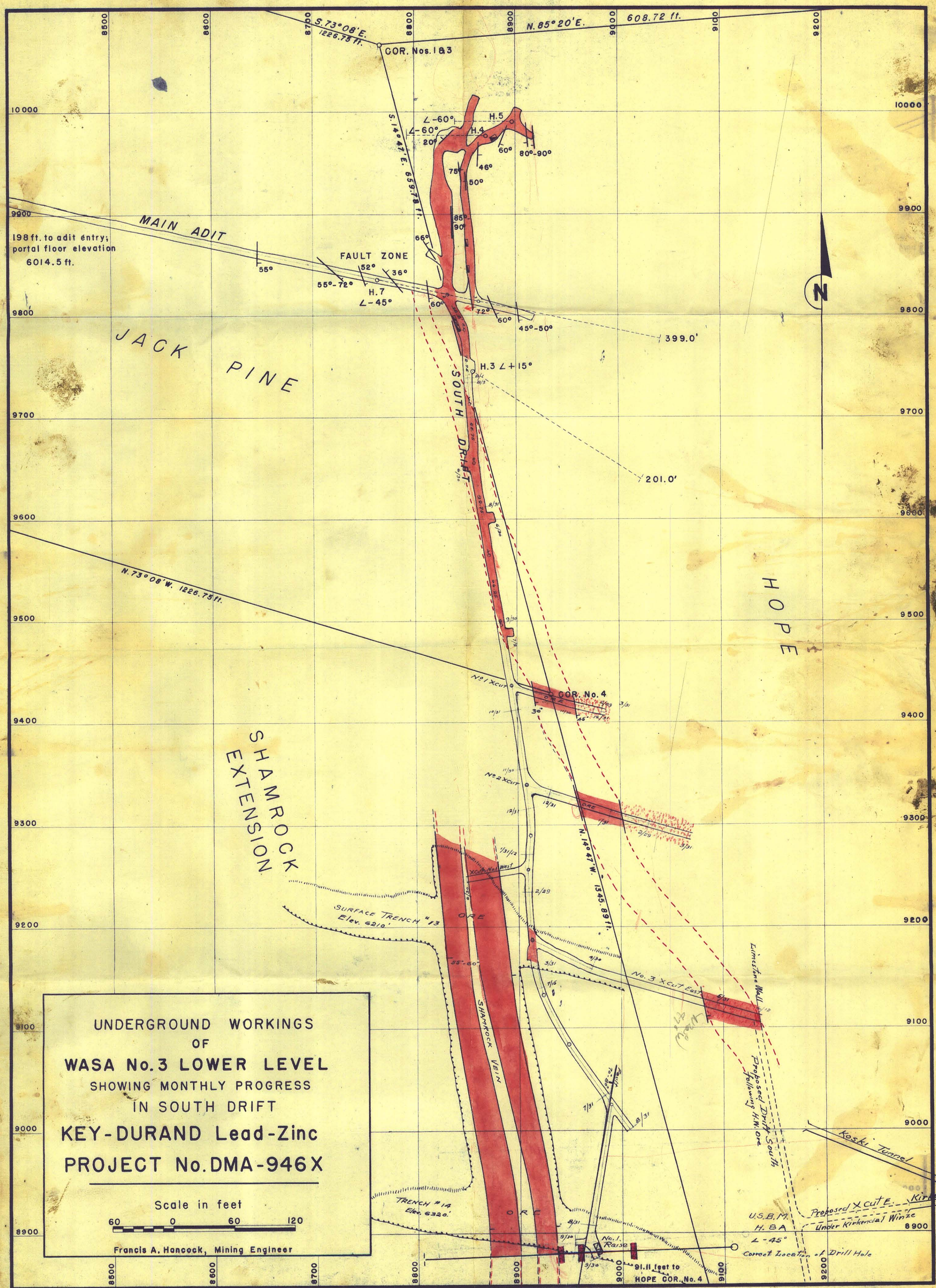
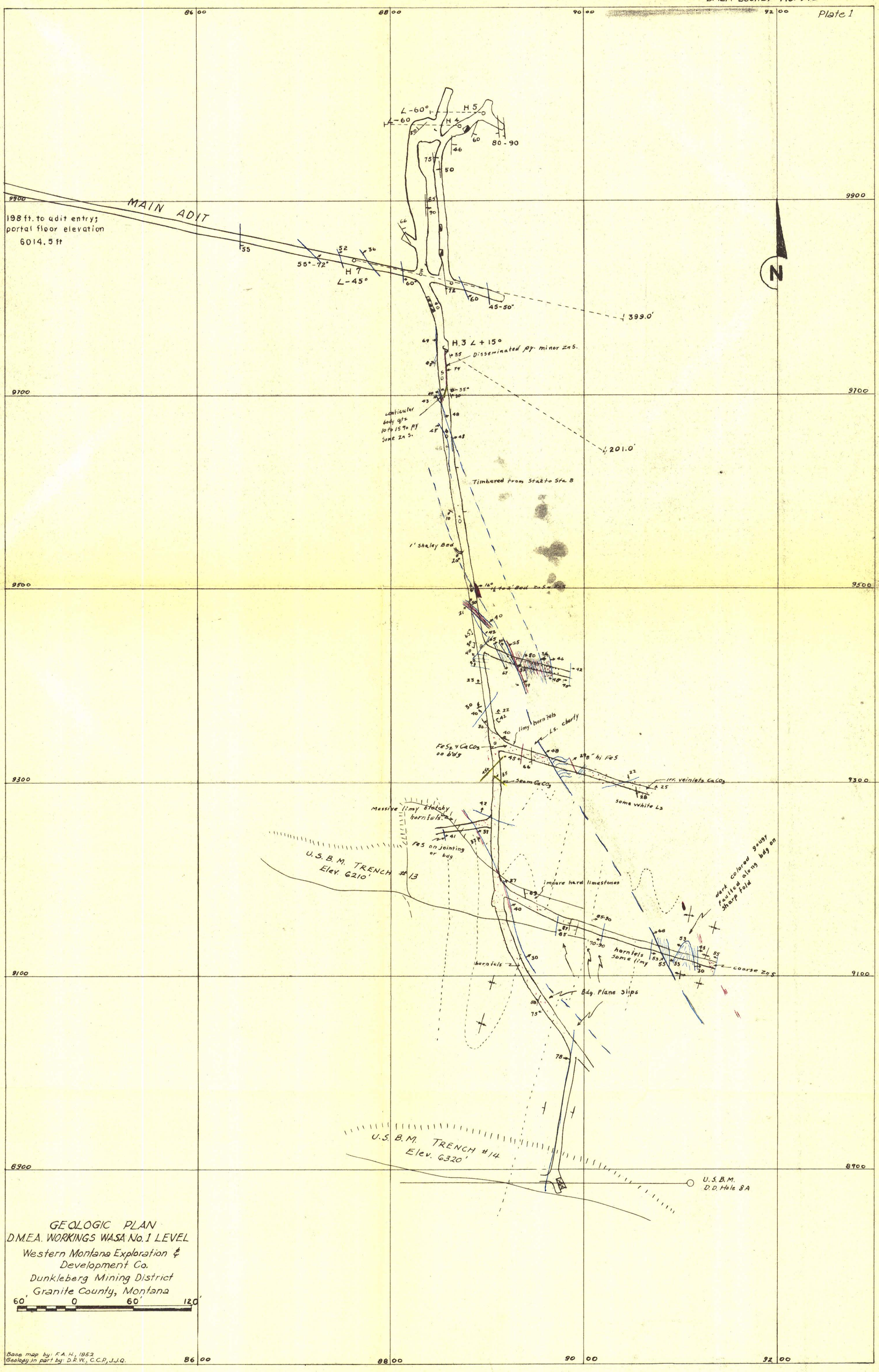

UNDERGROUND WORKINGS
OF
WASA No. 3 LOWER LEVEL
SHOWING MONTHLY PROGRESS
IN SOUTH DRIFT
KEY-DURAND Lead-Zinc
PROJECT No. DMA-946X
Scale in feet
60 0 60 120
Francis A. Hancock, Mining Engineer
S.73°08'E. 1226.75 ft.
N.85°20'E. 608.72 ft.
COR. Nos. 1 & 3
S.14°47'E. 659.78 ft.
MAIN ADIT
198 ft. to adit entry; portal floor elevation 6014.5 ft.
FAULT ZONE
H.5
H.4
H.7
H.3
399.0'
201.0'
SOUTH DRIFT
JACK PINE
HOPE
N.73°08'W. 1226.75 ft.
SHAMROCK EXTENSION
No. 1 Xcut
No. 2 Xcut
COR. No. 4
ORE
N.14°47'W. 1345.89 ft.
Xcut No. 1 West
SURFACE TRENCH #13 Elev. 6210'
No. 3 Xcut East
Limestone Wall
SHAMROCK VEIN
Proposed Drift South following H.W. ore
Koski Tunnel
TRENCH #14 Elev. 6320'
No. 1 Raise
91.11 feet to HOPE COR. No. 4
U.S.B.M. H.8A ∠-45°
Proposed X cut E. under Kirkendal Winze
Correct Location of Drill Hole

Plate 1



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

Plate 2

	Wdth.	Pb. %	Zn. %	Ag. Ozs.
No. 10-S	3'	0.04	0.6	0.24
No. 9-S	5'	0.07	2.0	0.10
No. 8-S	5'	0.04	4.1	0.16
No. 7-S	5'	0.08	4.1	0.68
No. 6-S	5'	0.06	0.2	0.34
No. 5-S	5'	0.08	1.8	0.26
No. 4-S	5'	0.06	1.5	N.D.
No. 3-S	5'	0.06	4.2	0.03
No. 2-S	5'	0.06	0.1	N.D.
No. 1-S	5'	0.04	0.1	N.D.

	Wdth	Pb %	Zn %	Ag Ozs
No. 18-S	2.5'	0.07	0.4	0.50
No. 17-S	5'	0.08	3.3	0.18
No. 16-S	5'	0.07	0.2	0.12
No. 15-S	5'	0.06	2.7	0.20
No. 14-S	3'	0.07	0.3	0.14
No. 13-S	5'	0.04	0.6	0.16
No. 12-S	5'	0.06	3.0	0.26
No. 11-S	5'	0.06	0.1	0.18

ASSAY PLAN OF No. 1, No. 2 & No. 3 CROSSCUTS OF KEY-DURAND DMEA PROJECT No. 1-DMA-30
(WASA MINE)
GRANITE COUNTY, MONTANA

ANNEX II

Hole 8 A

Location: 3,885 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.

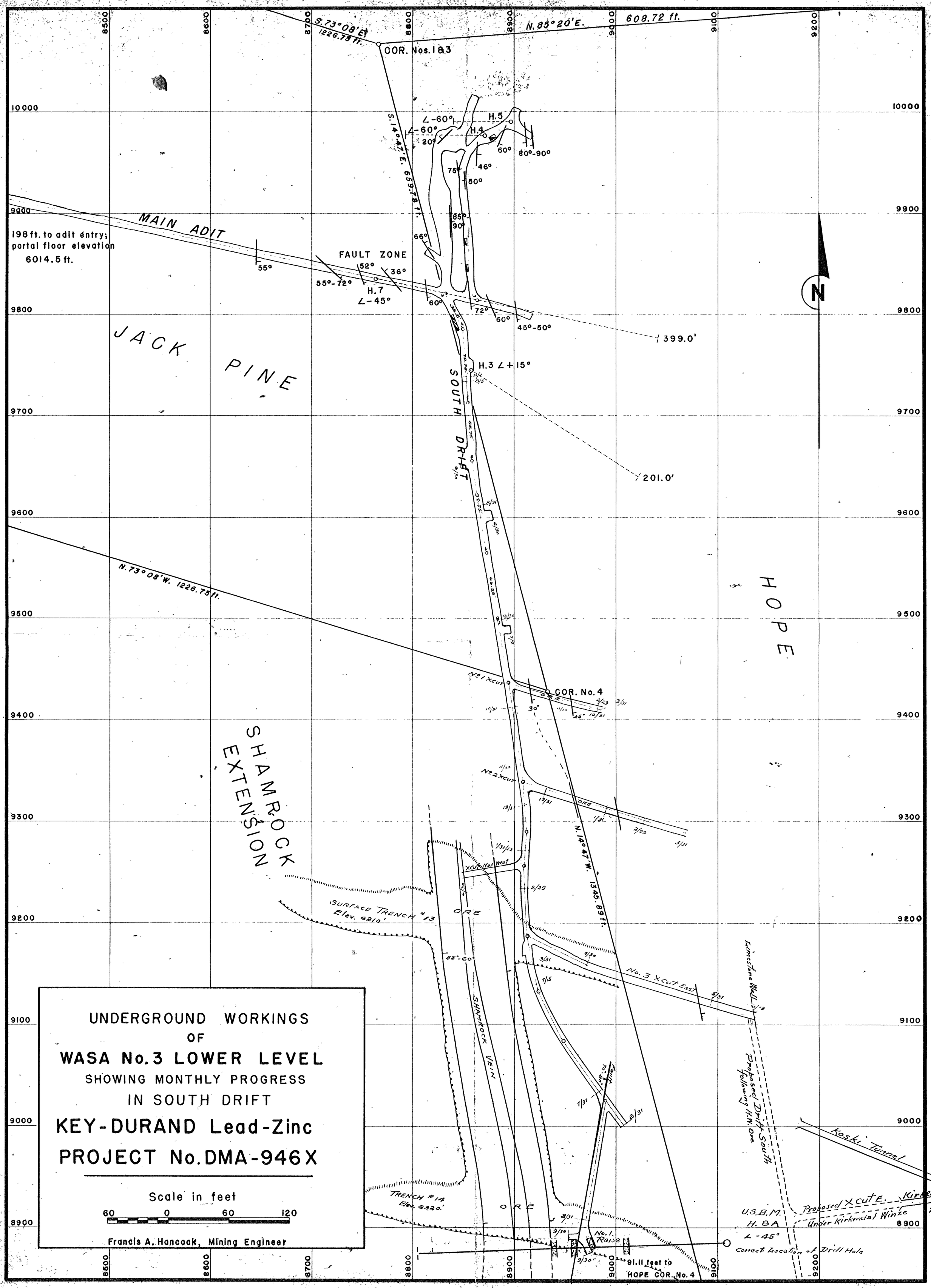
Hole 8 A (continued)

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		
403.7	404.4	Limestone	29.9						.05*	.05*	.1		
404.4	407.3	do.	50.6						No sludge - lost water				
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*		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Limestone Wall
Proposed Drift South following H.W. ore
Kaski Tunnel
TRENCH #14 Elev. 6320'
No. 1 Raise
U.S.B.M. H. 8A ∠-45°
Proposed Xcut E. Under Kirkendal Winze
Correct Location of Drill Hole
91.11 feet to HOPE COR. No. 4